



## **ERSA 2019 - Abstract Book**

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The abstracts are listed in alphabetical order of authors' names (submitters).  
Presenters are in bold and underlined.

### **Economic geography, identity, and electoral preferences: the case of the Welsh Brexit vote**

**Dr. Maria Abreu**<sup>1</sup>, Professor Calvin Jones<sup>2</sup>

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S43-S2 Geography of discontent: Explanations and policies  
IUT\_Room 205, August 30, 2019, 11:00 AM - 1:00 PM

A wave of recent electoral shocks has highlighted the presence of significant regional disparities in electoral outcomes. Few are as remarkable as the result of the UK's EU referendum in Wales, given the nation's very significant share of EU structural funds, and the reliance of its economy on trade with the rest of the EU. Several studies of the EU referendum vote have identified the importance of local economic context, demographic composition, and economic and cultural shocks, in explaining the result. An interesting and as yet unresolved question is the extent to which the vote can be explained by the interaction between different identities (Welsh, English, and European), and the local context. We analyse this interaction using British Election Survey data collected in June/July 2016, and a semi-parametric matching estimator. Our results show that after controlling for economic context and shocks, individuals with strong Welsh or English identities were significantly more likely to vote Leave, while those with less strongly defined national identities, and those with a Welsh identity linked specifically to the Welsh Language, were more likely to vote Remain. We also find that individuals with strong English identities residing in Wales were as likely to vote Leave as those remaining in England, while individuals with strong English identities resident in Scotland were significantly less likely to vote Leave.

### **Salaries or culture? Short and medium-term drivers of graduate migration flows in the UK**

**Dr. Maria Abreu**<sup>1</sup>

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S69-S2 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 28, 2019, 2:00 PM - 4:00 PM

A small but growing literature has analysed the drivers of internal graduate migration flows in high-income economies, but several unresolved questions remain. A key issue is the extent to which new graduates are

driven by the economic circumstances of their origin and potential destination locations, as opposed to the social, aesthetic, natural, and cultural amenities of these locations. This paper addresses this gap in the literature using new comprehensive longitudinal data for the UK, and a semi-parametric Coarsened Exact Matching (CEM) estimation approach, to analyse the extent to which graduates are driven by salaries, living expenses, and natural and cultural amenities. This approach controls for self-selection into higher education institutions and subject choice, as well as parental background and other variables that constrain the choice of post-graduation location. The paper concludes by analysing the potential impact of these flows on the spatial disparities in skills and productivity in the UK, and the resulting policy implications.

### **Is Proximity Enough? Factors Explaining Intra-and Inter-Regional Spillovers from University Research in Spain**

Prof. Daniel Coronado<sup>1</sup>, **Prof. Manuel Acosta<sup>1</sup>**, Dr Esther Ferrandiz<sup>1</sup>, Dr María Dolores León<sup>1</sup>  
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G21-O1 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 9:00 AM - 10:30 AM

Much of the empirical research suggests that spillovers from scientific knowledge tend to be geographically concentrated. However, spillovers are far from being automatic; along with geographical proximity, there are other factors that might explain why some firms are capable of capturing scientific knowledge from nearby universities better than others. This paper uses a new dataset on firm-patent citations of university-scientific publications to study the factors affecting the acquisition of public scientific knowledge by firms in Spain. We follow the conventional approach of using patent citations to trace knowledge spillovers, but in contrast to previous studies, we combine firms' characteristics with the regional environment and distance to explain why some firms benefit from academic knowledge produced in their own regions and others do not. With a regionalized sample of 5,218 patents applied for by 1,717 firms, we have gathered the number of scientific citations in those patents, which have been classified by scientific field, and identified their origin (regional or external). With this information, we address the following research questions: Where does the scientific knowledge acquired by Spanish firms come from? Are there differences in the quality of the absorbed science according to the region from which it comes? Which regions are the main producers and which are the main users of science? Are there differences according to scientific fields? What are the microeconomic factors affecting the absorption of scientific knowledge by firms? The methodology combines the presentation of the main facts through some descriptive tables and statistics, along with a gravity equation to identify the factors affecting the scientific knowledge acquisition by Spanish firms. Our preliminary results show that 38% of scientific knowledge used in patents applied for by Spanish firms stems from the U.S., and only 7% is generated by Spanish universities. The regional analysis of the Spanish origin of science shows great disparity among regions. Before considering the microeconomic and regional factors, the data support the hypothesis of proximity: firms cite more scientific papers from universities in their own region than papers from other regions.

### **Why did Highways Cause Suburbanization? The Role of Highway Congestion**

**Mr Yusuke Adachi<sup>1</sup>**

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G16-YS1 Transport, Land Use and Accessibility  
IUT\_Room 104, August 29, 2019, 11:00 AM - 1:00 PM

We provide a theory and evidence that highway construction in metropolitan areas has a causal effect on residents and employment decentralization. We develop a theoretical model that illustrates the effect of highway construction on workers' residence and workplace choices. The analysis of the model indicates that highway construction reduces not only the population, but also employment in the center of metropolitan areas when this area has a large population. To examine the validity of our theoretical model, we use partial identification with data on central cities in the United States from 1950 to 1990. The results imply that our theoretical model is evidenced by all cities of metropolitan areas, though data on populated cities in 1950 do not support previous land use models.

### **Academic Excellence and Regional Development in Europe**

Ms Maria Adamakou<sup>1</sup>, Professor George Petrakos<sup>1</sup>

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S17-S1 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 11:00 AM - 1:00 PM

See the extended abstract online.

### **Why should we hire you? Rural employers' motivations to hire newcomers in the Canadian Prairies.**

Dr. Mikaël Akimowicz<sup>1</sup>, Sherine Salmon<sup>1</sup>, Dr. William Ashton<sup>1</sup>

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G23-O4 Rural Issues  
MILC\_Room 410, August 30, 2019, 2:00 PM - 4:00 PM

In order to mitigate a declining natural demographic growth that could fall below around 2030, Canada relies on a consequent immigration policy. However, once in Canada newcomers strive to settle. In particular, they have difficulties to find their place on the job market. Research has long focused on discrimination towards newcomers during the hiring process, on newcomers' job market accessibility especially in regards to skills, and on employees' motivations at work. In this presentation, we switch lens and look at the employer's side, which has been little investigated. In particular, we look at rural employers' motivations to hire newcomers.

In this first attempt to fill a gap in the literature, we used the Self-determination theory to design an on-line survey aiming to highlight small and medium business owners' motivations to hire newcomers. The on-line survey was directed towards rural employers all over the Canadian Prairie Provinces (i.e., Manitoba, Saskatchewan, and Alberta). A first section collected data about employers' perspectives on business financial impacts, newcomers' skills, newcomers' behavior, and community development. A second section collected information about hiring and retention strategies to crosscheck the previous result. A third section gathered some businesses and employers' characteristics.

Although, newcomers' behaviors and community development factors fostered intrinsic motivators, results contradicted our working hypotheses that business financial impacts and newcomers' skills would nurture more extrinsic motivators. Further analyses suggested that employers are driven by the alignment of their values (integrated motivators) with the valuation of their self-worth (introjected motivators) through the mediation of employers' understanding of newcomers' struggle (identified motivators). These results tend to align with the claims of the Means-Ends Fusion theory that any activity can be intrinsically and extrinsically motivated based on its similarity with the pursued goals. Consequently, these results tend to support Locke and Schattke's (2018) call for a better integration of the several theories that are used to study motivations based on the observation that they are not concurrent but complementary.

## **Catching the train? A community-based analysis of digital technologies utilization in rural Manitoba, Canada.**

Sherine Salmon<sup>1</sup>, Dr. Mikaël Akimowicz<sup>1</sup>

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G23-O1 Rural Issues

MILC\_Room 410, August 29, 2019, 2:00 PM - 4:00 PM

Despite new opportunities for development in rural communities, digital technologies have not always met expectations. In particular, their status as a panacea for rural communities has been extensively discussed over the last twenty years. Many rural communities have been slow to adopt these technologies or achieve meaningful outcomes, further contributing to the urban-rural digital divide. Researchers have identified the use of digital technologies as an important area requiring a better understanding in order to realize their potential for expanding and developing capitals.

In this presentation, we investigate the opportunities and barriers associated with the use of digital technologies in three rural communities of Southern Manitoba, Canada. The content of interviews with business representatives and focus groups with youths and seniors is analyzed through the theoretical framework of the community capitals (CC), which includes natural, built, financial, political, human, social, and cultural capitals. In our operationalization of the CC framework, we introduce a dynamic perspective by discussing capitals interactions as well as in- and out-flows of capitals in addition to the current stocks of capitals.

The analysis highlights the resilience of rural communities and the creativity associated with their utilization of digital technologies, which enable them to take advantage of opportunities despite serious barriers. In particular, preliminary results show that:

- The lack of infrastructure to support coverage and connectivity can lead to security issues;
- Access costs are higher in rural areas, where extra equipment is needed to boost signals and services are not always delivered;
- Skills are mostly self-taught, which fits the entrepreneurial attitude of most business representatives but can result in fears among seniors who tend to learn more slowly;
- Integration of digital technologies is fast-paced in every domain of everyday life (education, social life, economic activity)

By August 2019, data analysis will be complete and definite results will be included in the presentation.

## **Students' residential decision-making processes in the UK: considering the "green" factors?**

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S16-S1 Students, University and the City: Location Choice and Mobility Behaviour

IUT\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

Over the last two decades, student accommodation have been intensely developed in the United Kingdom (UK) to match the growing demand initiated by profound changes regarding the functioning of the higher education (HE) system in order to widen its participation. There has been a diversification of the types of accommodation that have been supplied to students, in part, tied to the increasing numbers of students in Higher Education Institutions (HEIs). The student demand for housing has intensified, which has compelled accommodation providers to adjust their products to the circumstances. the growing diversity of student housing choices has produced spatial socio- economic tensions. For instance, students with limited

resources have restricted options available; many might consider staying at a parental home or residing in cheap and over-crowded HMOs. Contrarily, the wealthiest students can choose from a vast array of possibilities. Beyond these socio-economic discrepancies, the variety of student housing supply has created environmental gaps. Hitherto unexplored in academic debates, the sustainability characteristics of student accommodation vary geographically. For instance, the environmental linkages embedded in the dynamics between the supply and demand for student housing have been overlooked in the academic debate. The study of the social, economic, and environmental intersects between the student housing supply and demand is central in this research. Producing diverse and complex student geographies, the study of these interrelationships is primordial to the advancement of understanding sustainability issues in the student housing sector.

Based on a statistical analysis of data collected through an online-survey, this paper examines the diversity of motives integrated in students' residential decision-making processes and explores student's residential pathways according to socio-economic and demographic features. Through a building taxonomy, the paper also showcases the physical and environmental features of housing occupied by student households in the university town of Loughborough (England). Thus, this paper seeks to address this precise gap and, consequently, contribute to academic knowledge by expanding contemporary debates in student geographies.

See extended abstract online.

### **Entrepreneurial whim and "empty" territories**

Prof. Alexandre Asselineau<sup>2</sup>, Prof. Anne Albert-Cromarias<sup>1</sup>

<sup>1</sup>Groupe ESC Clermont, Clermont Ferrand, France, <sup>2</sup>Burgundy School of Business, Dijon, France

S18-S1 Entrepreneurship and local development: symbiosis and/or dissonance?  
UdL\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

The literature on the field of entrepreneurship has been considerably enriched over the past few years and deals with many aspects of the act of undertaking. A dominant trend seems to consider that, to be entrepreneurial, you need to be well surrounded, especially by having all the necessary partners at hand, hence the incubators and other collaborative innovation spaces.

In a global context of globalization and nomadic business, the question of the relationship of the company to its territory has arisen. The competitive paradigm also prevails in this field, and the rankings of countries, cities or regions that are leaders in terms of attractiveness inevitably lead to the development and equipping of territories that are already leaders and that have competitive advantages that are considered decisive compared to others.

This double observation raises two complementary questions. While we most often reason in reference to large companies, what about the smallest of them, by far the most numerous? On the other hand, since some territories inexorably attract more and more activity, what happens to the others, these "empty" territories which, less well endowed, therefore seem inexorably condemned?

This communication proposes to take an opposite approach to the mainstream perspective which postulate territorial determinism: if it is impossible to fight the trend desertification of the least attractive territories, how to explain the success of certain entrepreneurs (audacious? unconscious?) who engage in forgotten territories? Is it a whim?

We will approach this exploration through two complementary case studies, very different from all points of view, both in terms of activities, geographical areas, individuals involved and time dimension - one is in the start-up phase; the other is 40 years old.

In the light of these two cases, we can try to give some keys of analysis to the decisions taken by some atypical entrepreneurs to settle in an "empty" territory, rather unattractive and/or undeveloped, which they know well that they will have neither the resources nor the skills necessary to develop an ambitious project.

### **Building on Proximities for Coopetition: The Case of small Winegrowers**

Prof. Anne Albert-Cromarias<sup>1</sup>, Prof. Alexandre Asselineau<sup>2</sup>

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S20-S1 Collective action, commons and commoning: towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 11:00 AM - 1:00 PM

The literature on coopetition has grown considerably over the past ten years and has progressively moved towards a theory. It is now a good time to question its relevance in the field of small or even very small enterprises. Coopetition seems more crucial for SMEs as they often face a distinct scarcity of resources. Despite various and numerous researches, the literature has never questioned the role played in coopetition by the territory even if it seems to be essential to several SMEs, which are characterized, amongst other features, by territorial proximity. Their local or regional market is often relatively limited and they have developed neighbourhood networks as a source of labour and suppliers. Several small businesses are imbedded in a clearly defined geographical area, such as those manufacturing so-called 'terroir' products, the main feature of which is precisely the geographical location of their production. Although space is not just something supporting economic activities, neither is it, at the other end, a necessary nor sufficient condition for collaboration or innovation – the various proximities, geographical and socioeconomic actually need to be activated. It therefore seems useful to analyse coopetition through the lens of proximities based on the study of a recently established group of small winegrowers.

Our exploratory study aims to understand how winegrowers in a territory little known for its wine, manage to exist, and make the territory exist too, thanks to coopetitive relationships based on proximity. Our study of the case of the 'Ici commence la Loire' vineyards shows the prominent role played by proximities in establishing coopetitive relationships amongst winegrowers – first proximity in its geographical meaning, but also socioeconomic proximity, both in its coordination dimension (interpersonal relationships, mutual trust, joint projects) and in its resource dimension (history, small-sized vineyards, historical characteristics, soil and climate). By activating socioeconomic proximities, the winegrowers create value collectively, and then capture this value collectively and individually by selling their wine. What matters is less the existing natural resources than the will to work together and define governance rules that will make it possible to coordinate the necessary compromises and decision making, hence to develop coopetitive relationships, in this case spontaneous, which are all the more crucial as these are small structures.

### **First steps to define a new index measuring inequality in cultural proximity for European cities**

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G24-O4 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 9:00 AM - 10:30 AM

In a context of high social inequalities the role of culture is more important than ever to bridge socio-economic gaps. Eurostat data shows that cultural participation rate is higher in urban areas, however, almost one third (31 %) of Europeans living in cities do not participate at all in cultural activities. From a

geographical perspective, the number of cultural venues, their spatial configuration across Europe, and their distribution within urban areas, can be seen as a basic proxy to measure opportunities people have of cultural participation.

Spatial proximity, indeed, highlights a meaningful measure of local provision which interacts with other factors to provide information on enabling resources or “opportunity structures”. Drawing on these considerations, the objective of our paper is to develop a co-distribution index of culture and population that is capable of providing an initial layer to explore inequality in culture accessibility across 190 European cities.

We proceed by step. The first consists of the collection and treatment of georeferenced information on cultural venues, population and main public transport; in the second step we design three indicators measuring in each cultural and creative city (1) people living close to cultural venues in each city, (2) the average minimum distance to cultural venues, (3) accessibility of cultural venues by public transport. The third step analyses results and identify further steps to detail the index.

This raw index aims at building a first comprehensive, Europe-wide approach relating georeferenced data about cultural venues to population distribution in European cities. The study may lay the foundations for further analysis and to support debate on the policy implications of spatial inequality and access to culture.

### **Convergence in EU: from country level to regional level**

**Prof Lucian-Liviu Albu<sup>1</sup>**, PhD Ada-Cristina Marinescu<sup>2</sup>

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G08-O2 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 2:00 PM - 4:00 PM

Following other studies demonstrating empirically the complex road to convergence in EU, based on an updated analyse, we highlight as a quasi-general rule: a country starting at a relative small level of income per capita (far on the left side at that moment from the average of its group level) will strongly converge to the group average but in this way it will be registered a process of divergence among its component regions. A main problem is when the regional divergence will reverse in a regional convergence process. In our study we propose a theoretical model to explain this phenomenon of switching from regional divergence to regional convergence doubled by a simulation model. As application of the model, we are using few levels of grouping (digitalisation). Thus, firstly, EU (27 countries after Brexit) is divided in three conventional groups of countries: North-West (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, and Sweden); South (Cyprus, Greece, Italy, Malta, Portugal and Spain); East (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia). Secondly, each country is divided in its component regions, according to the NUTS 2 Eurostat database. Thirdly, each region in a country is divided in its small territorial units (counties), according to the NUTS 3 Eurostat database. Finally, considering the period starting in 2000, we present a resulted typology of countries and respectively of regions in EU by using two criteria (changes in position against the average income per capita in EU and respectively existence of a process of convergence/divergence among components).

### **Repair and reuse networks? A practical application of a spatio-temporal analysis method**

Dr. Julie Gobert<sup>2</sup>, Dr. Romain Allais<sup>1</sup>

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S21-S1 Circularities and proximities: stakeholders, scales, resources  
UdL\_Room 106, August 28, 2019, 11:00 AM - 1:00 PM

Recyluse is a research and operational project targeting to better understand the nature of the different resistances against and interests in repair and reuse not only from the citizens but also from the public authorities and waste operators. It questions the collective capacity to build circular networks of reuse and repair, while taking into account local characteristics, path dependences and technical lock-in. In contrast to the current waste management model, which is centralized and subject to the techno-economic imperatives of industrial means of waste processing, it is assumed that the future of waste management is not a unique place but a network of territorialized initiatives based on repair and reuse activities with high social and environmental values.

This project is based on two French case studies (the agglomération Pays Basque and the conurbation (communauté de communes) Coeur de Savoie) and different work sequences (territorial diagnosis, organisation of living labs). It also combines different scientific disciplines: engineering sciences and social sciences and quantitative and qualitative approaches (survey, semi-directive interviews, observation, organisation of living labs).

This communication presents the implementation of an analysis method of territorial projects that considers both temporal and spatial dimensions in addition to stakeholders' network.

We develop the concept of perimeter of action, defined by the evolution of stakeholders' network and their mobilization of resources. These resources may be tangible (e.g. wood or machine tool) or intangible (e.g. patent, knowledge), territorial (i.e. specific to a territory), exogeneous or generic but they are all socially built. These resources are assessed thanks to the framework for (im-)material flow analysis that consider resources at multiple analytical levels, described as micro, meso and macro levels. The perimeter of action is dynamic and embedded in a history: both inherited (i.e. previously constructed networks, geographical perimeter, sector ...) and built during the structuring and realization phases of a project.

While analyzing these 2 case studies throughout the methodology presented above, we intend to determine which endogenous, exogenous and generic resources are employed to build projects and particularly repair and reuse networks. We attempt to see how these kinds of short local systems of waste valorization can be implemented and whether they meet the users' expectations. This should give inputs for decision takers at the local and regional levels.

### **Urban Wage Premium in a labour market with informality and non-employment**

Ms Eloiza R F Almeida<sup>1</sup>, Mr Veneziano de Castro Araújo<sup>1</sup>, Ms Solange Ledi Gonçalves<sup>1</sup>

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G05-R1 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 2:00 PM - 4:00 PM

This paper aims to empirically analyse the Urban Wage Premium (UWP) of Metropolitan Areas (MAs), addressing the role of the workers' occupational skill, education, and tenure in UWP composition at different agglomeration levels, but also investigating the main components of wage differences between MAs. Our contribution to this line of research relies on the possibility of investigate the UWP for both sectors (formal and informal) and the application of Heckman's correction, since it is possible to reconstruct



the panel of unemployed individuals using a wide comprehensive database covering Brazilian workers from 2012 to 2018, and considering workers of many sectors, social levels, and formality status. The results, supported by robustness checks, indicate that there is a UWP for workers in MAs, but that is decreasing as agglomeration becomes denser. By exploring the workers' formality status, it was verified that formal workers UWP is in line with previous studies while informal workers UWP drives the overall results, repeating the decreasing behaviour. The fact that there is a distinct UWP pattern between these groups according to the agglomeration level is new in UWP studies for Brazil since the majority of them does not comprises informal jobs. When located in denser areas, workers in high-skilled occupations or with a higher level of education are better paid, regardless if formal or informal. While informal workers in low-skilled occupations or with lower education level have a higher premium if located in Small MAs.

### **Rural and agricultural development by land consolidation: a spatial production analysis of Asturias' parishes**

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G23-O1 Rural Issues

MILC\_Room 410, August 29, 2019, 2:00 PM - 4:00 PM

This paper evaluates the impact of the land consolidation processes that have taken place in Asturias during the period 2001-2017. These processes have been received European funds because of their potential to improve the economic activity in rural areas and stabilize their population. In particular, land consolidation aims to increase farms' productivity as these processes involve public investment in infrastructures that favour accessibility and development in these and adjacent areas. To evaluate the effect of land consolidation processes on milk and meat production we treat the parishes in Asturias as production units and estimate a set of distance functions. We use the number of dairy and beef herd in the parishes as a proxy of the production of the farms located in each parish. With this aim we consider different indicators collecting several aspects about the quantity and the intensity of those consolidation processes. In particular, we consider the number of processes, their duration, which is an indicator that collects the time elapsed between processes, and investment per hectare carried out.

Our preliminary results indicate that only the investment in land consolidation contributes to increase farms production. Therefore, processes should not be separated in time. However, the investment has an opposite effect, that is, the intensity of the processes in monetary terms helps to encourage agricultural production. It also worth noting that the interactions with investment are positive. This results suggest that higher investment contribute to enhance the effect of the other indicators of land consolidation.

To identify the magnitude and the significance of the spillover effects equivalent regressions are performed including the land consolidation processes carried out in the adjacent parishes. Following the standard approach in the literature, we present estimations of production function including the spillover effects of land consolidation indicators from neighboring parishes. They are as relevant as the internal consolidation processes, thereby confirming the importance of considering the notion of spatial interactions in these studies.

## **Threshold Cointegration in evaluation of structural breaks effects on Spatial Markets Integration: the Brazilian Cattle Market case**

Dr. Alexandre Alves<sup>1</sup>, Dr. Aline Pancera<sup>2</sup>

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G23-O3 Rural Issues

MILC\_Room 410, August 30, 2019, 11:00 AM - 1:00 PM

Aiming to understand the consequences of exogenous shocks which changed the common economic and the central cattle beef Brazilian markets from 2006 to 2017, the current study has as main goal to identify the pattern of cattle beef market integration considering transfer costs for each common economic market. Researches about de spatial integration are very important because they show the regions that influence other ones, resulting in reductions in government spending, avoiding the multiplicity of intervention and leading to efficient resource allocation. The models used to test co-integration were the Threshold Autoregressive Models – TAR and the Threshold Error Correction Model – ECM-TAR. A preliminary structural breaks test divided the series into three smaller samples defined by Period I (beginning of 2006 to 2008), Period II (2009 to 2013) and Period III (2014 to beginning of 2017). In Period I, São Paulo region presented the deepest influence on prices comparing to other ones, being characterized as the central market and in this case the common economic market was composed by São Paulo, Minas Gerais, Goiás and Mato Grosso do Sul. In the Periods II and III, Mato Grosso do Sul became the central market where, in the first case, the common market contained Paraná State and the states from North, Midwest and South-East regions. Finally, Mato Grosso, Mato Grosso do Sul, Minas Gerais, São Paulo, Rondônia e Rio Grande do Sul were part of the common market in Period III. Results of the TAR Model indicated that the each common market was spatially co-integrated in all Periods, but for the ECM-TAR model, the regions of the common market from Period I didn't co-integrate with São Paulo, the markets from Period II were totally co-integrated with Mato Grosso do Sul and the ones from Period III were partially co-integrated with Mato Grosso do Sul. The study identified that the changes on industrial productive structure have interfered in the spatial market integration. This indicated that beef cattle market presented modifications that interfered in integration dynamics. Thus, the results pointed out that the regional changes on beef cattle agribusiness altered the behavior of common economic market.

## **Economies of agglomeration and employment in agroindustry: a study applied to brazilian microregions from 2006 to 2016**

Alexandre Alves<sup>1</sup>, Dr. Jackelline Favro<sup>1</sup>

<sup>1</sup>State University of Maringá, Maringá, Brazil

G12-O4 Location of Economic Activity

MILC\_Room 310, August 30, 2019, 2:00 PM - 4:00 PM

The industrial production structure is a fundamental component for understanding the dynamics of local employment. Thus, this study aims to investigate the relationship between the local economic structure and the level of agroindustrial employment for Brazilian microregions from 2006 to 2016, considering both the sectoral dimension, where the degree of externality of specialization and diversification affect employment, as well as the geographic dimension, which identifies the spatial externalities from agglomeration economies, where the performance of a region is affected by the neighboring regions due to the spatial dependence on the concentration of economic activities. For doing so, the Exploratory Spatial Data Analysis (ESDA) and static spatial panel data analysis with fixed effects were used as econometric tools, allowing capturing possible regional differences invariant over time. The ESDA indicated the existence of positive spatial autocorrelation in the agroindustry employment level in all years under analysis, evidencing High-

High clusters predominantly in the South and Southeast regions and Low-Low clusters in the North and Northeast regions. In the Central-West region, a High-High cluster was observed in 2011 in Goiás state, as well as a Low-Low cluster in Mato Grosso state during the whole period. The results obtained by the spatial panel revealed that the level of employment in the agroindustry is positively associated with the level of specialization in the same region and that the level of employment in the neighboring regions is also relevant for the growth of the local agroindustrial employment. Regarding the diversified agglomerations, no statistically significant relationship was identified with the level of employment in the agroindustry. Another result of the model was to identify that the agroindustry contributed to the dynamism of the Brazilian economy in the crisis periods, in 2009 and 2015, as it contributed to the positive aggregate performance of the manufacturing industry as a whole. In this sense, the present study provides elements that can aid in the design of regional development policies by indicating that the segments that make up the agroindustry are more productive when they operate close to one another and are important for the generation of employment and income for the Brazilian economy.

### **Energy mix simulation to reach regional energy strategy: A National impact of East Nusa Tenggara Province, Indonesia energy mix**

Dr. Adrianus Amheka<sup>1</sup>, Dr. Julius Tanesab<sup>1</sup>, Dr Yoshiro Higano<sup>2</sup>, Nonce Farida Tuati<sup>1</sup>

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G14-YS1 Energy and Ecological Transition  
IUT\_Room 201, August 29, 2019, 11:00 AM - 1:00 PM

More than 70% of global energy demand growth was met by fossil fuels as a trigger for increasing GHG emissions and the Indonesian itself has contributed around 6.678 million stock tank barrels (MMSTB) for that. Indonesian primary energy demand in 2025 from oil is 98.7 Million TOE or 24.7% from energy mix and expected to be increased up to 197.7 Million TOE or around 19.5% from energy mix in 2050. In fulfilling national energy needs, regional functions in achieving energy security is indispensable. For that through national energy general plan is targeted to reach renewable energy (RE) mix in 2025 is minimum 23% of total primary energy. In this study several indicators used such as social economy, energy and the environment using LEAP simulation. The results show that East Nusa Tenggara (NTT) Province has potential to develop RE, with the potential of primary energy resources of 23.8 GW enabling the Province reach the RE mix target of up to 24% in 2025 and 31% in 2050 while GHG emission decreased 9% and 11% from usual condition in 2025 and 2050 respectively. This means current energy structure have space to restructure the energy system to be more optimal in achieving regional energy independence.

### **Foresight analysis and strategic thinking: Prospects for the settlement of Greeks in the countryside in times of crisis**

Dr. Evgenia Anastasiou<sup>1</sup>

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G17-O3 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 9:00 AM - 10:30 AM

The economic development of the last decade has caused a whole host of changes within Greece. Among others, the country's demographic structure was largely affected, as new mobility flows emerged and new forms of population distribution are revealing new attractiveness zones in the rural areas. The decade 2001-2011 is characterized by a net slowdown of the intense urbanization trend. The motives of the newrurals

focus on areas with population dynamics, tourism development, agricultural activity, services and structures, reduction of geographical isolation, low cost of living and habitation.

The present paper raises the issue of the prospects of the establishment of Greek citizens in the countryside, taking into account the amenities of rural areas. Through Foresight and Strategic Thinking Methods, a longer-term framework is being developed to reflect the potential strategic choices of the internal migrants. This approach is based on a mainly qualitative analysis combining the prevailing conditions of the external environment with the pull factors of rural areas. The development of future scenarios and consequently the prospects for the establishment of Greeks in the countryside are twofold. It will become clear whether the settlement in the countryside is for Greece a phenomenon essentially generated by the economic crisis conditions and on the other hand what are the prerequisites for the further development of such a type of settlement.

### **The impact of the Federation of Yugoslavia's disintegration - fine-tuning the impact of the break up using remote sensing data**

**Dr. Magnus Andersson<sup>1</sup>**, Mr Souknilanh Keola<sup>2</sup>, Dr. Mladen Stamenkovic<sup>3</sup>

<sup>1</sup>Malmö University, Malmö, Sweden, <sup>2</sup>Institute of Developing Economies, Chiba, Japan, <sup>3</sup>Faculty of Economics, University of Belgrade, Belgrade, Serbia

S26-S2 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 2:00 PM - 4:00 PM

This study investigates how nighttime light images acquired from the Defense Meteorological Satellite Program's Operational Linescan System provide spatial and temporal insight with regards to the economic impact of the disintegration of Yugoslavia. Firstly, the study provides an overview of the economic development in Yugoslavia using conventional statistics and secondly analyses the disintegration of the federation by comparing official statistics with nighttime light data. Evaluating the impact of the disintegration of Yugoslavia as a federation and the conflicts arising in the wake of the break up are challenging since reliable data is missing. Therefore, satellite images, as one of the few sources of objective information, are potentially of great importance. We used yearly Defense Meteorological Satellite Program's Operational Linescan System composites covering the period 1992 to 2013. The analysis is divided into small geographical units (districts) based on the republics in the former Yugoslavia.

### **Ethnic Enclaves and Immigrant Self-employment: A Neighborhood Analysis of Enclave Size and Quality**

**Dr Martin Andersson<sup>1</sup>**, Dr. Johan P Larsson<sup>2</sup>, Dr. Ozge Oner<sup>2</sup>

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S19-S2 Regional Entrepreneurship Policy

UdL\_Room 103, August 30, 2019, 2:00 PM - 4:00 PM

We explore the effects of neighborhood-level ethnic enclaves on the propensity of immigrants to use business ownership as a vehicle to transcend from labor market outsiders to insiders. We exploit an exogenously partitioned grid of geocoded 1-by-1 km squares to approximate neighborhoods, and match it with Swedish full-population data from 2011-2012 to study immigrants from the Middle East. We demonstrate a robust tendency for people to leave non-employment for self-employment if many members of the neighborhood ethnic diaspora are business owners, while we observe weak effects emanating from business ownership in other groups. Net of these effects, the overall scale of the enclave, measured by local concentration of co-ethnic peers, negatively influences the propensity to become self-employed. The results

are consistent with the argument that it is not the scale, but the quality of local ethnic enclaves that influence labor market outcomes for immigrants.

### **Agglomeration Externalities across the Urban Hierarchy - critical mass or fractal structures?**

Dr Martin Andersson<sup>1</sup>, Dr. Johan P Larsson<sup>2</sup>

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G04-O3 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 2:00 PM - 4:00 PM

The debate over the relationship between productivity and the density of economic activity has largely been based on analyses where productivity differences between cities and sparser areas are attributed to differences in their density. Therefore, much of the empirical evidence of the role of density comes from productivity effects driven by large dense cities. This is particularly the case in recent work on within-city neighborhood density effects. However, there are reasons to believe that agglomeration economies, relatively speaking, are at least as important in sparser areas. For example, the role of dense towns, or neighborhoods, in the countryside could, in functional terms, play the same role as a dense neighborhood do in a large city. In this paper, we analyze the magnitude and spatial attenuation of agglomeration spillovers in different spatial contexts. We exploit geocoded Swedish data aggregated unto square grids of various sizes and study how the elasticity between density and productivity varies across spatial contexts. We also assess heterogeneity across spatial contexts in the rate at which agglomeration effects dissipate with distance. By aggregating matched employer-employee panel data over the 1990-2015 period unto these grids we document quantitatively important elasticities, indeed comparable to those in metropolitan areas, even in sparse rural areas. In fact, our estimates reveal sizeable neighborhood effects even in rural areas, and that those effects exhibit lower depreciation with space compared to urban areas.

### **The geography of access to finance: financial constraints of Swedish SMEs across the urban-rural hierarchy**

Dr Martin Andersson<sup>1</sup>, Dr. Johan Eklund<sup>1</sup>, Ms Alexandra Tsvetkova<sup>2</sup>

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S69-S3 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 28, 2019, 4:30 PM - 6:00 PM

Access to finance is essential for firms in order to scale-up their businesses and to develop their productivity. It is well established that SMEs often face more obstacles than larger firms when it comes to access to external finance, and this is often put forth as an important barrier for the growth and productivity of SMEs. Recent literature also points to that the location of SMEs also influence their access finance, though robust empirical evidence is limited. This paper presents an empirical analysis of financial constraints of SMEs across the urban-rural hierarchy in Sweden. We use a simple model of investment behavior which allows us to examine if the sensitivity of investments to internal cash flow in Swedish SMEs is influenced by their location. To this end we use firm level data covering all Swedish firms over 1997-2012. We find that the investment-cash flow sensitivity is lower in large cities and in city centers. Firms located outside of large cities and who are independent, i.e. not part of a corporate group, have highest cash flow sensitivity. Our results are consistent with the hypothesis that the location of SMEs influence their access to finance and suggest that the growth and productivity of SMEs outside the main cities may be harmed by the fact that they face stronger financial constraints.

## **Exploring How Tourists' Experiential Activities Affect Satisfaction, Memorability and Destination Image Modification of Tourists, the Case of Thessaly, Greece**

Mr Meletios Andrinou<sup>1</sup>, Mr. Theodore Metaxas<sup>1</sup>, Mrs. Marie Noelle Duquenne<sup>1</sup>

<sup>1</sup>*University Of Thessaly, Volos, Greece*

G18-O4 Tourism and Culture  
IUT\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

Memorable Tourists' Experiences are maybe one of the strongest travel motivations in nowadays. Pine's and Gilmore's "Experience Economy" had a huge impact on all economic sectors including tourism. In nowadays, many touristic enterprises have shifted their interest and try to organize and offer staged experiences for their clients in order to diversify their products and/or their services and develop sustainable. The literature review identifies six attributes linked to tourist's experiences: (i) Environment Aesthetics, (ii) Tourist's Emotions, (iii) Tourist's Experiential Participation, (iv) Tourists – Hosts Interaction, (v) Cost of the activity and (vi) Authenticity of the activity. The present study is the first attempt which examines how these attributes affect the tourist's experience in the region of Thessaly, Greece. Moreover, is examined the linkage of tourists experience to their satisfaction and their memory. As a final step, is examined how tourists' satisfaction and memorability affects (positive or negative) destination's image modification. For this purpose, primary qualitative data was collected via online questionnaires that it was sent by e-mail in 195 incoming tourists, mainly, at least 1 month after their participation in experiential culinary activities (traditional Greek cooking lessons) in agrotourism enterprises in the region of Thessaly, Greece. Confirmative Factor Analysis (CFA) using SPSS-AMOS software was used to test the hypothesized model and export all the result.

## **A local analysis of the market quality for the Parisian office building stock**

Mr Paul Andriot<sup>1</sup>

<sup>1</sup>*University of Paris Dauphine, Paris, France*

S37-S1 Geography of the real estate stock wealth and of its evolutions  
IUT\_Room 201, August 30, 2019, 9:00 AM - 10:30 AM

The objective of this article is to analyze the spatial structure of the perceived quality for the Parisian office buildings stock. Using a detailed grid that describes a building, a panel of market participants was questioned in order to reveal their quality judgments on each elements of the grid. On that basis, we elaborated a global quality score that can be applied to real buildings. This score can be split between a location quality sub-score and a building sub-score.

In the literature, the notion of Central Business District (CBD) points out a central place in the city, where the prices are maximal. In this article, we want to question the notion of centrality under the prism of the perceived quality, for the Parisian office buildings stock. We consider two urban morphology paradigms: the monocentric and the polycentric hypotheses. The first one assumes that it exists a central place around which the city develops. The second one considers several centers of attractiveness within a city. The questions we address are the following. Is the global perceived quality score monocentric or polycentric? In the first case, can we consider the CBD as the place of the maximal quality? Regarding the components of the global score, we expect a monocentric spatial structure for the location quality sub-score. As for the building quality sub-score, the maximal quality might be reached for the first ring of the Parisian metropolis, in relation with the 'Grand Paris' urban project.

In a first step we will describe our theoretical and methodological background for measuring the quality of buildings, then we will describe our sample of datas and finally we will ask the centrality of Paris CBD.

## **Location matters: a spatial econometric analysis of regional resilience in the European Union**

**Dr. Paola Annoni<sup>1</sup>**, Dr. Laura de Dominicis<sup>1</sup>, Mr Neysan Khabirpour<sup>2</sup>

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G11-O2 Spatial Econometrics

MILC\_Room 310, August 29, 2019, 2:00 PM - 4:00 PM

The aim of this study is to empirically examine regional resilience by assessing economic growth patterns in two distinct groups of regions across the European Union (EU) in the aftermath of the 2008 economic and financial crisis. In an effort to consider the regions as interconnected economic areas and account for spillover effects, the modelling approach incorporates complex spatial effects that consider both spatial heterogeneity and spatial dependence. The analysis follows a step-wise approach. First, spatial heterogeneity in the EU is assessed by employing Exploratory Spatial Data Analysis (ESDA), which identifies two distinct spatial regimes on the basis of their regional GDP per capita in 2008. The two regimes clearly divide the EU territory into a north-west core, of relatively high income regions, and a south-east periphery, of lower income regions. Next, a Spatial Durbin Model is employed to estimate the determinants of regional resilience and growth in both spatial regimes and sheds light on any potential spillover effects. Complementing more traditional factors of growth, this study employs components of the Regional Competitiveness Index (RCI) to explain growth differentials across EU regions. Empirical results indicate that while both spatial regimes experience processes of economic convergence, recent determinants of growth, as well as spillover dynamics, differ across the two. In the core regime, better institutions, higher shares of investment, and an economy specialized in higher value-added sectors significantly spur domestic growth, with investment also inducing positive spillover effects to neighbouring regions. In the peripheral regime, low shares of lower-secondary educational attainment and high shares of tertiary educational attainment have a significant positive effect on domestic growth, with higher shares of tertiary educational attainment also inducing positive spillover effects. Moreover, technological readiness is also identified as an important factor in the peripheral regime with positive spillover effects. Upon the bedrock of these findings, initial policy proposals are offered.

## **Determinants of Municipal Waste in Poland: Analyses of Spatially Varying Relationships**

**Dr. Elzbieta Antczak<sup>1</sup>**

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G24-O2 Empirical Methods in Regional and Urban Analysis

MILC\_Room 308, August 28, 2019, 2:00 PM - 4:00 PM

In Poland, identifying key factors affecting the quantity of generated and recovered waste is currently becoming one of the most significant challenges for the contemporary science dedicated to the theory and practice of waste management. The diversification, intensity and strength of influence of specific factors determine changes in the quantity and morphological composition of generated municipal waste. That knowledge may, in turn, form a basis for preparing reliable expert opinions and prognostic models, as well as support local governments in waste management decision-making processes. This article attempts to identify factors impacting on the quantity of municipal waste collected in Poland, taking into account the variability of influence of particular determinants depending on their regional diversification. The analysis covered the years 2005-2017 and local administrative units - communes (LAU-2). The spatial heterogeneity of the variable, identified spatial concentration and spatial relationships warranted applying geographically weighted regression with spatial error term (GWR-SEM) in the study. The dependent variable in regression

is the total quantity of municipal waste in kg per capita, whereas the group of determinants included: uncontrolled dumping sites, population density, share of the population at the working age as % of the total population, registrations for permanent residence, nights spent by tourists per 1000 capita, dummy variable indicated urban and rural area, dwellings per 1000 population, permanent marketplaces per 100 thousand capita, entities entered in the REGON register per 10 thous. population, graduates per 10 population and investments in waste municipal management; The results prove that, e.g.: 1) the share of waste collected separately from the households is only 30% during the year; 2) the higher the level of education the less waste is generated - especially in the north-central Poland; 3) the entities entered in the REGON register per 10 thous. population and share of the population at the working age as % of the total population are crucial for the waste quantity in regions of eastern Poland; 4) the factor most considerably as to its regional range affecting the annually collected municipal waste quantity is the nights spent by tourists per 1000 capita; 5) the share of individuals of working age was the factor most considerably (as to its strength) affected the quantity of annually collected municipal waste; 6) the applicable "litter law" does not introduce a tight, coherent, rational and effective waste management model (the investments in waste management is not significant in estimations).

### **Contradictions between Specialization and Spacial Development of company towns**

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G04-O5 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 4:30 PM - 6:00 PM

Company towns are found in a number of different countries at various stages of development. Russia is in early stage of the development of company towns economy but it has already the sufficient input into the concept and the criteria of company towns. This article focuses on company towns located in Kemerovo region, Sverdlovsk and Chelyabinsk regions of Siberian Federal District in Russia. These regions are leaders by the number of single-industries, mainly coal mining and metallurgy. We consider the financial statements of the companies located in 41 urban districts and statistics at the municipal level during 2010-2017 to develop spacial and economic models of the diversification efficiency. We conduct the dispersion analysis concluding the inequality in spacial development of single-industry towns. Regression models allow us resume low efficiency in the process of diversification. All considered regions has one dominant, more diversified single-industry town with the other, less diversified monotowns. We came to the conclusion that there are contradictions between special development and economy specialization that is due to the fact that spacial development is focused on the alignment of economic development whereas specialization means reverse process.

### **Barriers of monotown diversification: the case studies for Kemerovo region urban districts, Russia**

Dr. Irina Antonova<sup>1</sup>

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G04-R1 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 2:00 PM - 4:00 PM

Although "company towns" are found in a number of different countries and at various stages of development, they are understood differently, depending on the country. Russia, in the early stages of developing company towns' economies, already sufficiently understands the concept and the criteria of company towns. This article focuses on company towns located in the Kemerovo region, which is famous for



its coal industry. Here, all but one of the towns in the region is a single-industry town, generally related to mining. The region, therefore, is suitable for a case study. This article, which examines a sample of 14 urban districts between 2012 and 2016, makes conclusions about the legal efficiency of the diversification process in all the monotowns under consideration, except for the Yurginsky urban district. The results use a diversification efficiency matrix, which compares the diversification index, revenue growth, and the number of single-industry companies. Correlation and regression analyses indicate a direct dependence between the number of new enterprises and ones liquidated. This characterizes the process of companies' reregistration to obtain new business tax benefits and explains why the unemployment rate is determined both by the number of newly created and liquidated enterprises. The process of creating new enterprises is directly related to the size of the population, which suggests that the enterprises being created are oriented towards the domestic market and do not significantly diversify the economy of single-industry towns. Thus, a single-resource region, with a high concentration of monotowns, in the fourth stage of industrial development that is trying to diversify its economy, faces high inter regional competition for investment resources, low-efficiency tax incentives, and an orientation to a domestic market with a decreasing population.

### **The determinants of local tax rates in France**

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S38-S2 Housing Markets: information, taxes, prices  
IUT\_Room 108, August 28, 2019, 2:00 PM - 4:00 PM

Tax rates choices are made by each local government in response of the demand of local public goods and services and the disposable tax base. Local tax rates are a function of socioeconomic and political factors of the jurisdiction and of neighboring jurisdictions. Among this external factors we have grants which have an effect on the local tax choices of jurisdiction which was mentioned by Lago Penas (2008), economic shocks can also effect the local tax choice of a jurisdiction which was argued by Castells et al (2004) and neighboring jurisdictions could also impact the choice of local tax. For theoretical review, this last external factor have a major impact on local tax choice of a jurisdiction. It's the main driving force in local setting. It means when a jurisdictions decides to increase or to decrease its tax rate impact automatically the tax rates of neighboring jurisdictions. This reaction implies that tax interactions or tax mimicking exist among jurisdictions. According to the economic theory, tax mimicking is due to tax competition introduced by Tiebout (1956) and Mierzkoski (1986) and yardstick competition presented by Salmon (1987) and Besley et Case (1995).

The paper uses two models applied to the counties of two French Regions (Rhône-Alpes and PACA) to study the determinant of housing and property taxes. An original dataset has been built for 2014 for this paper. The paper also uses spatial econometrics (a spatial Durbin model and a spatial lag model) to study whether the tax rates in a county are influenced by the tax rates of neighboring counties.

### **From expansion to sustainable growth thanks to the ecological transformation of the existing**

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Territory and modern city have developed according to the needs and criteria of localization and thanks to high efficiency technologies and materials. But both are not "static", that is they are linked to the change of space, to climate changes and to the duration of the materials.

The paper addresses these problems, needs and opportunities to underline the importance of ordinary, but above all extraordinary, maintenance of the existing city and of the infrastructures that, over time, have designed and organized the territory. The recent tragic events in Genoa, Italy, with the collapse of the Morandi bridge, show how this, beyond any legal responsibility, is indispensable.

Since 1972, with *The Limits to Growth*, the exhaustion of the paradigm has been highlighted - using, metaphorically, the term referred by Khun (1962) to the scientific revolutions - of the industrial city and, after decades of expansion, the western industrialized city has long stopped this trend.

Given the mentioned limits of the industrial city, all this represents a potential advantage, an opportunity in terms of environmental and social sustainability. To manage, with care and attention, the landscape - result of the relationship between man and nature (Florence Landscape Convention, 2000) - place of historical, social, urban and architectural values of territories and cities, morphology, infrastructures, building typologies, is a big chance. New opportunities for quality of life, territorial and urban resilience and sustainability come from green and water: huge, but also problematic, resources, taking into account current climate change too.

It is necessary to avoid the threat that all this is guided by economic powers and forces, indifferent both to the local context and to the wellbeing of the inhabitants, and to the increase of various types of risks. Examples will be highlighted showing how territorial and urban policies can produce different development scenarios using an integrated ecological approach. In this way it is possible to improve infrastructure security, the condition of existing material heritage and quality of life.

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#### **Location determinants of high-tech firms: an intra-urban approach**

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S18-S2 Entrepreneurship and local development: symbiosis and/or dissonance?

UdL\_Room 103, August 30, 2019, 9:00 AM - 10:30 AM

Full paper is available for discussant only.

#### **Rural Community Tourism and Sustainable Advantages in Nicaragua**

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The capacity of tourism to improve living conditions has attracted the interest of developing countries. Rural Community Tourism (RCT) represents an experience of community based tourism where local population retains control over the process, with benefits remaining within the community. The central role of the community confers a sustainable dimension to the process. In this context, the current investigation focuses on the study of successful RCT experiences in Nicaragua, proposing and testing a structural model that ensures the reproduction and extension of community life, limiting the undesired negative impacts of tourism, and providing a sustainable dimension in a wider sense.

### **Heterogeneity of digital transformation in French regions: a proposal of temporal and spatial typologies**

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G(01+02)-O2 Mobility and Digital Transformations  
IUT\_Room 408, August 29, 2019, 4:30 PM - 6:00 PM

The digital transformation represents a new stage of the profound economic and social reorganization engaged under the effect of Information and Communication Technologies (ICT). France is necessarily concerned by this "digital revolution" which, today, forces organizations and states to rethink their economic, social and societal models. Its territories have to face major organizational and social challenges, related to the intrusion of digital technology into society and into the life of companies. Indeed, the digitalization of a territory is strongly connected to its economic performances, its innovation dynamics and even its economic structure.

The aim of this research is to present a state of play of digital transformation in Metropolitan France over the period 2000-2014. Multidimensional data analysis methods are employed in order to develop temporal and spatial typologies of the digital transformation.

Our work is organized in three stages. First, we consider the dynamics of the digital transformation in Metropolitan France relying on several comparable variables across regions, namely: share of ICT employment in total employment, growth rate of ICT employment, share of business start-ups in ICT as percentage of total start-ups, share of business failures in ICT as percentage of total failures, share of value added in the ICT sector in total value added, growth rate of ICT value added. These variables represent components of the digital transformation. Preliminary results show evidence of a gradual transformation over three sub-periods: 2000-2002; 2003-2008; 2009-2014. Second, we establish a typology of the twenty-one former French regions with regard to the components of the digital transformation, focusing on the regions trajectories over the period 2000-2014. Thanks to this typology, several profiles of digital transformation are proposed. Third, the typology is enriched and consolidated thanks to a set of illustrative variables related to four main themes: economic performance, demography research and innovation, entrepreneurship, we use annual data extracted from INSEE and Eurostat databases.

This research enriches the current literature in regional science allowing to better describe and understand the mechanisms of the digital transformation. Besides, our results make it possible to compare the progress of digitalization across French regions and to explain regional differences. Finally, in light of these results, we are able to identify and analyze the inhibiting and catalyzing factors involved in the digital transformation.

### **Delineating and characterizing functional cross-border regions in Europe**

According to a recent European Commission communication (“Boosting growth and cohesion in EU border regions”, COM(2017) 534), border regions are places where the European integration processes should be felt most positively – studying, training, working, receiving medical care and doing business across borders are activities that should be possible regardless of the existence of administrative national borders. Border regions are currently defined by the NUTS3 regions that share (or are sufficiently close to) an international land border. However, NUTS3’s heterogeneous size and shape make comparisons across borders inconsistent, and may be detrimental to targeted and effective policy action and funding.

In this presentation, we propose a new delineation of cross-border areas in Europe based on a functional approach rather than a purely administrative one. The proposed ‘functional cross-border areas’ are based on driving time to land border crossings computed from a high-resolution pan-European road network. While the approach is flexible to consider different driving time thresholds, the current analysis applied 30 and 60 min drive-time thresholds to identify areas included in the functional border regions. In addition, we combined the resulting cross-border areas with detailed population data at municipality and grid levels to characterize them according to their demographic situation and trends since 1960.

The results obtained reveal that demographic growth in border areas is significantly lower than the EU average, suggesting lower overall attractiveness and economic performance. Notwithstanding, the results also show a huge diversity of accessibility and demographic trends across the EU border regions and between the two sides of each border. These findings highlight the need for renewed and more targeted policy action and investment in border areas. We argue that the proposed method to delineate and characterize cross-border regions is useful to support this endeavour.

### **Europe through the lens of the refined Degree of Urbanisation: First insights**

Dr. Jean-Philippe Aurambout<sup>1</sup>, Dr Andrius Kučas<sup>1</sup>, Dr Carlo Lavallo<sup>1</sup>

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S39-S1 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)

IUT\_Room 202, August 29, 2019, 4:30 PM - 6:00 PM

The degree of urbanization (DEGURBA) is a methodology proposed by the European Commission (adopted by Eurostat) which combines 1 km resolution grids of population and built-up to classify human settlements. A recently proposed refined methodology now combines several population and density thresholds to identify six classes of human settlements: Cities, Towns, Suburbs, Villages, Dispersed rural areas and Mostly uninhabited areas.

This paper describes the results of spatial analysis, conducted at the European Union (EU28) level, using the refined DEGURBA for a set of 11 territorial indicators computed by the LUISA Territorial Modelling Platform and the European Environmental Agency (EEA). These indicators took into consideration elements such as population, roads and accessibility, green infrastructure as well as landscape morphology. The analysis revealed that the refined DEGURBA provided, at country level, values significantly different for the majority of variables considered, confirming they indeed characterize different types of territorial developments. We then provided a detailed characterisation of European member states “through the lens” of the level 2 DEGURBA.

The refined DEGURBA indicates that 37% of the EU28 population lives in cities, 21% in Towns, 12% in Suburbs, 12% in Villages, 14% in Dispersed rural areas and 4% in Mostly uninhabited areas. Urban areas concentrate 72% of the population over only 3% of the EU territory but contain 17% of all roads (uniformly distributed between cities, Towns and Suburbs). In addition, the refined DEGURBA identified Slovakia and Slovenia as having the lowest proportion of population in cities (14%). Belgium presented the highest proportion of its population living in Suburbs (28%) while Slovenia had the highest proportion of population in Dispersed rural areas (33%) and Ireland had the highest proportion of population in Mostly uninhabited areas (19%). From this new classification we found that across Europe locations identified as Suburbs differed from Towns in that, they present lower population density, higher UGI per hectare (ha), lower percentage built-up areas, shorter distance to access sub-regional, regional but not to local services, more road and public transport stops per capita. Location classified as Villages differ from dispersed rural areas in that they presented a much higher density and percentage built-up area slightly better access to services, lower length of road per capita and more public transport stops per ha. These first insights indicate that the refined DEGURBA provides a valuable new lens through which we can better understand urbanity in Europe and globally.

### **Delineating a relevant geographical area to assess the economic impact of an event**

**Mr Emmanuel Auvray<sup>1</sup>**

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G10-O2 Methods in Regional Science or Urban Economics

MILC\_Room 309, August 30, 2019, 9:00 AM - 10:30 AM

Economic impact studies are one of the most common tools for assessing the economic outcomes of sporting or cultural events for the respective host and surrounding areas. An important challenge is to delimit the geographical area on which it would be relevant to measure the impact. While sometimes "common sense" can identify a relevant perimeter, this is not obvious in all situations. This article proposes a method to objectify the perimeter in question without restricting itself to the administrative boundaries of the host of the event. The 'economic impact' of a major event refers to the total amount of additional expenditure generated within a defined area, as a direct consequence of staging the event. For most events, spending by visitors in the local area is the biggest factor in generating economic impact (spending by locals should not be taken into account because they would have spent their money in the local economic basin in the absence of the event). Thus, it is necessary to identify what is referred to as "local economic basin". It is a geographical entity in which consumers live, work and consume daily. What interests us then is to identify the geographical limits that allows considering that the consumers-workers belong to the local economic basin.

We propose to rely on commuting. For a municipality hosting the sporting or cultural event, the local agents are those who reside and work in the municipality and those who work in the municipality without residing there (under certain conditions). We use professional mobility flows (commuting), from two algorithms that we develop for this work, to identify the "local economic basins", that is the relevant geographical perimeters on which it will be possible to conduct the impact studies.

### **Children's school travel and resilient transport in Cluj-Napoca, Romania**

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S40-S1 Regional Resilience: How can regions survive?

IUT\_Room 203, August 28, 2019, 11:00 AM - 1:00 PM

Over the past half-century, children mobility has changed from independently walking to being driven or accompanied by adults, a fact that turned cars into becoming one of the enemies of the child friendly city (CFC). Cluj-Napoca, the second largest city of Romania, is confronted with serious traffic problems, as the number of cars is 322 vehicles/1.000 citizens compared to 261 vehicles/1.000 citizens at national level, and only from 2008 to 2018, 5.601 roads accidents took place, causing 511 children pedestrian victims. Transport in cities has various pervasive effects (traffic congestion, air and sound pollution) which have been extensively studied. When examining traffic congestion, researchers usually attempt to focus on the negative effect of people commuting to work, but fail to consider/take into account the effect that parents taking their children to school has. So, the aim of this research is to identify which is the parents' perception about children's individual school travel.

### **Estimating the intra-urban wage premium**

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G05-O4 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 9:00 AM - 10:30 AM

We estimate the intra-urban wage premium and its attenuation with distance from a balanced panel of workers in the São Paulo Metropolitan Region in the period 2002–2014, dispersed in a fine grid of 1km x 1km cells. We do not determine exogenously central business centers (CBD) or sub-centers (SBD), but estimate the wage premium for each cell and for two layers of surrounding cells. Based on the wage premium estimated in these three layers, we were able to estimate the attenuation effect. This way of estimating the wage premium and its attenuation in space is novel to the literature. We estimate POLS and Fixed Effects specifications to illustrate how the sorting of workers and firms is powerful in biasing the estimated coefficients. Since sorting might be present even after the introduction of fixed effects of worker, firm, cell, sector-cell and matches firm-worker-cell, we run a 2SLS-IV model. We instrumentalize employment in the cells by the additional constructed area for business and housing purposes, lagged by 7 years. Even after controlling for those time-constant effects, our instrumental variable estimation provides evidence of an intra-urban wage premium and its non-isotropic agglomeration effects. The estimated premium is larger by multiples of the POLS or Fixed Effects estimations. The magnitude of the effects is economically relevant: the introduction of 100,000 additional workers in the inner cell produces a 1.78% increase in wages in that cell. The effects on the surrounding cells are negative and much larger than in other forms of estimation that do not correct for endogeneity. The heterogeneity analysis revealed that educated workers benefit the most from the increased interaction possibilities given by concentration and they are less affected when located in the surrounding cells.

### **Effects of sanitary and technical measures on Brazil's Bovine meat exports - A panel data gravity model**

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G23-O4 Rural Issues  
MILC\_Room 410, August 30, 2019, 2:00 PM - 4:00 PM

This paper aims to evaluate the impacts of both sanitary-phytosanitary (SPS) and technical (TBT) regulations on Brazil's beef exports. It seeks to identify whether these regulations show a protectionist or standardization effect on the foreign markets for bovine meat. A gravity model was run where Brazil's beef

exports are explained by variables measuring countries' GDP and livestock production, their distances and their SPS and TBT regulations. The first two explanatory variables are second nature and the third one is first nature variable according to the New Economic Geography and they played important role in explaining Brazil's meat exports. Also, the non-tariff measures have acted in a way to increase exports. Then, SPS and TBT regulations have not acted as barriers to exports, more than this, SPS and TBT regulations have helped to standardize Brazil's beef exports in a way that foreign market desire them.

## **Eurocepticism and EU Cohesion Policy: The Impact of Micro-Level Policy Effectiveness on Voting Behaviour**

Dr Julia Bachtrögler<sup>1</sup>, Prof Harald Oberhofer<sup>2</sup>

<sup>1</sup>*Austrian Institute of Economic Research (WIFO), Vienna, Austria*, <sup>2</sup>*Vienna University of Economics and Business, Vienna, Austria*

S43-S1 Geography of discontent: Explanations and policies  
IUT\_Room 205, August 30, 2019, 9:00 AM - 10:30 AM

This study investigates whether there is a link between the successful implementation of European cohesion policy and the voters' attitudes towards the EU. Using the French presidential elections in 2017 as a case study, we do not solely consider regional funds expenditures but also its induced effects in a region as further potential determinant of pro-European or eurosceptic voting behaviour. In order to measure the effectiveness of EU structural funds and Cohesion Fund assignment, firm-level employment effects in French NUTS-2 regions stemming from project allocation during the multi-financial framework 2007-2013 are estimated. The obtained average treatment effects are, in a next step, used together with other regional characteristics to capture the citizens' perceived exposure to the EU in an empirical voting model for the French presidential election in 2017. The estimation results reveal a significant negative relationship between the effectiveness of EU funds allocation and the vote share of the eurosceptic candidate Marine Le Pen.

## **Spatial aggregation methods : an interactive visualization tool to explain and explore**

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S29-S1 Mapping flows, movements and cities networks at a European level  
MILC\_Room 309, August 28, 2019, 4:30 PM - 6:00 PM

Choosing the appropriate scale of analysis is a well-known problem in regional studies. Changing the level of quantitative spatial studies is not trivial and can have many substantial effects on the indicators, their representation and their interpretation, especially if the original data is spatially diverse and at a fine granularity. One cannot regroup spatial data points automatically without consequences. As geographical datasets are becoming increasingly available, and with a finer resolution, we want to provide some pointers and use-cases scenarios from a geography standpoint, to present and analyse this issue. What definitions can be used to delineate the idea of a city, an urban area or an agglomeration? At what size, population density, volume of urban activity or surface are we observing a city? We consider this issue especially in a comparative purpose taking the example of analysing networks of European cities.

In this proposal, we provide a comparative analysis of spatial clustering methods or aggregation procedures with an interactive web-based application designed to explain and visualize their effects on different results: volume of urban activity (discrete values) and rankings, on the one hand, spatial configurations, sizes and relational flows (links) of the aggregated values, on the other hand. We will use the themes of demographics and the geography of scientific activity, at the city scale in their spatial and relational dimensions.

### **Alexandre Brongniart (1770-1847), geologist and science passer. Graphic exploration of the trajectory of a scientific life**

PhD Martine Mille<sup>2</sup>, Dr Françoise Bahoken<sup>1</sup>

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S17-S1 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 11:00 AM - 1:00 PM

We propose to study the case of a 19th century French mineralogist, Alexandre Brongniart (1770-1847), co-author with Georges Cuvier of the first stratified map of the Parisian basin in 1811. The description of the advances of this map is part of a process fueled by Brongniart's involvement in familial, professional and scientific networks in France and Europe. The result is a multitude of information (Mille, 2018) highlighting an eclecticism which overall coherence seems complex to reveal and to represent.

From writings from the private sphere - notes, travel diaries, correspondence - and scientific results, it is possible to accurately reconstruct the life of the scientist, in particular to represent it graphically in the form of one or more trajectories (biographical, scientific, technical, professional, social, etc.). To this end, we will mobilize a generalizable methodological corpus (Bahoken, 2016, 2019), allowing the graphic exploration of this life course, subject, however, to a reduction in information, made necessary by the formalization of events imposed by the approach.

This communication focuses on certain components of the scientist's life: his participation in the circulation of science, in a perspective of progress, public good and scientific contribution; his involvement at different levels, in various networks of sociability (academy, learned societies) and institutional frameworks (Corps and École des Mines, Faculty of Science and Museum); his research trips; his discoveries; his publications, as well as his courses and lessons.

The proposed (carto)graphical analysis presents an exploratory aim, inscribed as a *mise en abyme* by the graphy of the design of a map, a re-reading that follows a first geolocalization of events (Mille, Fernandez, 2019). It uses a longitudinal approach, in an interdisciplinary context (history of science and technology, geography and mapping). It brings a new perspective to the analysis of a scientific biography, a new perspective on the practice and formalization of science. The specific analysis of the temporal and spatial components of science sites reveals the coherence of Brongniart's career in the service of science, covering England (the controversy with Smith, a brilliant practitioner), Germany (the return to Werner, the father of geology) and France (Cuvier and Brongniart, the duo associated with the design of the map). It also suggests the existence of a strong relationship between field practice and the formalization of a mapping tool (the geological map).

### **Expanding the Content of Regional Science - Risks and Rewards, An Essay**

Prof. Antoine Bailly<sup>1</sup>, Prof. Lay Gibson

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S70-S1 Expanding the content of regional science, risks and rewards  
IUT\_Room Amphi 10, August 29, 2019, 9:00 AM - 10:30 AM



Regional Science has developed as a rigorous science with a strong foundation in economics and geography. There is no apparent reason for regional science to seek an entirely new orientation but there is an argument for it to expand its horizons and reach by exploring opportunities for incorporating other disciplines. The idea here is not to dramatically shift the focus of regional science but rather to encouraging the incorporation of new content and to expand the participant base by scientists and scholars who benefit from incorporating their fields with the approaches offered by regional science. The potential rewards are substantial but there are risks too. One obvious reward for disciplines and professional fields that elect to work within a regional science framework include viewing problems through a new lens. The risks might include the dilution of the distinctiveness of the regional science approach as it seems to try to be all things to all people. This paper explores potentials to expand the content of regional science without disturbing its established character. And it discusses the need to minimize risks to the content while gathering the benefits of expanding the discipline into new content areas.

### **The French experimentation with the framing of rents in tense urban contexts**

**Dr. Beatrice Balivet**<sup>1</sup>

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S26-S2 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 2:00 PM - 4:00 PM

Rents are in principle freely fixed in terms of housing leases. However, in order to improve access to housing and social mix in tense urban zones, the French legislator intervened, on the occasion of Law No. 2014-366 of 24 March 2014 on access to housing and renewed urban development, to regulate rents. In tense areas, the prefect sets each year, by decision, on the basis of the data provided by the local rent observatory, a reference rent, an increased reference rent and a reduced reference rent, expressed by a price per m<sup>2</sup>, per housing category and per geographical area. The measure was tested in Lille and Paris, but the prefectural decisions were contested and finally cancelled. The issue concerned the scope of the framework adopted by these decisions. The prefects had only retained certain sectors of the municipalities and not the municipalities as a whole, a distinction that was not considered in conformity with the 2014 Law by the administrative tribunals, and then by the courts of second instance in decisions from 2017. The French legislator then had to give its opinion on the subject again, in the recent law n° 2018-1021 of 23 November 2018 on the evolution of housing, development and digital technologies, known as the ELAN Law. Rent frameworks can now be applied to sectors within a tense territory to take into account the diverse reality of the territories. The short French experience already shows the need to have a correspondence between the perimeters of the framing, observation and approval of the local rental observatories. It also reflects a gap between the projected and actual results and the resulting need for a corrective and coercive framework to ensure the effectiveness of this system. See extended abstract online.

### **Exploiting Social Media Data to Estimate Monthly Fluctuations of Seasonal Population in Island Regions of Greece.**

**Dr. Pavlos Baltas**<sup>1</sup>, Dr Demetris Stathakis<sup>1</sup>, Mr Leonidas Liakos<sup>1</sup>

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G03-O1 Big Data and Regional Science  
IUT\_Room 408, August 29, 2019, 9:00 AM - 10:30 AM

Digital traces are all we leave while surfing on the internet, especially when we use social media. Every regional policy proposal and/or assessment relies on sound and timely data. Can we use these digital traces in order to produce reliable data series? Here we explore the use of Big Data for estimating seasonal population variations. Timely monthly population estimates are important in regional science, especially when we are studying phenomena such as tourism, where seasonality is a key aspect. The objective of this work is to produce timely and informative monthly estimates of seasonal population variations based on social media data. The proposed method is based in a new source, the Facebook's Advertising Platform, which is also open-domain. The method is applied in Greek Island regions. The majority of Greek islands have a tourism-dependent economy. Also, due to tourism, population size changes month by month and makes the selected regions the ideal laboratory to test the method. The results of the proposed method are compared with those obtained by conventional sources as arrivals by air and sea, night time satellite images. Monitoring and controlling seasonal population pressures in islands is a key factor due to limited environmental problems. For example, water use in regions that face water scarcity (like islands in Mediterranean) is increased due to seasonal variation of population's concentration in time and space. Population estimates by month can play an important role as a means of measuring pressure and identifying environmental limits (carrying capacity) of a region.

### **Creativity, Contestations and the Public Space in Kolkata: Evolution from Colonial to Post Colonial**

**Prof. Sumana Bandyopadhyay<sup>1</sup>, Mr Binay Pal<sup>2</sup>**

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G15-O3 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 29, 2019, 9:00 AM - 10:30 AM

Public Space has evolved as one of the elementary platforms where social interactions are played out. It determines the character of any location. The different dimensions of public space are the key to 'place-making' – more often than not, it is an annotation to the identity of a city. Public space evolves, transforms and changes its character, in keeping with the spirit of the city and the researcher can trace the transformation by relating its nature to the city's economy, social character, planning and governance. It is understood as it evolves, as a divergence of many factors. This paper makes an attempt to unravel the complex historical narratives over the production of public spaces in the city of Kolkata, a megacity that evolved through colonial history, struggle for independence, the naxal movement, a long history of Left rule and presently, a politically changed scenario – all this interspersed with the neo-liberal influences in planning. It is increasingly evident that public space that evolved in specific social exclusionary principles during the British rule, bore a distinctive character as identifiably different from those created by the local communities for their own use. Public spaces are also spaces of other kinds of contestations – users resolve, as also create conflicts, raise protests, address public issues etc. Users become agents associated with citizens rights, homelessness, provision of public utilities, public art, scope for a democratic rights. Delving into the colonial era is an essential precursor to understanding the evolution and transformatory character of Kolkata's public space in its present form. Content analysis of archival literature, planning and policy documents are used as the basis of enquiry, substantiated by perception studies across different sets of respondents selected from amongst elite and poor citizens, aged citizens of select neighbourhoods, planners from yester-years and present generations help identify the visions and imageries of the city and its role in place-making. It is concluded that there has been a gradual shift in perceptions from segregation and exclusion during colonial period towards creating more uniform and inclusive public spaces in postcolonial era on the one hand, and the superimposition of the vision of a global city aimed to be created in keeping with demands of global capital. This juxtaposition has created complexities of identity, conflicts

and confusions, often usurped politically, that have nuanced impacts upon the communities and their freedom to use space as if it were their own.

### **Resilience of smart specialization' key sectors in the peripheral areas. Case study: North East Region (Romania)**

**Dr. Alexandru Bănică<sup>1,2</sup>**, Prof. Gabriela-Carmen Pascariu<sup>1</sup>, Dr. Bogdan Ibănescu<sup>1</sup>, Dr. Mihail Eva<sup>1</sup>

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S40-S5 Regional Resilience: How can regions survive?

IUT\_Room 203, August 29, 2019, 2:00 PM - 4:00 PM

Smart specialization aims to ensure the implementation of a certain development path based on a limited number of domains in which there is a high potential of capitalizing exceptional features and assets of a region which might reinforce economic growth and build its competitive position on the global market. Several connections between smart specialization and regional resilience have been identified in the literature, such as the capacity to learn from past events and crisis and to innovate. The present study falls within the wider context of assessing the impact that current strategies can have on building regional resilience. Thus, the paper explores the role of the Smart Specialisation strategies, in the context of the new European Union cohesion policy, in inducing or opposing to economic resilience of the lagging EU's regions, considering the institutional determinants. The aim of the research is to evaluate whether the domains chosen for smart specialization of peripheral regions have also the potential to increase regional resilience and to enhance competitiveness, while reducing the gap to the more developed regions. First, the current approach makes a general assessment of peripheral regions in European Union by taking into account the resilience performance of these regions when confronting the economic crisis. Meanwhile, their proposals of vertical priorities of smart specialization were analysed. Second, the analysis was deepened in the case of the North East Region in Romania by using the time series analysis in order to discover how resilient were the four domains (agro-food, textiles and clothes, IT&C, and biotechnologies), identified as key sectors in the Regional Smart Specialization Strategy during the economic crisis (2008-2011) and how they bounced back after this perturbation. The results show that there is an obvious difference between the contribution of the four analysed domains to competitiveness at national and European level, but also a difference in their resilience inducing potential. Finally, the perception of different stakeholders (mainly those included in Smart Specialization Regional Consortium) was assessed by applying semi-structured interviews that aimed at highlighting the contribution of the four domains in enhancing and transforming regional economy. The present study tried and, to a certain extent, succeeded in exploring the resilience performance of vertical priorities of North East Region, during and after the recent economic crisis, in order to contribute to an assessment of their potential in overcoming shocks and sustaining long-term development.

### **Quality of Government and EU regions: an impact assessment using the RHOMOLO model**

**Dr. Javier Barbero<sup>1</sup>**, Dr. Martin A. Christensen<sup>1</sup>, Dr. Andrea Conte<sup>1</sup>, Dr. Patrizio Lecca<sup>1</sup>, Dr. Andrés Rodríguez-Pose<sup>2</sup>, Dr. Simone Salotti<sup>1</sup>

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G24-O4 Empirical Methods in Regional and Urban Analysis

MILC\_Room 308, August 29, 2019, 9:00 AM - 10:30 AM

The importance of institutional quality for economic growth and development is becoming more widely studied in the scholarly literature, using econometric analysis at both country and regional level. What is still missing is a comprehensive analysis of the role of institutional quality in a general equilibrium framework that captures all the transactions between different agents of an economy – households, firms, and the government – as well as the spatial interactions among regions. Neglecting the general equilibrium effects may result in an incomplete assessment of the role of institutional quality on the macroeconomic performance of the economy. In this paper we fill this gap in our knowledge by resorting to the RHOMOLO dynamic spatial general equilibrium model for the EU regions to assess the macroeconomic impact of regional variations in quality of government. The model allows capturing how macroeconomic variables – GDP, employment, trade, and consumer prices among others – respond to a hypothetical improvement in regional government quality. The results stress how the performance of different public policies across regions of Europe is heavily conditioned by variations in regional government quality, meaning that greater attention to the quality of local institutions is necessary when formulation and applying public policies.

### **The EU Regions Integration in Global Value Chains**

Dr. Javier Barbero<sup>1</sup>, Dr. Jorge Díaz-Lanchas<sup>1</sup>, Dr. Patrizio Lecca<sup>1</sup>, Dr. Giovanni Mandras<sup>1</sup>

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S34-S2 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

### **Startups in a peripheral region-An empirical analysis of startups in Israel**

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G07-O3 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

The natural tendency of startups is the concentration in main urban centers, while their share in peripheral regions is rather limited. The objective of this study is to identify factors that may explain this phenomenon, in order to contribute to the formulation of appropriate policies for the promotion of innovation in the periphery.

Our hypothesis is that startups that locate in the periphery have specific characteristics, and that their dependence on factors of the innovation ecosystem differs from that of startups in central regions.

We apply a questionnaire to 173 startups, 105 of them located in the metropolitan center of Tel-Aviv in Israel, and 54 located in peripheral regions. Data collected relates to the typology of the startups, including characteristics such as radical or incremental innovation, open or closed innovation, blue or red ocean type, etc.. In additional interviewees were asked to evaluate on a scale of 1 to 5 the importance of a list of factors of the ecosystem in relation to their startup.

A preliminary estimation using a logit regression indicates the types of start-ups are more likely to settle in the periphery. We further analyze the relative importance of various factors of the ecosystem for each type of startup, comparing between the periphery and the center. The results may provide effective information about appropriate policy measures for the attraction of selected types of startups to the periphery.

## **The gender patenting gap: a comparison between Brazil and Spain**

**Ms Lydia Bares Lopez**<sup>1</sup>, Ms Kelyane Silva<sup>2</sup>, Mr Danilo S. Carvalho<sup>3</sup>

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G07-O5 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

The number of patent applications has been in a worldwide trend of growth in the recent decades, in response to policies that encourage the diffusion and transfer of technology. Such trend is linked to patterns in industrial, scientific and educational investment, with varying participation of the different groups in a globalized society. While there is a widespread effort into evaluating and improving the participation of groups recognized as minorities within state-of-the-art activities, research about women participation in the innovation sector is currently limited.

This work presents a study on the female involvement in patent applications in Ibero-American countries, with special attention to Brazil and Spain, in order to measure gender inequalities in institutional collaborations and technological fields. Our findings indicate there is still a long way to overcome gender inequality in Science, Technology and Innovation activities, but slow progress is being made, especially in Brazil and Portugal.

## **Academic patenting and its consequences on scientific research. Some evidence for Spain.**

Dr Manuel Acosta Sero<sup>1</sup>, **Ms Lydia Bares Lopez**<sup>1</sup>, Dr Daniel Coronado Guerrero<sup>1</sup>, Dr Maria Dolores Leon Rodriguez<sup>1</sup>

<sup>1</sup>Universidad de Cádiz, Cadiz, Spain

G07-O6 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 2:00 PM - 4:00 PM

The main objective is to analyse the possible consequences of stimulating commercial exploitation of academic research, encouraged by recent policy initiatives and legislative changes, on the dissemination of scientific knowledge and the quality of research output in public research organisations in Andalusia (southern region of Spain). To achieve the main objective, we will need to identify two specific objectives. Firstly, to analyse the impact of patents over the number of scientific publications. To do this, we start from two effects: the crowding-out effect (substitution effect between patents and publications) and the complementarity effect (patents and publications are complementary). Secondly, to assess the impact of patents on the quality of scientific publications. The quality of scientific publications will be measured with the journal impact factor (JIF). Our panel dataset is 9,444 members of a research group in universities or in the Spanish National Research Council (CSIC), in different fields (agrifood; health science and technology; life sciences; physics, chemistry and mathematics; natural resources and environment; communication and information technologies; production technologies – we exclude social sciences and humanities-) published by the Regional Government of Andalusia in 2003. We construct the database of patents using the Spanish Patent and Trademark Office and our sample consists of 1,251 patents for the period 1998-2013 that have been applied by public research organisations in Andalusia. We find 682 scientists who applied for at least one patent in this period. For the construction of the database of publications we use the ISI Web of Knowledge database and we count a total of 105,589 publications, in which there are in the address at least one public research organisation from Andalusia. Furthermore, we have information about the individual characteristics of the scientists and about the institutions where they work. The econometric models indicate a beneficial effect of patenting on scientific productivity in terms of quantity and quality.

## **Methodology to measure the impact of freight transport in the urban logistics system Application of the Six Sigma method**

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S57-S1 Freight mobility and urban forms, IUT\_Room 108, August 30, 2019, 9:00 AM - 10:30 AM

Nowadays, the problems of freight transport pose logistical constraints to the urban system of the city. The purpose of this article is to better understand the interactions between local and interurban traffic, on the one hand, and between the location system and the transport system, on the other. Thus, in a simulation and analysis approach, we can not limit ourselves to the transport system alone.

The proposed approach is based on an assessment of the impact of freight transport, which is closely linked to the diagnostic method, based on two surveys carried out in the territory of the Sfax urban community. These surveys are based on two main components, the "settlement component" and the "component". The proposed model characterizes, evaluates and analyzes the impacts of freight transport on the performance of urban logistics systems. Our interest has been particularly focused on the multiple factor given the emergence of cognitive science in industrial circles.

In this sense, we have found that the Six Sigma method is well suited to our field. Indeed, this method aims to improve the satisfaction and profitability of processes. Our model follows the Six Sigma method to ensure the continuous improvement of the processes on which our urban logistics system is based. In this approach, we have introduced quantitative tools to analyze the impact of freight transport on the urban logistics system.

The results propose a reorganization of freight transport in the city of Sfax. Firstly, an orientation of the traffic of heavy goods vehicles towards the main axes of transport namely the bypass roads (ring road N ° 2, ring road N ° 4 and ring road N ° 11) and the penetrating news of the city. Then the implementation of a retail goods delivery policy and the strengthening of logistics in the city. The creation of a logistics zone on the ring road N ° 11 where different modes of transport of goods meet, in order to decongest the roads of big traffic, makes it possible to reduce the costs of transport and thus to improve the competitiveness of the regional economy.

## **Innovation, Influence, and a Deck of Cards: Exploring an innovation intermediary through Human-Centred Design**

**Mr John Barker**<sup>1</sup>, Professor Nick Clifton<sup>2</sup>, Professor Gareth Loudon<sup>3</sup>

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S14-S1 Collaboration-based innovation policies: theory, empirics and practitioner feedbacks  
UdL\_Room 106, August 30, 2019, 9:00 AM - 10:30 AM

The importance of organisations that broker innovation are gaining relevance as drivers of regional economies, as public sector funding for research and development reduces (Nilssen and Sia-Ljungström, 2013). Understanding the part that these 'innovation intermediaries' play in catalysing research and development activity in regional economies has huge potential value for policy and practice. The importance of understanding this relationship between innovation intermediaries and the wider economy is especially prevalent in regions that historically, and presently, are in a phase of low economic productivity such as Wales. This paper reports a case study of one such intermediary in South East Wales using an

ethnographic methodology and human-centred design method to explore the values, perspectives, and influence on the innovation process. In undertaking this observational process, the study uncovers new learning about this often-unseen agency in the context of the Welsh economy.

Results of the study highlighted the importance of human capital in the innovation process and the value of diversity within the actors/agency innovating, in this case, using online crowd-based mechanics.

The findings of the study contribute to the broadening field of knowledge around digital innovation intermediaries and enter the bounds of new knowledge through the exploration of the subject by ethnography and human-centred design.

See extended abstract online.

### **Impacts of automated transport on cities: how to discuss and study impact mechanisms**

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S66-S1 Assessing impacts of automated driving and automated mobility  
IUT\_Room 108, August 30, 2019, 11:00 AM - 1:00 PM

Large scale introduction of automated has the potential to transform the cities of the future. Next to increased safety, it could improve the transport network efficiency, reducing congestion, and in combination with electrification reduce air pollution. It could improve personal mobility, also of groups currently experiencing transport poverty. However, it may also have negative consequences such a reduction of active transport modes (walking and cycling) because of the improved access to motorised transport. Also public transport could be become under pressure, and even leading to more vehicles on the road. Different scenarios are possible, and proposed and studied in several European projects and roadmaps. Shared mobility is an important one that holds promises to (partly) solve the transport problems of our cities.

As the problems and solutions related to automated transport are complex, it is important to discuss and study the potential impacts at all levels in our society. In the proposed paper, we will discuss the work that is ongoing in the Trilateral (EU, Japan and US) Working Group on Automation in Road Transportation subgroup on socio-economic assessment, as well as in the European support actions CARTRE and ARCADE. The trilateral group has developed a framework for describing the impact areas, relating them to key performance indicators on a wide range of direct and indirect impacts such as for example safety, mobility, land use and public health. Impact mechanisms were identified, for example availability of automated vehicles may improve mobility and lead to more trips and more traffic. The high-level evaluation framework is used for assessing the impact of automation and to harmonise these evaluations on an international level. In the CARTRE project, the key performance indicators were used to gather expert opinions on the directions (positive or negative) developments could go in different future scenarios. Currently work is under way to make the complex impact paths more insightful and easier to work with, using graphical representations and system dynamics modelling techniques.

The paper will focus on three main topics: the impacts automated transport may have on cities in different scenarios, the impact mechanisms, and the methods to develop and discuss impact paths.

## **Connectivity and economic growth: A panel study for European regions**

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G07-O1 Innovation and Regional Development  
UdL\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

The aim of this paper is to study the way the local creative economy and the connected economy affect regional economic growth in Europe. The paper builds upon a specific literature on creative and connected economies and shows that in many regions they appear as the main engine of growth. Eurostat data from the period that goes from 2006 to 2013 is used to build a panel data econometric analysis in order to test the relation between creative economies and the growth of GDP per capita for the 226 European Regions at a NUTS 2 level. Tools of spatial econometrics allow us to correct the spatial autocorrelation biases. This work also delivers evidence that the regional disparities in the stock of the creative industries depend upon the position of each region in the European regional hierarchy.

## **Innovation and exports in developing countries; different markets, different outcomes**

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G08-O5 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 2:00 PM - 4:00 PM

The purpose of this study is to shed some light into the scarcely explored role of destination markets in the relationship between innovation and exports for developing economies. In this way we intend to contribute to the debate on a key issue for the design and implementation of innovation and internationalization policies in developing countries.

Innovation has turned into one of the most important features of the political agenda of both developed and developing economies. New products and new processes are the way firms access external markets and participate in global value chains. Developing economies have a more concentrated and less sophisticated structure of production and exports than developed countries. This lack of 'complexity' hampers their possibility of achieving sustainable high growth rates, unless they enter a path of diversification. This path of diversification of the productive and export structure requires innovation at the firm level. The key question is if innovation is necessary to be more efficient and, in this way, access export markets, or if it is the participation in export markets the way firms access to new knowledge that enable further innovation.

These two approaches, largely discussed in the literature and non-mutually exclusive, have been referred to as the self-selection hypothesis and the learning-by-exporting hypothesis, respectively. The former stresses that more productive firms are able to overcome sunk costs of entering and prevailing in international markets before starting the export activity. The latter suggests the idea of a learning process, originated in the experience of participating in international markets, that would impact on innovation and productivity growth at the firm level.

Some studies have shown mixed results, with the prevailing effect depending on the characteristics of the firm or finding a bidirectional relation and a certain level of endogeneity between these variables. For developing economies, findings are not yet conclusive and, particularly for Latin-America, there are few empirical studies.

Our main hypothesis is that, for developing countries, learning-by-exporting effects are present mainly when the destination market is a developed economy, but that innovation driven self-selection is dominant when the export destination market is a developing economy.



We apply a bivariate probit estimation, fitting a maximum likelihood two-equation probit model, to three waves of survey data (2007-2009, 2010-2012 and 2013-2015) for 1321 Uruguayan firms, from manufacturing and services sectors. The data source is the Innovation Annual Survey for Uruguay, from the Agencia Nacional de Investigación e Innovación (ANII).

### **Economic complexity and regional labor productivity distribution: evidence from Italy**

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G08-O2 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 2:00 PM - 4:00 PM

In this paper we analyze the role of economic complexity as a driver of regional labor productivity dynamics in Italy. Economic complexity is expressed in the composition of an economy's productive structure and reflects the emerging combination of the multiplicity of knowledge embedded in it. Measures of economic complexity (ECI) come from the structure of the network connecting economies to the products they export. We assess the impact of ECI on the distribution dynamics of labor productivity by combining growth regression analysis with conditional density estimates. Counterfactual analysis results suggest that ECI plays a key role in the observed tendency to polarization of regional labor productivity.

### **Investigating the effects of the actions planned by cities under the Covenant of Mayors initiative: an assessment at European level**

Ph.d Matteo Basso<sup>1</sup>, Prof Stefania Tonin<sup>1</sup>

<sup>1</sup>*Iuav University Of Venice, Venice, Italy*

G14-O2 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 2:00 PM - 4:00 PM

As an ambitious initiative launched in 2008, the Covenant of Mayors (CoM) aims at fostering – on a voluntary basis – the role of cities in implementing the 20-20-20 European climate-energy package. This political commitment becomes effective only after the formal elaboration and adoption, by city councils, of specific Sustainable Energy Action Plans (SEAPs) through which a set of priority measures and actions to reach the reduction target in CO<sub>2</sub> emissions (-20%) by 2020 is defined.

Activities of monitoring, reporting and evaluation are all given a central role in the overall SEAPs' planning process, particularly in the implementation phase. Indeed, cities are requested by the European Commission (EC) to regularly submit monitoring reports with the aim of evaluating the effectiveness of the planned actions, and predict corrective actions if necessary. Nevertheless, according to the ongoing scientific debates, the often incomplete monitoring reports elaborated by cities are unlikely to ensure an effective evaluation (both in itinere and ex post) of the investment costs, the achieved targets and, perhaps even more desirable, of the economic benefits associated to the implementation of the plans. Similarly, an appropriate reflection on the relationships between costs and benefits of the actions included in the SEAPs is only partially addressed by that part of the academic literature that, so far, has sought to analyse the state-of-the-art of the CoM initiative.

The aim of this contribution is twofold. Looking specifically at the actions planned and actually realized by European cities within their SEAPs, it seeks firstly to provide a picture of the state-of-the art of their implementation through official data provided by the EC's Joint Research Centre (the office which supports technically and scientifically the CoM's signatories, and eventually approves their plans). Secondly, drawing

on the framework of the «implementation research» and an extensive literature review, it aims at exploring the open challenges (financial, legislative, technical, governance, but also in terms of monitoring and evaluation) which need to be addressed to ensure their effective implementation, and to avoid the general risk that these plans remain mere tools of a «symbolic policy».

### **Acemoglu Meets Lucas: institutions, human capital and economic growth**

Prof. Suzana Quinet Bastos<sup>1</sup>, Master Fabio Gama<sup>1</sup>, Student Tiana Assis<sup>1</sup>

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G22-O2 Institutions

IUT\_Room 303, August 29, 2019, 4:30 PM - 6:00 PM

In the present study, we ventured to investigate the role political and economic institutions have in promoting the human capital factor in the Lucas model (1988). The discussion proposed by Acemoglu et al (2014) and Acemoglu et al (2012) on institutional quality as responsible for the variations in the levels of human capital presented by the countries, elucidates how the incentives and safeguards promoted by political and economic institutions foster the growth process via human capital.

The results of estimations via pooled ordinary least squares estimation (POLS) and instrumental variables (IV) compare the variables that compose the Lucas growth model (1) to the same model of Lucas in an extended form (2), obtained by the insertion of institutions as boosters for the human capital stock. As predicted by the authors, the level of a country's political and economic institutions plays a significant role in economic growth via human capital, and it can be seen that the original Lucas model overestimates the contribution of human capital to growth, since it does not model institutions as one of its determinants. Hence, as predicted by Acemoglu et al (2014), one can understand physical capital and human capital as proximate causes of economic growth. The comparative analysis between the Lucas model (1988) and the extended model proposed in the present study aims to indicate the overestimation in the effect of human capital on the output produced by the first one, since it does not consider institutions and human capital as correlated factors, notwithstanding, as discussed in Acemoglu et al. (2014), the human capital factor is determined institutionally and serves as an influence channel on institutions.

As presented in our study, the discussion concerning the impact of institutional composition on the level of economic prosperity continues to be reinforced through the empirical findings. Relying on the analysis of Acemoglu et al (2012), we can point a robust and independent judiciary power as a central effort in order to assure institutions to be channels operating under what the de jure power states, self-oriented for general benefit - and not under the influence of individuals or small groups. The relation between institutions and resources distribution in society, therefore, reinforces the constant need for policing our institutions and also suggests a better level of income distribution as an important mechanism for promoting more inclusive institutions in countries.

### **Using Local Public Goods to Attract and Retain the Creative Class: A Tale of Two Cities**

Dr. Amit Batabyal<sup>1</sup>, Dr. Karima Kourtit, Dr. Peter Nijkamp

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G04-O3 Regional and Urban Development

IUT\_Room 207, August 28, 2019, 2:00 PM - 4:00 PM

We study the impact that the provision of a local public good (LPG) by two cities has on their ability to attract and retain members of the creative class. This creative class consists of two types of members known as engineers and artists. Engineers are wealthier than artists and they also value the LPG more. We

first focus on each city in isolation. We compute the marginal value and the marginal cost of the LPG and then determine the provision of this LPG when the provision is determined by uniform contributions and majority voting. Next, we allow the creative class members to migrate between the two cities and analyze whether engineers or artists migrate, the equilibrium distribution of the creative class, and the efficiency of the LPG provision. Finally, we consider the situation in each city just before migration and study how much of the LPG is provided when proportional contributions and majority voting determine this provision. A related question we address is whether engineers or artists now have an incentive to migrate and, if yes, we identify who would like to migrate and to which city.

### **Using Utilitarian and Rawlsian Policies to Attract the Creative Class: A Tale of Two Cities**

Dr. Amit Batabyal<sup>1</sup>, Dr. Seung Yoo

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G15-R1 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 11:00 AM - 1:00 PM

Consider an aggregate economy of two cities. We study the impact that the use of utilitarian and Rawlsian policies by these two cities has on their ability to attract members of the the creative class. We first focus on the case in which both cities adopt utilitarian policies. Second, we analyze the case where both cities implement Rawlsian policies. Third, we study the case where one city uses a Rawlsian policy but the other city pursues a utilitarian policy. Fourth, we compare the policy outcomes in the first and the third cases above and show that if one city switches to a Rawlsian or more egalitarian objective when the other city remains utilitarian, the aggregate economy becomes less egalitarian. Finally, we compare the second and the third cases above and demonstrate that if one city switches to a Rawlsian or more egalitarian objective when the other city remains Rawlsian, the aggregate economy becomes more egalitarian.

### **Walter Isard, regional science and spatial planning**

Prof. Peter Batey<sup>1</sup>

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S01-S1 Regional Science Footprints of Walter Isard  
IUT\_Room Amphi 10, August 29, 2019, 2:00 PM - 4:00 PM

In the late 1940s, Walter Isard began to generate interest in an inter-disciplinary field centred on the analytical understanding of regions. He became a tireless advocate for 'regional science' and in 1954 founded the Regional Science Association. From the outset, city planners played a full part in the Association, reflecting a burgeoning interest in metropolitan regions and transportation planning.

Isard pitched the first regional science conferences at a highly technical level but quickly realized that city planners were not trained to think of regions in an abstract way and generally had little grounding in mathematics needed to understand and apply the new techniques. He therefore took steps to 'bring planners on board', organizing joint meetings of the American Institute of Planners and the RSA. The initiative was a limited success. The first regional science textbook, *Methods of Regional Analysis*, published in 1960 by Isard and colleagues, had a much greater impact, offering planners a range of analytical techniques, many of which could be applied quite readily.

The paper describes how the University of Pennsylvania served as a test-bed for many of the new analytical methods being developed at the time, focusing on the head of the planning school, Robert Mitchell whose contribution was crucial. A keen analyst of urban structure and change but also a respected leader of public thought and action, Mitchell was well-placed to succeed Isard as President of the RSA in

1959. He showed how regional science could support city planning and outlined new thinking about the plan-making process.

British experience regarding regional science and planning is examined. Here the planning profession was slower to recognize the contribution social science could make to plan-making. In the late 1960s, things began to change. Planners in local authorities had begun work on a new type of strategic land-use plan. Brian McLoughlin published a textbook on what he termed a Systems Approach, heavily based on American thinking and that of Mitchell in particular. Not a highly technical exposition, the book nevertheless did enough to suggest how regional science might help. It had a big influence on practice throughout the 1970s.

The paper reviews the lead up to the present situation, and shows that nowadays that planning methods are alive and well, but not in regional science meetings. It ends by posing the question “spatial planning was once an important part of the regional science community, can it be so again?”

### **Aircraft noise exposure and saliva cortisol in a pooled-analysis from seven European countries**

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G19-O3 Health and Environmental Issues  
MILC\_Room 409, August 30, 2019, 11:00 AM - 1:00 PM

#### **Introduction**

HYENA (Hypertension and Exposure to Noise near Airports), a well-known study on the health effects of aircraft noise, involved 4,861 participants from six European countries (except France). DEBATS (Discussion on the health effects of aircraft noise), a study with a similar protocol, included 1,244 participants from France.

Saliva samples were obtained for 439 and 954 participants in HYENA and DEBATS respectively, to determine cortisol concentration as a possible marker of noise-induced stress. Associations were found between aircraft noise and cortisol levels in each study separately, but they were not consistent between the two studies. The objective of the present study was to combine datasets to improve statistical power.

#### **Methods**

We investigated the associations between aircraft noise levels and, the log-cortisol levels in the morning and in the evening, and the log-relative variation per hour, adjusted for relevant confounders.

#### **Results**

We found evidence in women for an increase in the log-evening cortisol level  $\beta=0.09$  (95%CI 0.01;0.17), and for flattening of the log-relative variation per hour  $\beta=-0.09$  (95%CI -0.16;-0.02), with a LDEN 10-dB(A) increase, but no significant effects were found in men.

#### **Conclusions**

These findings provide some support for psychological stress induced by aircraft noise exposure, resulting in disruption of hormonal rhythms.

## **The impact of urban form on residential energy consumption: the case of the Urban Area of Paris (France)**

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G14-O1 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 11:00 AM - 1:00 PM

In 1989, Newman and Kenworthy established a negative relationship between energy consumption and urban density at the city level. Our paper focuses on this relationship in two ways. First, we analyse it inside the city at the neighbourhood level: our case study is a sample 3782 neighborhoods covering the metropolitan area of Paris (France). Second, our study aims at identify the mechanisms by which urban spatial patterns influence energy consumption in the residential sector: we combine urban form characteristics with microeconomic determinants of residential location choice. More precisely, urban patterns result from households' location choices which depend on three sets of explanatory factors: the characteristics of the households, the characteristics of the housing and the transportation costs. At the equilibrium, urban densities decrease from the urban center to the peripheral places. In such a context, the empirical strategy has to take into account two special features. The spatial organization of housing and households is not random then the population density is not random too. Moreover, residential densities and energy consumptions both depend on the type of housing (houses or apartments), the size of housing and the age of housing. Then our empirical methodology requires to take spatial dependence into account and to control for housing type effect, housing size effect and housing age. Doing so, we extend the work of Lampin (2013) to control for the energy saving rules. We estimate a spatial error model to assess the impact of population density on residential energy consumption per capita. Our results show a significant and negative effect of the population density on the residential energy consumption once spatial dependence and endogeneity have been controlled for. Our results also show that the impact of density on residential consumption is more driven by the housing type effect (single family house vs apartment) than by the housing size effect, while housing age effect is mixed. Compact cities with more small apartments, old or recently built, are then more energetically efficient than compact cities with larger, middle age apartments.

## **Housing and location choice among Palestinian citizens in Israel: preferences versus constraints**

**Ms Hiba Bawardi<sup>1</sup>**

<sup>1</sup>*The Hebrew University Of Jerusalem, Jerusalem , Israel*

G17-O1 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 2:00 PM - 4:00 PM

Housing and location choice among Palestinian citizens in Israel: preferences versus constraints  
Hiba Bawardi, Eran Feitelson, Sigal Kaplan

The Arab Palestinian citizens of Israel suffer from a housing shortage due to the land issues and the lack of valid and suitable planning in their villages. The solutions provided to the Arab population within Arab villages and towns are limited. In recent years we are witnessing a beginning of inter-regional migration of young educated Palestinian individuals and/or families to the mixed Arab-Jewish cities or to the big metropolitan largely-Jewish cities which are characterized by modernistic housing solutions, wider job opportunities and better urban services. The urban lifestyles in the cities differ in their residential patterns from the rural Palestinian villages and cities, which are characterized by detached, shared family dwelling mostly built on the family's privet lands. This raises the question regarding the Palestinian youth's decision

of relocating, whether it is by choice (preferences) or due to limitations related to resources, land tenure, discrimination, or the structure of the housing market.

This study aims to better understand the housing barriers and decision motivators that affect the Palestinian population within Israel by examining the housing preferences and choice of young educated Palestinians. We try to understand the household's preferences regarding the house they would like to live in comparison to the house they attain by examining both of their housing preferences and choices. We investigate the housing preferences of 350 academic and graduate Palestinian Israelis and the logic underlying their actual choices of residential location in order to examine whether we are indeed witnessing a transition from a traditional residential style toward a different type of housing - urban, multi-story, apartment buildings. The methodology will contain 2-3 focus groups through them we'll hear about the participants preferences and opinions regarding their housing and location choices. conclusions from the focus groups will be used to prepare a questioner that will be used as a tool for conducting a survey. The survey data will serve for discrete choice model estimation that will allow understanding the housing preferences and choice of Palestinian youth and their motivators toward it.

This study will contribute to decision-making regarding the housing needs and supply for the Palestinian citizens of Israel by widening the types of residential option available to them.

### **The structure of creative hubs: Typology of co-working spaces in Istanbul**

**Prof. Tuzin Baycan<sup>1</sup>**, Meltem Parlak<sup>1</sup>

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S08-S1 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 11:00 PM - 1:00 PM

Firms and individuals in creative industries increasingly choose co-working spaces as their workspace. The number of those new type of workplaces increase in Istanbul as it also increases globally. Istanbul as the most populated city in the country hosts the biggest part of the creative workforce and its infrastructure in the country. As expected, the city hosts the largest number of co-working spaces as well. This paper focuses on the structure of co-working spaces in Istanbul and aims to describe the main characteristic of co-working spaces in order to reveal the typologies of them. In this context, this paper addresses the following research questions (1) What is the physical structure of creative hubs in Istanbul? (2) What is the financial structure of creative hubs in Istanbul? (3) What is the community structure of creative hubs in Istanbul? (4) What is the organization and management structure of creative hubs in Istanbul? (5) What is the decision-making structure of creative hubs in Istanbul? (6) What is the partnership structure of creative hubs in Istanbul? (7) What is the communication structure of creative hubs in Istanbul? Thus, 16 co-working spaces in Istanbul have been empirically investigated through face-to-face interviews, observations, web sites and advertisements. The results of the study reveal that co-working spaces have different characteristics and cannot put into one typology. Within this context, four different co-working typologies has been identified in Istanbul. Those typologies are 'chain co-working spaces', 'lifestyle co-working spaces', 'community oriented co-working spaces' and 'service oriented co-working spaces'. The results of the paper make a contribution to the literature to better understand co-working spaces in urban context as well as the changing working environment of the city in the creative economy era.

### **Modeling the impacts of climate change on tourism in Turkey**

Prof. Tuzin Baycan<sup>1</sup>, **Res.Assist. Aysun Aygun<sup>1</sup>**

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Tourism is one of the sectors difficult to assess the impacts of climate change due to uncertainty and complexity of expected tourism demand reactions. Tourism sector is likely to be strongly affected by climate change due to the dependency of tourist activities on weather conditions as well as tourist perceptions and reactions to the impacts of climate change. Direct or indirect impacts of climate change such as increasing temperatures, rising sea levels, decreasing snow cover are likely to lead a shift in tourism demand and in today's popular tourism destinations. This paper aims at modeling the impacts of climate change on the tourism sector and presents a case study focusing on the impacts of climate change on tourism in Turkey, where the tourism sector is particularly vulnerable to climate change. Being located in the Mediterranean Basin, Turkey is one of the most vulnerable countries to the climate change while tourism is the rising economic sector in the meantime for the country in terms of both winter and summer tourism activities. In order to assess the impacts of climate change on tourism sector, this paper focuses on spatial variations in climate change, linking physical and economic impacts, and modeling societal responses to climate change. The impacts are analyzed by modeling the relationship between climatic conditions and tourism demand and estimating the future demand by considering climate scenarios. Tourism Climate Index (TCI) is used to assess the impacts of future weather conditions on tourism demand. By applying a range of climate scenario data to the empirically estimated relationship between weather/climate conditions and tourism demand, the paper highlights the decline or increase of specific tourism markets and seasonal shifts in tourism demand and the potential direct and indirect impacts of the climate change on the regions' tourism industries.

### **Beyond GDP: an analysis of the socio-economic diversity of European region**

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G15-R1 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 11:00 AM - 1:00 PM

This paper aims to analyze the socioeconomic diversity of European Union (EU-28) regions from a dynamic perspective. For that purpose, we combine a series of exploratory space-time analysis approaches to multiple Factor Analysis (MFA) applied to a large range of indicators collected at the NUTS-2 level for the period 2000-2015 for the EU-28. First, we find that the first factor of MFA, interpreted as economic development (ECO-DEV), is spatially clustered and that a moderate convergence process is at work in European space from 2000 to 2015. Second, when comparing these results with those obtained for GDP per capita, we show that the convergence pattern detected with GDP is more pronounced: ECO-DEV adjusts slower over time compared to GDP per capita. Third, pictures provided by the remaining interesting factors, i.e. factors 2 to 4 are very different.

### **Growth of Digital Services and Economic Performance of Turkish Regions**

Dr. Mete Basar Baypinar<sup>1</sup>

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G(01+02)-O1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 4:30 PM - 6:00 PM

The impacts of digital services since some time attract the attention of policymakers and executors. The Economic and Social Impact of Software and Services on Competitiveness and Innovation Report of the EU Commission by 2017 show that several technological trends associated to digital services will radically change the way these services are produced and used and almost any industry sector will be influenced by this shift. Digital services enable both smaller enterprises and larger ones to outsource some of the services otherwise had to be produced internally and thus may be assumed to create centrifugal forces from high-density metropolitan areas to low-cost peripheral areas where lack of specialized human resources would not matter as much.

Nevertheless, the cluster literature suggests that companies may have different priorities in spatial and organizational configurations which may as well lead to geographical concentration of activities to enhance control or support specialization or diversification strategies in the value chain and thus enhance their economic performance. While digital services enable stronger control by lower costs and hence allow dispersion of activities to lower cost regions, they also enable companies to instead focus on the production of more knowledge-intensive products and services whose actual markets are large city-regions.

As an emerging economy, Turkey has been progressively improving its national innovation system since 1980s. During the course, knowledge-intensive services concentrated mostly in three core regions, Istanbul, Ankara, and Izmir, which are also centers for digital services.

This paper aims to evaluate the impact of the growth of digital services on the economic performance of Turkish regions by taking into account of agglomeration dynamics of digital services and local knowledge assets with an empirical panel data model based on diversified knowledge production processes.

Hypothetically, in large city-regions, companies are likely to focus on new potentials that arise by the presence of high-quality digital services. It is likely that they expand their activities in the value chain as such services enable integration in the value chain, provide more complex products and services and allow co-operation with a large variety of producers. Still, this enhances co-location and agglomeration processes in smaller geographies as control becomes more difficult despite these digital services. The paper employs conceptual frameworks from the New Growth Theory and Cluster Theory, from the perspective of adaptive resilience mechanisms to address these challenges.

### **The Case of Smart City Istanbul : How to evaluate the city-region and its benchmarks with participatory and negotiation processes?**

Assist.Prof. Dr. Mete Basar Baypinar<sup>1</sup>, Prof.Dr. Murat SEKER<sup>2</sup>, Assist.Prof.Dr. Hakan BEKTAS<sup>2</sup>, Assist.Prof.Dr. Arif SALDANLI<sup>2</sup>

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S02-S1 Digital and spatial transformation: structures and relations in the knowledge economy  
IUT\_Room 402, August 28, 2019, 4:30 PM - 6:00 PM

Since 1990s Greater Municipality of Istanbul has been investing in intelligent, digital services and supporting infrastructures. These efforts are strongly up-scaled recently as the city becomes an important international hub. One of the most recent efforts to tackle with the city's management challenges is the Smart City Istanbul Program which covers a range of activities from developing a Smart City benchmark model to the assessment of the metropolitan city with Maturity Models.

The Greater Municipality has also developed an assessment and monitoring model for Istanbul's development as an international financial sector recently. Development of other models focusing on particular issues is as well on the agenda. In a way, Istanbul is trying to increase its intelligence level by targeting strategic priority areas which will support practitioners to enhance their knowledge skills and enable policymakers to develop further intelligence.

Development of city-region intelligence poses significant challenges. Meticulous encouragement of participatory processes by the Greater Municipality of Istanbul itself within each work enables diffusion of



the emerging knowledge assets to other stakeholders, creating a dynamic and complex environment of urban intelligence building. Enhancing the quality of participatory processes thus are very important. The paper provides information on the participatory methodological approach used in the establishment of the Smart City Assessment and Monitoring Model developed by the authors in collaboration with the Greater Municipality of Istanbul and its affiliate ISBAK and discusses benefits and challenges associated with Smart City Assessment Models. The approach employed particularly aimed at avoiding empty signifier problems, feeding participatory processes with rich information an establishing trust, avoiding fuzziness and indecisiveness, and enable production of a small set of mutually agreed and selected benchmark indicators which later can inform maturity models well enough. Lessons learned: Involvement of Smart City domain specialized practitioners allow local information to diffuse into the process, use of a layered participatory process allows evaluation and agreement on a large set of indicators in a relatively short time, and co-presence of these two processes help in avoiding empty signifier problems. The paper suggests that it is possible to tackle with the unique challenges associated with Smart City development works: by repetitive processes it is possible to challenge rapid technological change and convergence, layered participatory processes work better when practitioner teams also see potentials in collaboration, and third, feedback mechanisms should be provided at different layers of participatory processes as they enhance decision making processes.

### **Coworking spaces within the creative economy: making resilient communities through knowledge sharing and collective learning**

Dr. Pavel Bednar, [Dr. Lukas Danko](#)<sup>1</sup>, Dr. Lenka Smekalova

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S08-S2 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 2:00 PM - 4:00 PM

Sharing economy is evident among cultural and creative industries (CCI), which are becoming more prevalent for economic and social development of deprived areas and its' communities. Sharing spaces leads to networking and cooperation of the CCI on both formal and informal levels. Coworking spaces (CWS) denote the idea of developing resilient communities through sharing and living with effect on social and economic activities of creative class that often spread to local or even regional areas. However, there is a lack of awareness regarding the CWS and economic viability, liveability and competitiveness. Thus, this paper explores the features of the CCI in CWS in order to gain insight into community–organization–space nexus, along with knowledge interactions and creativity in communities. In-depth interviews with 34 respondents including founders/managers and entrepreneurs were carried out, recorded, transcribed and coded. The Grounded theory was selected in order to present new understandings of the research gap. Results suggest that CWS represent favourable environment to stimulate knowledge sharing and creation through mutual projects, organized by creatives and experienced management. Furthermore, they have ability to retain creative class with opportunities to attract additional creative class and tourism due to frequent cultural and creative events. At least but not last, CWS could be also seen as an effective tool to maintain dialogue and links between the CCI and public authorities with the purpose of smart urban planning. Please see the extended abstract for more detailed information.

### **Intersectionality of spatial exclusion and mobilities**

[Dr. Zofia Bednarowska-Michael](#)<sup>1</sup>

<sup>1</sup>*Independent Early Career Researcher, London, United Kingdom*

Mobilities is one of the social reasons for spatial inequalities and spatial segregation. It is generally recognized in regional research. Economic or urban studies conceptualize the mobilities similarly to this paradigm but do not recognize the full complexity of mobilities. In the new mobilities paradigm (Sheller and Urry 2006) understanding mobilities are more than just a transportation, commuting infrastructure, but also looking from perspective of people's uneven mobilities potential – motility. Motility is the ability to be mobile in social and geographical understanding of movement, and the notion links spatial and social mobility (Kaufmann, Joye, and Bergman 2004:750).

Transportation mode is related to class and race but also motility is greatly affected by race and class. People of color and immigrants cycle less (Manville, Taylor, and Blumenberg 2018:26; Transport for London 2011).

Spatial racism in mobilities is researched here using a spatial model of London as a case study, as the previous model proved mobilities to contribute to regional development (Bednarowska, 2018). The main method is spatial econometrics with the Durbin component (Elhorst 2010; LeSage and Pace 2009). This way I aim to recognize intersectionality of mobilities injustice and spatial discrimination.

### **Sharing economy: Assessing the relationship between Airbnb, the professional accommodation industry and the activation of new tourist flows**

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S05-S1 Sharing economy and accommodation industry in urban and non urban environment  
IUT\_Room 402, August 28, 2019, 11:00 AM - 1:00 PM

The aim of this paper is to assess the relationship between sharing-economy touristic accommodations and those professionally managed (typically hotels) in terms of direct/indirect competition. Moreover, the analysis of turnover associated with different kinds of structures bookable on Airbnb drive to the assessment of the proportion of “core sharing” in Airbnb business and to an esteem of new touristic flows activated by the sharing portal. The analysis has been carried out for Bologna metropolitan area in Italy. The analysis shows that only 20% of the turnover recorded by Airbnb in Bologna metro area can be associated to a “pure” sharing economy, meanwhile the remaining 80% has various levels of professional management that in many cases undermine the peer-to-peer nature of the relationship established between the parties involved, typical of sharing economy. Of this 80% of turnover, while 44% is associated with structures that can be considered in direct competition with hotels, 36% is made by touristic structures that, to a various degrees, play indirect competition with hotels, thus activating new touristic flows to Bologna metro area.

The paper also tried to illustrate the different consequences of the spread of tourist sharing in the urban and extra-urban frames, highlighting the risk of displacement of habitual dwellers from touristic parts of towns and the permanent destination of the latter to the service of mass-over-tourism with obvious angry reactions.

Net of this, the phenomenon of sharing-economy in tourism has a remarkable scope that has only begun to show its potential and its effects on the world of tourism. It is reasonable to expect that there will be no trend reversals in the foreseeable future, that is, the sharing economy - in tourism as in other sectors - has come to stay and must, therefore, be managed.

A unique solution to avoid distortions has not yet been found but this is not a good reason not to insist. Radical technological innovations that take the form of radical economic and social innovations require

adequate measures to protect them from the externalities they produce, even to the detriment of themselves.

It is not easy. It is necessary.

### **Analysis of Competition Level on Regional Markets of Financial Services**

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G09-O1 Regional Finance, Fiscal Issues, Investment or Capital Markets

IUT\_Room 304, August 28, 2019, 11:00 AM - 1:00 PM

A modern Russian financial market is characterized by some features that reflect general trends on financial markets. On the Russian financial market some new types of traditional financial intermediaries and innovative fintech companies have appeared; banks put into practice new digital technologies and started working in new types of business; Bank of Russia as a super-regulator follows a policy of strong regulation. All these factors influence level of competition on the financial markets.

Historically, on the Russian financial markets banking sector plays a key role providing access to many types of the financial instruments for the customers, but the situation has been changing. Nowadays different financial intermediaries are active on the financial service markets such as ones of payment, investment, and loan services. Moreover, the Russian Federation regions have their peculiarities because of their economic specialization, opportunities of economic development, and the central bank's regulation policy. As a rule, competition on a regional financial market is less tough than in general.

The subject of the investigation is the financial market of Novosibirsk region, Siberia, the Russian Federation. Statistical sources are official government databases and Bank of Russia statistics.

The goal of our investigation is analysis of level of competition on key segments of the regional financial market. To get this goal we have worked out the following problems: 1) singled out the most developed segments of financial markets according to the financial services for the region; 2) determined structure of financial intermediaries in the region; 3) found out and made a case for using some indices to assess a competition level; 4) made comparative analysis of the competition levels for the different financial market segments for the last five years, and analysis of the factors influenced them.

We conclude that by now the type of competition on the key segments of the regional financial market is monopolistic competition; and the banking sector dominates.

### **Firm Productivity and Innovation: From a Micro to a Macro Entrepreneurship Ecosystems**

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<sup>1</sup>*University of Reading, , United Kingdom*, <sup>2</sup>*Indiana University, , United States*

S69-S2 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)

IUT\_Room 101, August 28, 2019, 2:00 PM - 4:00 PM

This study demonstrates the importance and limits to external knowledge collaboration for innovation across regional, macro and global entrepreneurship ecosystems and for the most innovative UK firms with different levels of productivity. This issue has traditionally presented a challenge for the regional studies on innovation, entrepreneurship and open innovation in terms of both identifying the phenomenon and in measuring it. We develop a structural model that estimates the innovation production function with knowledge inputs and outputs combining both firm characteristics and contextual influences (knowledge spillovers, knowledge collaboration). Our sample includes 29,805 observations and 17,859 firms mainly

from the UK Innovation survey and Business registry. We demonstrate that knowledge spillovers as well as knowledge collaboration may bestow a significant advantage for innovation, but there are diminishing returns to collaboration related to firm's productivity and the entrepreneurship ecosystem where a partner is located. Least productive firms are more likely to exploit regional entrepreneurial ecosystems collaborations, while most productive firms go global. Our findings call for further research on innovation and revision of national and regional innovation policies.

### **Place leadership in emerging product-service systems: A conceptual frame**

Prof Marco Bellandi<sup>1</sup>, Dr. Erica Santini<sup>2</sup>

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S10-S1 Territorial Servitization  
IUT\_Room 402, August 28, 2019, 2:00 PM - 4:00 PM

Manufacturing systems are entering trajectories of territorial servitization and rerouting towards product-service systems. A strong cooperation between traditional manufacturers and service providers may indeed open to renewed models of value creation and redistribution. However, in these systems, the traditional key actors are in some cases replaced by new economic actors, and related conflicts arise. Furthermore, the dis-alignment of interests between manufacturing and service firms increases the risks of high transaction costs. Therefore, an appropriate strategic leadership would play an important role and open to territorial servitization trajectories. This paper aims at assessing how different types of place leadership could help but also hinder an effective rerouting. An open place leadership would support strong territorial servitization opportunities and coordinated solutions among conflictual views and interests. If instead place leadership is weak or based on a closed club of private interests, weak or unstable trajectories amid lock-ins and impending decline become more probable.

### **Linking applicants in regional innovation programs: consultant networks, project proposals and cluster effects.**

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G06-O2 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 4:30 PM - 6:00 PM

Fostering innovation is increasingly the key element in long-term European and Spanish development policy strategies. However, innovation remains often elusive. The large variety of policy schemes and their often mixed success is putting finding more efficient innovation policies centre stage (Conte al., 2009). In this context, who is targeted by innovation policies and the extent to which such policies improve the innovation prospects of the recipients is crucial, but has, so far, attracted limited interest (Busom et al. 2017). Previous research has mainly focused on the characteristics of recipients, while overlooking factors related to how a firm's subsidy history and trajectory affects the probability of support being awarded (Aschhoff 2010; Busom et al. 2017 are notable exceptions). Moreover, the importance of the formation of networks for innovation has also been neglected. Whether firms attracting innovation support become embedded in local – mostly through clusters – or external networks is, nevertheless, regarded as an important factor for the success of innovation policies (Broekel et al. 2015; Feldman & Kelley 2006 are exceptions). This paper uses a dataset including 17866 observation relating to two different innovation support programs implemented by the Valencian Institute of Competitiveness – Instituto Valenciano de la

Competitividad (IVACE) – during the period 2004-2012 in order to assess (1) who were the recipients of innovation subsidies and (2) whether receiving support increased the likelihood of becoming embedded in a network and of achieving innovation later on.

The results of the analysis indicate the presence of a certain path dependency in the targeting of subsidies. Firms embedded in networks and, in particular, in local clusters, are far more likely to be supported. This may reflect the lower administration costs of targeting innovation to firms existing clusters, but is a factor that may undermine the very innovation pursued by the scheme medium-term. While firms located at the centre of local networks get more and more repeated support, this leads to lock in and limited innovation improvements. Firms located at the fringes of existing networks, by contrast, receive less support but make more in terms of innovation, mainly by their capacity to forge partnerships outside the cluster.

### **Simple Complex Phenomenon of Urban Parking**

Mr Nir Fulman<sup>1</sup>, **Prof. Itzhak Benenson<sup>1</sup>**

<sup>1</sup>*Tel-Aviv University, Tel Aviv, Israel*

S27-S2 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?  
MILC\_Room 309, August 28, 2019, 2:00 PM - 4:00 PM

Long parking search time is a perpetual problem of every big city, and quantitative estimation of cruising time is a long-standing challenge for transportation research. The imbalance between the occupation rate, and the rates of arrivals and departures is typical for the central office/commercial/residential areas of every big city and results in notorious estimate of 30% urban traffic as entailed by the parking search. For the travelers, parking search time and parking price are the major factors that define the choice of the transportation mode, and, in a longer run, the decision on car ownership. For the city transportation planners and managers parking prices and constraints are the easiest tool for affecting travelers' behavior and, eventually, urban traffic.

We demonstrate that the phenomenon of the parking search is only loosely connected to the other components of the urban traffic and, thus, can be investigated separately from it. Moreover, every component of the parking phenomenon – parking demand and supply, drivers' arrival, departures and, also, drivers' search behavior and decision making can be estimated based on the standard high-resolution urban data that are available in the majority of the large Western cities. In this way, dynamics of the urban parking pattern becomes a unique example of the complex subsystem of urban traffic system that can be explicitly and formally represented at resolution of a single driver and single parking spot, studied in theoretical and applied fashion. Furthermore, the results of this study are critical for urban transportation policy making. In the paper we investigate several analytical and simulation models of urban parking dynamics and propose easy and practical algorithms for estimating parking search time and establishing parking prices that guarantee predetermined level of parking occupation. All these solutions are built based on the standard high-resolution urban GIS data and, if necessary, simple field studies. Based on the models results, we propose parking policies that improve the state of urban transportation and discuss the ability of society to implement these policies.

### **Shared Automated Ride-Sharing Service – Will It Dominate Future Transportation?**

Mr. Golan Ben-Dor<sup>2</sup>, Dr. Eran Ben-Elia<sup>1</sup>, **Prof. Itzhak Benenson<sup>2</sup>**

<sup>1</sup>*Ben-Gurion University Of The Negev, Beer Sheva, Israel*, <sup>2</sup>*Tel Aviv University, Tel Aviv, Israel*

S66-S1 Assessing impacts of automated driving and automated mobility  
IUT\_Room 108, August 30, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Network Against Cancer**

**Mr Adhen Benlahlou**<sup>1</sup>

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S14-S2 Collaboration-based innovation policies: theory, empirics and practitioner feedbacks  
UdL\_Room 106, August 30, 2019, 11:00 AM - 1:00 PM

We study the impact of research collaboration in co-inventions network on total research output. Inventors' links create direct and indirect spillovers across the network. We characterize the interior equilibrium efforts level in research when agents spend efforts in multiple projects for every network structure. In work in progress, we structurally estimate this model using a unique dataset of patents linked to cancer R&D. We will use our estimates to study the impact of heterogeneous vs. non-discriminatory subsidy policies and empirically rank inventor according to the production-maximizing subsidies they should receive.

### **Tax Evasion in the Housing Market: Identification and Exploration**

**Prof. Danny Ben-shahar**<sup>1</sup>, Dr. Roni Golan<sup>1</sup>, Mr. Eyal Sulganik<sup>2</sup>

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S38-S1 Housing Markets: information, taxes, prices  
IUT\_Room 108, August 28, 2019, 11:00 AM - 1:00 PM

The real estate market is recognized as a fertile ground for tax fraudsters. Specifically, reporting a price lower than the true transaction price in order to avoid tax payments is a prevalent fraud technique. We propose an empirical method for identifying housing transactions that are suspected of under-reporting. Based on all reported housing transactions in Israel over the period 1998–2015, we conclude that about 8% of the transactions are under-reported, with an average price report of 33% below the projected true price. Also, the likelihood to under-report is positively associated with the total tax liability and positively (negatively) associated with the crime rate in (the socioeconomic level of) the area in which the transaction occurs. Compared to single unit owners, real estate investors are less likely to engage in under-reporting. Our empirical approach may serve tax enforcement authorities in promoting tax collection in the real estate market.

### **Regional effects of a large inflow of asylum seekers on the employment of locals**

**Mr Paul Berbée**<sup>1</sup>, Dr. Alfred Garloff<sup>2</sup>, Dr. Katrin Sommerfeld<sup>1</sup>

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G15–YS1 Population, Migration and Mobility Behaviour  
IUT\_Room 108, August 29, 2019, 11:00 AM - 1:00 PM

The large recent inflow of asylum seekers to Europe can be considered as a substantive labor demand shock because asylum seekers are banned from working in the first months after arrival. At the same time they require government-provided services like housing, administration and integration courses. We estimate employment growth due to asylum immigration based on a dispersal policy in Germany. Preliminary results

confirm significant additional employment growth that is driven by certain immigration-related occupations (security, gastronomy, and business organization). Districts with tight labor markets show significantly smaller additional employment growth as reaction to the inflow, when compared to districts with high unemployment. We hypothesize and find some evidence that occupational mobility plays a more important role in satisfying additional labor demand in tight labor markets. Finally, regional mobility also appears to matter as a response to the labor demand shock.

### **Should I move to diversify my scientific network? A panel analysis of chemists' careers**

Dr. Marie Ferru<sup>1</sup>, Miss Marine Bernard<sup>1</sup>, Dr Bastien Bernela<sup>1</sup>

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S17-S2 Geography of science and the spatial dimension of scientific activity, IUT\_Room 201, August 30, 2019,  
2:00 PM - 4:00 PM

A literature interested in the geography of science (Livingstone, 1995; Eckert and Baron, 2013) evolved in recent years in a context of support of inventor's mobility manifested by European mobility programs (Morano-Foadi, 2005). Considering that knowledge is attached to individuals (Cañibano, 2006), many authors assume that mobility allows researchers to meet and collaborate with new researchers to exchange knowledge (scientific network diversification). Mobility would be therefore indispensable to product new knowledge and diffuse it across space. In this article, we propose to answer the following question: should I move to diversify my network? Network diversification means here collaborating with new partners (ie. social diversification) or with new partners from changing geography (ie. spatial diversification).

Authors have mainly focused on the impact of mobility at the macro perspective through issues of "brain drain" (from Bhagwati (1976) to Breschi et al. (2017)), studying migratory flows and nodes in networks at the cities and countries levels. In parallel, some authors developed a greater focus on individuals, mainly testing the impact of researchers' mobility on their performance (Hoisl, 2007; Lawson and Shibayama, 2015). However, few authors have analyzed the link between mobility and scientific network (Fontes, 2012, Melin, 2005). Inscribed in this direction, our research searches to test the role of mobility in building and developing the scientific network at a micro level, reintegrating mobility in the context of the ongoing career of researchers.

Empirically, we focus on scientific publications of researchers, that constitute a relevant indicator of successful collaborations. We focus on chemistry: the co-authorship is particularly dense because of scientific practices (experimental dimension, need for technical skills, importance of teams, etc.) but not tremendous (the average number of co-authors 4 per article). We analyze the formation and dynamics of co-authorship personal network over time of 80 chemists located in two French labs. With bibliometric data, we collected the affiliations to understand the geography of co-authorship. When do researchers diversify their co-authorship and renew collaborations? Is the geography of co-authorship sensitive to the spatial trajectories of chemists? Do mobile researchers maintain collaboration over time despite geographical distance?

### **How can urban congestion be mitigated? Low emission zones vs. congestion tolls**

Dr. Valeria Bernardo<sup>1</sup>, Dr Xavier Fageda<sup>2</sup>, Dr. Ricardo Flores-Fillol<sup>3</sup>

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G16-O2 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 9:00 AM - 10:30 AM

The great weight that the car has as a means of mobility in large cities generates significant negative externalities both in terms of congestion and pollution. The goal of this paper is to examine, using a panel of large European urban areas over the period 2008-2016, the effectiveness of urban tolls and low emission zones in mitigating urban congestion. We conclude that urban tolls are successful in mitigating congestion. Instead, low emission zones are not effective. This is a very relevant result, given that such policy is being implemented extensively in Europe.

### **Exploring the borders of a transregional knowledge network. The case of a French research federation in green chemistry**

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S17-S1 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 11:00 AM - 1:00 PM

Competition in research has led to the emergence of numerous consortia of laboratories, designed to improve their participants' visibility. This article aims to understand the determinants of these new structures through the case study of a French federation of laboratories in green chemistry. Working from bibliographic and qualitative data, we examine this federation's geographical and institutional scope, highlighting the importance of i) prior collaborations in French chemistry, ii) interpersonal relations between consortium members, and iii) policy and scientific incentives. This research highlights the role of the territorial scope of the consortium not only as an argument for the consortium to emerge but also as a resource for its development and visibility among academics and industrial partners.

### **Paving the way for Circular Economy monitoring in Europe: an econometric approach to regionalise official statistics on material consumption**

Mr Marco Bianchi<sup>1,2</sup>, Dr Carlos Tapia<sup>2</sup>, Dr Ikerne Del Valle<sup>1</sup>

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S34-S1 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

The Circular Economy (CE) is the far-reaching strategy adopted by the European Commission in response to concerns about the long-term viability of the prevailing resource-intensive economic model (European Commission 2015; Macarthur 2015). This new approach is expected to contribute to a fundamental de-linking between economic growth and resource depletion. Understanding how these systemic changes might occur and how regional economies could converge towards circular and sustainable trajectories is one of the main challenges that policy-makers and regional planners face (Ghisellini et al. 2016; Kalmykova et al. 2018), often in a poor data environment.

Recently, new CE monitoring frameworks have been proposed by European and national institutions (European Commission 2018; PBL 2018) to track progress towards the various priorities of the CE, including material consumption. However, the available data are highly aggregated, and offer limited information on the diversity of conditions at sub-national scales. Moreover, the few material consumption studies available at sub-national scales differ in their purposes and approaches, thus limiting comparability of results (Rosado et al. 2014).

The availability of harmonised and disaggregated data is crucial to support decision makers in coming to understand the metabolism of regions. Indeed, this is the scale where material analysis results have been



more often translated into successful policies (Binder et al. 2009). Given the impossibility to directly gather or systematically produce harmonised regional data on material consumption – especially for past years – this paper presents a stage-based econometric approach that makes use of available socioeconomic data and spatial techniques to disaggregate national material consumption data of 31 EU countries down to their regional level. The method provides a pragmatic but reliable solution to deal with data scarcity at sub-national levels and can be efficiently used to build time series for past years where disaggregated data do not exist nor can be collected. It provides enough data resolution for many applications and contributes to the identification of regional patterns of resource use that would otherwise remain unknown.

### **Cooperation imperatives between rice farmers and millers to survive international competition in the context of FTA between Colombia and USA**

Dr. Alexander Blandón López<sup>1</sup>, MA Janeth Gonzalez Rubio<sup>1</sup>, MA Joel Hernando Cruz Diaz<sup>1</sup>

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G08-R1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 11:00 AM - 1:00 PM

The rice-milling value chain in Colombia represents an important economic activity at the sectoral and regional levels given its potential for generation of income and both formal and informal employment. However, since the signing of a FTA with the USA in 2012, the main stakeholders of the rice value chain as well as producers from other agroindustrial chains have faced several competitive challenges. The FTA has promoted important changes in the governance structure of the rice milling value chain and thus in the cooperation imperatives between rice farmers and millers to promote the competitiveness of the value chain and thus survive international competition. The producers of the agro and rice milling links in spite of their manifest rivalry are moved to develop alternative cooperation schemes due to the urgent need to be competitive in face of the threats to the value chain by the FTA. The main objective of this research is to determine competitive responses of the key stakeholders of the rice value chain of Colombia to the economic insertion in the international markets in the context of the signing of the free trade agreement with the USA. The theoretical framework is elaborated around the main analytical categories that make up this research, such as competitiveness, competitive strategy and value chains- The study follows a descriptive methodological approach through the combination of quantitative and qualitative analysis focusing on the microeconomic and meso-economic level. Methodologically in-depth interviews with key stakeholders are carried out to determine the specificities of their competitive response to the challenges in terms of opportunities and threats of the FTA. In general, the rice mills in Tolima mostly converge towards bad (39%) and regular (56%) perceptions regarding the signing of the FTA with the United States, responding to a valuation of disadvantages in results and evolution of the sector during and after the signing of the agreement.

### **Does technological change destroy jobs?**

Prof. Uwe Blien<sup>1</sup>, Dr. Oliver Ludewig<sup>1</sup>, Dr. Anja Rossen<sup>1</sup>

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S11-S1 The regional socio-economic impact of the 4th industrial revolution  
UdL\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

The effects of technological change on employment have received much attention in recent years. Will productivity gains lead to technological unemployment or to new prosperity? In our paper, we formally show that under general assumptions the price elasticity of demand on product markets is decisive:

Technological change leads to an expansion of employment if product demand is elastic. It is accompanied, however, by shrinkage of employment if product demand is inelastic. A transition from the elastic into the inelastic range of the demand function for the most important product(s) can already suffice to plunge a region into crisis.

In our empirical analysis we use industry level time series data on output, prices, employment and national income for Germany to estimate Marshallian type demand functions. We use an instrumental variables estimator to derive the price elasticities for different industries. Another approach applies state space modelling to derive time-varying elasticities. In a second step, we use the information on the elasticities to analyse the regional labour market performance of the respective industries and regions.

### **Assessment of economic losses caused by mortality of rural population at working age in Russia**

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G23-O1 Rural Issues

MILC\_Room 410, August 29, 2019, 2:00 PM - 4:00 PM

The purpose of this study is to quantify the cost equivalent of economic losses from mortality of the rural population of working age in Russia (2012-2017). The size of the economic losses caused by the mortality of the rural population is measured by the scale of agricultural products potential underproduction. The approaches that exist in the scientific literature to measuring the economic losses from mortality and assessing the economic equivalent of the cost of living are reviewed and summarized. On the basis of the calculations carried out, the variants of quantitative estimation of economic losses scale from mortality of the rural working age population are proposed.

The results of the study showed that significant interregional differences in economic losses from mortality of the rural population of the Russian Federation of working age remain. The estimation of interregional differentiation of indicators of economic losses for 2012-2017 years is carried out. It is shown that the greatest economic losses is recorded from external causes of death, diseases of the circulatory system, tumors, as well as some infectious and parasitic diseases.

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### **Examining the Development Factors of Central and Eastern European Regions**

Dr. Gabor Bodnar<sup>1</sup>, Dr. Zoltan Egri<sup>2</sup>, Dr. Peter Kovacs<sup>1</sup>

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G04-O11 Regional and Urban Development

IUT\_Room 207, August 30, 2019, 9:00 AM - 10:30 AM

In the presentation we analyse the special features of the spatial structure of Central and Eastern Europe, a region still in the phase of transformation. There are numerous antecedents of this topic; the corresponding studies have delineated both the developed and underdeveloped areas, as well as other intermediate areas, leading to various 'geodesigns', figures, and models. First, a brief description of the main studies of spatial structure concerning the macroregion is given, then our definition of the spatial structure of Central and Eastern Europe is outlined.

The research is based not only on the main traditional development indicators (e.g. GDP per capita, unemployment rate, and economic density), but also takes into consideration the elements of Peter Nijkamp's XXQ model (economy, livability, research and development, accessibility). In our work, we attempt to measure the role of the elements of the XXQ model in a Central and Eastern European (CEE) context. We then examine the model using a partial least squares path analysis. The PLS path analysis approach is a novel tool within territorial research, especially if we focus on CEE. With the help of the method, we can make a regression model which can describe the effects of each element on the economic development of the involved states (Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria). Central and Eastern Europe NUTS 3 regions are our territorial focus; however, being able to determine the appropriate territorial context and level is significant.

### **Same, same but different? Effects of a new commuter train station on different neighbourhoods**

**Dr. Helena Bohman**<sup>1</sup>

<sup>1</sup>*Malmö University, Malmö, Sweden*

S26-S2 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 2:00 PM - 4:00 PM

This study focuses on the effects of major infrastructure investments in Malmö, southern Sweden. The construction of the Oresund bridge and the city tunnel, connecting the urban centre of Malmö and Copenhagen, has implied changed accessibility for surrounding neighbourhoods. In this study we identify four neighbourhoods, based on their socio-economic characteristics. The area provides an interesting case since the catchment area contains neighbourhoods ranging from the poorest in the city, to upper middle class areas. The municipality has an explicit aim of integrating areas which have been divided by very clear physical barriers. In two of the affected neighbourhoods, new development and densification projects are being implemented, resulting in an increasing population. The case thus provides an opportunity to better understand how accessibility effects may differ across socio-economic characteristics. The main issue addressed in the paper is whether effects from improved accessibility differs across different neighbourhoods, and which factors that may explain such differences. Difference-in-difference models are applied to property data to study effects, but additional data on residential migration is used to explore who moves into the affected area.

### **Do your neighbours matter? Evidence from Building Demolitions in Denmark**

**Mr Bence Boje-Kovacs**<sup>1</sup>, Mr Georges Poquillon<sup>2</sup>

<sup>1</sup>*University of Copenhagen, Copenhagen, Denmark*, <sup>2</sup>*University of Essex, Colchester, England*

S45-S1 Social mobility & Inequality

IUT\_Room 205, August 29, 2019, 4:30 PM - 6:00 PM

This paper provides evidence of the effect one's environment has on their socio-economic outcomes. We study the forced moves of households out of their dwellings in the public housing sector in Denmark, preceding the closure of the building they live in. Specifically, we combine the exogenous tenure of displaced individuals with the characteristics of their neighbours to measure the short-term exposure to their environment at the building level. We find that being exposed to employed neighbours on the short-term significantly increases income and the likelihood of finding a job in the three years following the

rehousing of displaced households. On the opposite, the short-term exposure to unemployed peers increases the chances to remain unemployed after relocation. Long-term exposure has a more substantial effect than short-term exposure, but is not longer-lasting.

### **A “broken” European Union: Exploring alternative scenarios from a multiregional perspective**

Ms Lucia Bolea<sup>1</sup>, Dr Rosa Duarte<sup>1</sup>, Dr Julio Sánchez-Chóliz<sup>1</sup>

<sup>1</sup>*University Of Zaragoza, Zaragoza, Spain*

G08-O1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 11:00 AM - 1:00 PM

The phenomenon of the emergence of groups of countries that share certain economic and political characteristics, has led to the generation of several economic areas in recent years that apparently seemed to work correctly, but that have finally had problems after the integration. This could be the case of the European Union, in which a group of countries decided to create an area in which they shared, not only certain political decisions, but economic ones. However, the arrival of the international financial crisis in 2007 caused imbalances in relations and collaborations between countries. Several studies have focus on the analysis of the consequences of several recent economic phenomena through econometric techniques, others with a multiregional perspective and others through building counterfactuals.

In this paper, the objective is to focus on the possibility of defining a type of synthetic indicators in an input-output framework, in a dynamic context, building "counterfactuals" and alternative scenarios to evaluate the impact of certain phenomenon in a European context, as well as in a global context. As a first example, and because of the problems that have arisen recently, the study of the “non-integration” of Eastern European countries could be an interesting scenario. We use the multisectorial and multiregional perspective provided by a MRIO model and the associated databases.

More specifically, inspired by the synthetic indicators methodology and the hypothetical extraction methods we first study the trends in the intra-EU and extra-EU trade relationships for these countries and in the technological and structural composition of the economies. Second, we design hypothetical scenarios on the trends in the evolution of these components based on the behavior observed in the pre-adhesion period and in different hypothesis of integration.

In this regards, this paper attempts to shed light on the discussion about the consequences of certain areas of economic integration, and the effects of these phenomenon on bilateral trade flows between countries within the EU and worldwide. To do this, the information provided by the World Input-Output database (WIOD), as well as the information provided by other databases are used.

In our view, the results could contribute to calculate the structural effect of the most recent integration and disintegration processes within the European Union and worldwide, that currently set as a new challenge that must be faced by several groups of countries, which today present certain structural differences.

### **Municipal Fiscal Health in Colombian Main Cities**

Dr. Jaime Bonet<sup>1</sup>, Dr Gerson Javier Perez<sup>1</sup>

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G09-O2 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 2:00 PM - 4:00 PM

Local governments face the financial constraints imposed by the scarce resources in the economy. This fact leaves them the challenge of looking for the best way to get a steady balance between a consistent revenue flows and meeting their commitments (Jacob and Hendrick, 2013). The literature has come up with the

concept of fiscal health to refer to the situation under which governments are capable of balancing revenue streams and their financial obligations (Helpap, 2016).

The concept of fiscal health has been evolving from the simplistic measure of how revenues exceed spending obligations (Berry, 1994; Badu and Li, 1994; Bird, 2015). For this reason, in part due to worldwide crises affecting national and subnational finances, the concept is being much harder to define, to understand and to measure. For example, it is being recognized that fiscal health does not only have to do with the balance between revenue streams and spending commitments, but also with cash, budgetary, long-run solvency, and many other factors affecting governments and residents' social and the economic reality (Groves et al., 2003).

With the purpose of contributing to the discussion on fiscal health in a developing country, this paper computes and analyzes 15 indicators for the main 23 municipalities in the country. This document follows the approach by Slack (2017) that, to the best of our knowledge, is for the first time implemented in Colombia. The methodology covers and takes into account the multiple methods and measures developed so far, and end up with six sets of indicators: profile, external, financial, tax and revenue, debt, and infrastructure.

Results make evident the extensive heterogeneity among Colombian cities, even those with similar characteristics. In addition, the process of making fiscal health diagnoses is extremely complex and is more effectively implemented in a multidimensional set up. In terms of fiscal health, for the 23 cities analyzed, results show that there are no deep or generalized problems with public finances of subnational governments. However, there seems to be regional heterogeneities where the two coastal lagged behind regions, Caribbean and Pacific, face longer-term and more structural problems, in particular with tax base and their capacity to get tax and non-tax revenues. On the other hand, richer and more able regions, Central and Eastern, deal with short-term restrictions such as those related to liquidity and cash flow.

### **Access to services and shops - confronting urban planning documents to the SIRENE database**

Dr. Olivier Bonin<sup>1</sup>, Pr. Pierre Frankhauser<sup>2</sup>, Xavier Lehmann<sup>2</sup>

<sup>1</sup>*LVMT - Ifsttar, ENPC, UPEM, Marne-la-vallée, France*, <sup>2</sup>*TheMA - Université Franche-Comté, CNRS, Besançon, France*

S33-S1 Modelling place attractiveness in the era of Big and Open data  
MILC\_Room 310, August 28, 2019, 11:00 AM - 1:00 PM

To identify the quality of access to different types of commercial activities on a territory, we rely on needs theory that establishes a link between basic needs in an anthropological sense and their satisfaction related here to the facilities (services, businesses) that correspond to them. To this end, we studied a large number of urban planning documents and we confronted them to the terrain reality.

It can be seen that the French planning documents introduce a hierarchy of needs often assigned to attendance (daily, weekly, rare...). Access is considered either through physical distances or through a time-distance. It is also possible to associate the recommended modes of transport (soft mode, public transport, car) according to the category of purchase.

The documents also provide information on the relationship between the presence of services/commercial businesses and the size of the population to be served. This makes it possible to review the access distances, but also to know the shopping areas necessary to make an establishment profitable. A territorial diagnosis is thus possible to highlight equipment deficiencies.

Moreover, interesting information is available on the land use of shops and services, as well as figures on indirect land consumption. This corresponds to the reception capacities proportional to the size of the

equipment (car parks, access roads) according to the number of potential users, which refers to the barge areas.

Another aspect concerns the generation of local jobs by services and businesses. The documents provide information on the number of jobs by class of trade as well as the area per job that can be made consistent with the indications on land ownership.

We were able to confront this theoretical information to extensive data about commercial amenities extracted from the SIRENE database. All commercial activities are described and can be geolocalised at the address, giving the possibility to assess the strength and weakness of territories as far as access to local commercial amenities is concerned.

### **Typology of sustainable development in Normandy. An appraisal at the intermunicipal level**

**Prof. Jean Bonnet**<sup>1</sup>, Doctor Eva COLL-MARTINEZ<sup>1</sup>, **Doctor François Raulin**<sup>2</sup>, Prof. Patricia Renou-Maissant<sup>1</sup>

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S61-S1 Energy Transition and Eco Innovation  
MILC\_Room 409, August 28, 2019, 4:30 PM - 6:00 PM

Since the Brundtland report (1987) and the adoption of Agenda 21 at the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, governments committed to developing strategies to achieve sustainable development. To address the challenges of the threat of ecosystems degradation and global warming, a radical technological transformation of the global energy system is required. The Agenda 21 adopted by the United Nations at the 1992 Earth Summit emphasizes the key role of territories and local authorities in implementing sustainable development. It suggests that strategies for action, "local agendas 21", be developed for this purpose by strongly involving residents, all local actors and businesses. A whole set of initiatives are emerging locally to respond to these new challenges.

In France, two mechanisms for promoting local sustainable development coexist (ADEME, 2018). Local Agenda 21 is a voluntary initiative initiated by the community. It is a participatory process for the inhabitants, which proposes a new mode of governance and animation of the territory. It results in a program of actions aimed at improving the inhabitants' quality of life, saving natural resources and enhancing the attractiveness of the area. The Territorial Energy Climate Plan (TECP) is a strategic planning and organization tool designed to support the community in reducing its greenhouse gas emissions and in its adaptation to climatic changes. As part of its policy for sustainable development, the Normandy Region has set up a "Sustainable Territory 2030" program.

The paper proposes an evaluation framework for comparing sustainable development in Normandy at the intermunicipal level, taking into account six dimensions: environment and natural resources, energy transition, territories and sustainable mobility, economic dynamism, social cohesion and solidarity, and governance. Considering a wide range of variables, we build aggregate composite indices for each dimension of sustainable development (OECD, 2008, O'Connor et al., 2008, Mazziotta et Pareto, 2013, 2017). Then a cluster analysis is used to classify EPCI and to explore similarities and dissimilarities with respect to the six components of the sustainable development. Results make it possible to identify the strengths and weaknesses of the territories as well as the levers and obstacles to sustainable development. Spatial patterns may also eventually emerge. Finally, recommendations can be drawn for local public policies.

### **On the modal shift from motorway to high-speed rail: evidence from Italy**

**Mr Mattia Borsati**<sup>1</sup>, Prof Daniel Albalade<sup>2</sup>

<sup>1</sup>University of Trento, Trento, Italy, <sup>2</sup>University of Barcelona, Barcelona, Spain

S68-S1 Transport Infrastructures and European Integration in the Framework of the White Paper 2011:  
Evaluation, Benchmark, Perspectives at the Age of Digital Transformation  
IUT\_Room 108, August 30, 2019, 2:00 PM - 4:00 PM

The development of high-speed rail (HSR) has been one of the central features of recent European Union transport infrastructure policy, as highlighted by the latest Commission White Paper 2011 “Roadmap to a Single European Transport Area”. Nowadays, HSR services have notably changed the modal market shares in the routes where they have been implemented by both generating new demand and replacing the demand for other modes of transport.

To date, the attention has been mainly devoted to the intra- and inter-modal competition between HSR and air services, while few studies examined the impact of HSR links on shorter distances, where car is the competitive means of transport. Therefore, since road traffic reduction is one of the key drivers to offset HSR investments, the aim of this paper is to fill this gap by analysing whether the HSR expansion led to a modal shift from motorway to HSR services in Italy in a quasi-experimental setting. At this purpose, we empirically test i) whether HSR openings next to some motorway sectors has reduced the total km traveled by light vehicles on those sectors during the period 2001-2017; and ii) whether this reduction is persistent or even stronger after the opening of on-track competition (since 2012) on HS and some conventional lines between the incumbent Trenitalia and the new operator Nuovo Trasporto Viaggiatori, that provided more HS capacity and forced Trenitalia to reduce the average fares. The novelty lies in carrying out a generalized difference-in-differences estimation by using a unique 17-year panel dataset that exploits the heterogeneous traffic data within all tolled motorway sectors

Results show that HSR expansion did not lead to a modal shift from motorway to HSR services, as the two transport modes are not competing. This arise the debate whether the mobility needs of wide metropolitan areas, where middle-sized towns are at relatively short distances between each other, should rely more on a fully mixed high-speed model rather than on the typical "need for speed" of long-haul routes.

### **Implementation of Social Responsibility Approach into Electronic Monitoring: Challenge for Public Sector Services**

Dr. Katarina Vitalisova<sup>1</sup>, **Dr. Kamila Borsekova**

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G22-O1 Institutions  
IUT\_Room 303, August 29, 2019, 2:00 PM - 4:00 PM

The recent economic downturns and needs of austerity measures call for more efficient solutions not only in private, but also in public sector. The same counts for criminal justice system providing wide scale of public services requiring significant funding from public resources. Therefore, public sector is forced to search for more efficient ways of provisioning public services. Over the past few decades, the public sectors all over the world has undergone series of financial and non-financial reforms in an effort to improve its efficiency, effectiveness and accountability (Guthrie1998; Barton 2005). These reforms are considered to be driven by an ideological shift in the public sector to adopt more business, like private sector practices (Jackson and Lapsley 2003). Social Responsibility is equally applicable to both the public and private sector, and is concerned about professional and responsible management of relationship with the key stakeholders' groups (On and Ilies 2012; Peattie 2011). Presented paper is focused on two significant reforms implemented in the public sector—social responsibility and electronic monitoring as well as their mutual relation and impact. The scientific objective of the paper is to analyse how is social responsibility

approach implemented in the system of electronic monitoring on economic, legal and social level and to evaluate impact of this mutual interaction on selected public sector services. The paper is unique in its interdisciplinary orientation, bringing social responsibility approach together with law, economic and social aspects of electronic monitoring. Present paper contains original data and the robust overview of implementation of electronic monitoring in European countries and outlines a close link to social responsible behavior in several aspects.

Key message of the paper is in interconnection of electronic monitoring and social responsibility approach on the level of individuals and institutions. Implementation of electronic monitoring as an alternative form of punishment may bring positive externalities in the matter of more responsible individuals and institutions that leads to the more responsible society.

### **Concerted resilience strategies for disrupted cities**

**Dr. Kamila Borsekova<sup>1</sup>**, Prof. Peter Nijkamp

<sup>1</sup>*Matej Bel University, Banska Bystrica, Slovakia*

S40-S4 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 29, 2019, 9:00 AM - 10:30 AM

Disruptions of the stable growth path of a city (or urban agglomeration) may come from different origins, in particular, a collapse of the local economy due to malfunctioning of economic actors in the city concerned, a deterioration of the urban system concerned due to severe governmental or public policy failures, or a disastrous decay of the complex urban fabric due to external devastating forces (such as a banking crisis, natural disasters or political conflicts). If such disruptions occur, two major issues arise: (i) what are the broader or system wide impacts (socio-economic, spatial-morphological, ecological etc.) of an unanticipated event, and (ii) what are appropriate policy measures so as to cope effectively with these disruptions? This concern brings us into the realm of vulnerability and resilience analysis for cities. Each complex system that is susceptible to drastic changes (often in a downward direction) will try to recover from the consequences of its vulnerability. This prompts the question on the resilience conditions after an (internal or external) disruptive development of the urban system. And in particular on the role of governance in order to restore the balance for a city finding itself in a downward transition, which needs a radical recovery policy.

Against this background, the present paper aims to analyse the interrelationships between resilience and vulnerability and to depict and assess feasible or desirable concerted resilience strategies for a disrupted urban socioeconomic system. In order to cover this broad topic, in the present paper both qualitative and quantitative research in several stages of an urban systems analysis, is undertaken. The explanatory and exploratory study of the connectivity between resilience and vulnerability analysis is supplemented by cluster and correlation analysis of a broad range of urban data.

Different patterns of the complex interaction between resilience and vulnerability are clearly influenced by various drivers and linkages among them. It is noteworthy that cities vary enormously in their adaptive capacity to new or unexpected challenges, due to several crucial factors such as governance, institutions, cultural habits, technology, wealth, urban planning, and their ability to respond to such challenges. This calls for so-called concerted urban resilience strategies based on balanced multi-stakeholder strategies. The urban resilience increases when cities have more adaptive capacity, and decreases when they are more vulnerable. Reduction of vulnerability through deliberate actions, such as concerted strategies, may increase the resilience of the socioeconomic system concerned.



## **Paradox of the economy of Ukraine**

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G07-O3 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

Ukraine has a lot of natural resources, cheap skilled labor, favorable geographical location - a good combination of factors of success of the exporting country. But now Ukraine is successfully competing in the agricultural market (raw crops), logs, iron ore, steel, that is, competitive positions, that is, competitive positions - these are resources with a low degree of processing. There is also demand for products of heavy and military industry. Many other industries are not competitive, despite the apparent potential (stone-processing industry, food industry, etc.). The quality of produced products is low, the cost is high. The main reasons are outdated inefficient technologies, lack of economies of scale. The low demand for products, together with the lack of financing, leads to the fact that enterprises continue to "survive" while working on obsolete equipment, even when updating fixed assets, these are point investments that are designed to meet the limited demand in the domestic market. A closed loop turns out: limited offer - high prices - low quality - limited demand. The decision to exit this circle is attracting foreign investment: a foreign investor can give both technology and sales. However, the lack of legal protection of business, corruption, the war in the East and the low level of professionalism and culture of the vision of business in the country make Ukraine a very risky space for a foreign investor. There is a paradox: in Ukraine there is a large number of investment -attractive projects with significant growth potential and level of return on investment. Thus, a significant part of the country's industry is in a paradoxical and very dangerous situation. The paradox is that, despite the enormous potential for growth, businesses are degrading. The danger of degradation is that the degradation of enterprises leads to irreversible structural changes in the economy.

The risk and risk of opening joint ventures is that joint ventures are a risky form of cooperation when it comes to joint ventures between partners of completely different business cultures, especially now that business in Ukraine is developing in a complex environment. The main risk lies not so much in the risks to the success of the project, but in the communication between the partners due to the high probability of occurrence of contradictions in difficult situations, dissatisfaction with the methods and the "price" of solving certain problems, due to the lack of clear distribution of responsibilities.

## **Third-places as embodied forms of a common, namely the right to the city.**

Ms Claire-Anaïs Boulanger<sup>1</sup>, Professor Annick Castiaux<sup>1</sup>

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S20-S4 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 29, 2019, 9:00 AM - 10:30 AM

See extended abstract online.

## **Success and failure of methanisation unit projects: location, governance, financing. An empirical analysis in the West of France**

Dr. Sébastien Bourdin<sup>1</sup>

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The development of biogas in different regions has had to face forms of social opposition which might affect the success of the projects. In such a context, the project initiators must implement everything they can to encourage the various kinds of proximity (geographical and organized) between actors in order to see their project through. We used a logit model on 91 biogas projects and semi-structured interviews to analyze the views of the anaerobic digestion stakeholders and their connections in order to identify and understand the obstacles to the development of joint biogas projects. We found that a lack of coordination among actors and a lack of consultation are often at the origin of confrontations, which lead the project initiators to abandon the construction of a biogas plant.

### **In which cities is it good to live? Evaluation of the quality of life in European cities and its determinants**

**Dr. Sébastien Bourdin<sup>1</sup>**, Dr Thomas Cornier<sup>2</sup>

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S51-S3 Counterfactual methods for regional policy evaluation: Policies for regions and cities  
IUT\_Room 304, August 30, 2019, 2:00 PM - 4:00 PM

In a context of increased competition between cities, they must offer jobs and a quality of life that can meet the expectations of increasingly demanding residents (Roy-Valex, 2006). In fact, territories must continuously stimulate their competitiveness and attractiveness to survive (Camagni, 2005). They view the territories in terms of rivalry and must strengthen their competitive advantages to attract capital. Among these competitive advantages, the question of quality of life in the city has its place and is an increasingly recurring argument. Bourdeau-Lepage (2015) thus defends the idea that it is essential to consider the attractiveness of territories through the quality of life and amenities they offer.

The European Union is increasingly focusing on quality of life. The emergence of a Europe-wide urban policy has given new impetus to the need to monitor the development and implementation of this policy, in particular through comparable indicators on quality of life. It is within this framework that the European Commission has led the project to set up an Urban Audit whose objective was to assess residents' perceptions of the quality of life in the city. This survey covers several areas such as employment, environment, housing, transport, culture and urban services. The variables chosen are in part in line with Sen's (1993) work that states that a territory must be able to offer both a "capacity to be" (the freedom to live easily, to maintain good health, to enjoy security and a pleasant living environment) and an "ability to act" (the freedom to travel, to access education, the labour market and various leisure activities).

Many scientific studies have addressed this issue of quality of life within a city or at the scale of a country, but there is no comparative study literature at the scale of EU cities based on the data from the Urban Audit. The objective of this article is therefore to provide a framework for analysing the perception of the quality of life in cities at European level. We wish to question the existence of a spatial differentiation of the quality of life perceived by the inhabitants. In order to answer these questions, first we will use a Logit model to identify the main determinants of quality of life in cities, then we will carry out a typological analysis of European cities based on the data from the Urban Audit survey for 2006, 2012 and 2016.

### **A participative process to decrease coastal vulnerabilities and optimize land use transformation**

Prof. Damien Serre<sup>1,2</sup>, **Bastien Bourlier<sup>1,3</sup>**, Marie-Laure Lambert<sup>4</sup>, Charlotte Heinzle<sup>2</sup>, Nathalie Long<sup>3</sup>

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The Inegalitto project, funded by the Fondation de France focuses on coastal areas management and development of French West coast, more precisely between La Rochelle (Charente Maritime) and Saint Briec (Côtes d'Armor). The main goal of the project consists in integrating environmental inequalities into the operating of such spaces. For example, how different groups of inhabitants and actors are more or less vulnerable to identified and/or already experienced major hazards coming from the sea, like "Xynthia" storm in 2010.

A first set of investigations demonstrates that different groups of actors experiencing this storm adopted different conclusions dealing with retrofitting and planning these vulnerable areas. Some of them would design project to better protect inhabitants and assets, others prefer to restore ecological issues and pathways, finally many organized groups would prefer to rethink the land planning strategies in deciding to continue to propose urban and economic development of their areas, sometime without clearly taking into account past (but recent) risky situations.

Taking into account that initial results and contradictory issues on a same place, we decide to design a process and tool to help actors, group of interests and inhabitants to compare and simulate different land planning strategies. To achieve this goal, a Participative Geographic Information System (PGIS) is under development as well as a Participative Process to take into account as much as possible most of planning options. We aim at using that approach in analyzing every proposition and answering at this question during meetings: does the project increase or decrease coastal resilience?

### **Machine Learning models for bankruptcy prediction in Italy: The role of the industrial structure**

Dr. Daniela Bragoli<sup>1</sup>, Dr Camilla Ferretti<sup>2</sup>, Prof Piero Ganugi<sup>3</sup>, Prof Giovanni Marseguerra<sup>4</sup>, Mr Davide Mezzogori<sup>5</sup>, Dr Francesco Zammori<sup>6</sup>

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G08-O5 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 2:00 PM - 4:00 PM

Following the seminal work by Altman (1968) and a more recent contribution by Barboza, Kimura and Altman (2017), the aim of this study is to provide a model for the Italian economy that correctly classifies solvent and insolvent firms one year prior to the event, using AIDA Bureau van Dijk dataset over the period 2007-2016.

By applying a full battery of bankruptcy forecasting models, which combine more traditional models such as logistic regression with more sophisticated techniques based on machine learning, the aim of this work is not only to provide accurate forecasts, but also to learn what variables are important predictors of firm bankruptcy in Italy.

For this purpose we add to the financial indicators used in the literature (excluding market based indicators since only a very small number of Italian firms is listed) a set of new variables that describe the industrial structure of the firm, including district membership, but also a measure of mark up, the level of vertical integration, sectorial and regional dimensions.

Results show that the model for the Italian economy provides accuracy indicators that are in line with those in the literature (Barboza, Kimura and Altman, 2017). We also find that, in terms of accuracy, computational methods perform relatively better than the logit. In addition, thanks to the logit regression, we are able to learn the determinants of the probability of default for Italian firms. Interestingly both the financial ratios

and the industrial structure variables seem relevant in terms of influencing the probability of default. In particular industrial district membership reduces the probability of bankruptcy.

From a methodological point of view, we can distinguish two parts. In the first part, we conduct the bankruptcy forecasting exercise. We thus divide the dataset into a training set in which we estimate several models and a testing set in which we validate which model is able to correctly classify solvent and insolvent firms. We consider several models, the more traditional logistic model and more state of the art machine learning techniques (such as random forest, artificial neural networks). We report model performance tests for each model. For robustness, we also report cross validation results.

In the second part of the paper, we focus on the logistic regression of the dependent dummy variable (bankruptcy) on the independent variables, which include financial ratios, district membership and other industrial variables, sector and regional dummies. We report the coefficients and p-values.

## **Spatial Distribution of Scientific Activity: A Spatial Analysis for Germany**

**Prof. Thomas Brenner<sup>1</sup>**

<sup>1</sup>*Philipps-universität Marburg, Marburg, Germany*

S17-S2 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 2:00 PM - 4:00 PM

The interaction between public research, innovations and economic growth has been a topic in many papers. Usually it is assumed that scientific activity supports innovation activity, which leads to economic (employment) growth. This paper extends the existing studies in three ways. First, the various causal directions of the interaction between scientific activity, patent activity and employment dynamics are studied. A structural vector autoregressive (SVAR) framework – the so-called VAR-LiNGAM approach – is used for the analysis. It is shown that scientific activity is often not the driver of innovation and growth but follows the dynamics of innovation and employment. Second, two-digit industries are studied separately so that differences between industries can be examined. It is shown that in the causal mechanisms strong differences exist between industries. All different causal chains are found for some of the industries. Third, while all existing approaches in this field use regions as observation unit, the approach taken here uses data on the level of municipalities and aggregates this data according to travel distances. Hence, the approach is less influenced by the so-called Modifiable Aerial Unit Problem (MAUP). The analysis is conducted for Germany for the years 2003 til 2012. 15 industries are distinguished and analysed separately. Impulse response functions are used to depict the findings.

## **Measuring the potential for smart specialization**

**Prof. Thomas Brenner<sup>1</sup>**

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S13-S1 Mainstreaming Smart Specialisation across European Union policies: challenges, opportunities and tools  
UdL\_Room 106, August 30, 2019, 2:00 PM - 4:00 PM

The concept of smart specialization has been first introduced in 2009 by the Knowledge for Growth Expert Group (Foray et al. 2009) and has ever since received great recognition and approval by policy makers. Despite its success in getting rapid political acknowledgement and experiencing fast application, a systematic operationalization of smart specialization is pending as yet. The two contributions of Balland et al. (2017) and Eichler et al. (2015), to our knowledge, represent the only approaches that offer first explicit

methodological and empirical insights to assess and measure regional smart specialization potentials. Our paper seeks to close these research gaps by providing an integrated method to assess opportunities for smart specialization. We combine the measurement of regional capabilities and potentials, with regard to industrial, technological and scientific characteristics. The newly developed approach is applied to Germany in order to evaluate its usefulness.

Our method combines two aspects by defining an indicator combining a measure for regional potentials and possible regional domains for smart specialization and an indicator assessing the potential future relevance of specific economic activities. The indicator integrates economic, technological and scientific characteristics of a region. Furthermore, in order to assess how a specific industry fits, i.e. is embedded into the regional structure, we do not only measure the existing specialization but measure for all potential specializations the fit to the existing specializations. To this end we calculate relationships. All specializations and relationships are calculated by using data on employees, employee characteristics, patent applications and scientific publications. By matching sectoral data to data on patent applications as well as scientific publications we are able to consider regional domains (rather than merely regional industries or technologies alone).

A number of potential indicators are developed and compared in order to identify the best structure and composition of the indicators. The approach is applied to German regions. Using data from 2000 and recent developments allows to check whether the potential activities identified by the approach fostered growth in the past. Different analyses are conducted and the various indicators are tested for their predictive potential for industry growth, increasing diversification and new developments. Data on governmental subsidies and start-up numbers are used in this context as well as employment data.

### **Hiring by start-ups and regional labor supply**

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S18-S1 Entrepreneurship and local development: symbiosis and/or dissonance?  
UdL\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

Young firms find it difficult to attract (skilled) workers. Using linked employer-employee data for Germany we investigate how local labor market conditions affect the hiring success of young firms. In a first step, we estimate the probability of the founder becoming an employer. Using a two-stage Heckman selection model in a second step we analyze how local conditions influence the probability of hiring skilled human capital. The results indicate a positive relationship between the local unemployment level and the hiring probability of young firms – at least for some firms.

### **Decision-makers' characteristics matter: An operational model for environmental-economic conflict resolution**

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G10-O2 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 9:00 AM - 10:30 AM

The characteristics of decision-makers are generally not included in models of environmental-economic conflicts. These models can be classified in two classes according to their goal: Multi Objective models include several conflicting objective functions that should be optimized simultaneously, and Game Theory models that result in a single solution analyzing the interactions among the players. Despite their

applicability and usefulness these models have several limitations. The most severe is that, generally, the decision-maker is absent from both classes of models. We suggest an operational model for environmental-economic conflict resolution from the point of view of the decision-makers which addresses these concerns. The first step is building the Pareto frontier. Then the focus moves to the decision-maker characteristics: The appropriate game theoretic tool used to solve the conflict is chosen according to those characteristics. The result of this tailor-made game is a single Pareto optimal response which reflects both the decision-maker characteristics, the real-world relations of power between her and the players and among the players themselves. Introducing explicitly the decision-maker preferences in the model, results in more efficient solutions, and allow for a clear explanation about why the chosen solution is better than any other one, subject to the initial decision-maker characterization.

### **Urban land value assessment applied to core-periphery gap measurement**

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G04-O8 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 9:00 AM - 10:30 AM

A residence can be conceptualized as a composite commodity, comprising two main components: Land and structure. While the structure includes all the physical and building characteristics of a given residence, the land component represents the attractiveness of its specific location site. As such, the value attributed to the land expresses the economic value of the residence's location, regardless the type structure built on it. The traditional approach to assess land value assumes that this value is the difference between the market price of the residence and its construction cost. Although this method is accurate for specific real estate properties, it cannot be used for large scale regional assessment. Even if market prices are available, construction costs are difficult to calculate given the great variation of built structures even in small geographical areas. This paper focus on built land values in Israeli urban areas, both at the local and the interurban levels, using an alternative approach. Residential built land values are assessed exploiting a hedonic model based on residential real estate transactions. The calculation is performed at two different time periods, shedding light on the dynamics of the gap between central urban areas and the geographical periphery in Israel over time using built land value as an objective variable.

### **Relationship between Mobility and Quality of Life in the Elderly: a systematic review and meta-analysis of the literature**

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S07-S2 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers  
IUT\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

A large body of literature already exists on transport and mobility, and their manifold effects on individuals and societies. More specifically, the importance of the everyday mobility for one's well-being and quality of life (QoL) has also been discussed by many scholars. Some studies have in particular studied the association between the mobility and accessibility of the older adults with their perceived QoL, which is also the matter of focus in this article.

As the population in many countries worldwide are ageing, one of the key issues at stake is the mobility needs of the elderly: their ability to travel and access opportunities to involve in social, economic, cultural

and civic affairs. On the one hand, mobility and accessibility may promote healthy ageing by providing opportunities for physical activities and movement at older age, and, on the other hand, mobility is considered to be a fundamental element in the QoL in the elderly (Banister and Bowling, 2004): mobility, locality and social networks influence perceptions of QoL, as transport becomes crucial in terms of getting access to local services and facilities, and engaging in social activities.

Within this context, the present article makes a systematic review, for the first time, focusing on the relationship between mobility and QoL in the older adults. By conducting a meta-analysis approach, here the authors have selected over 100 articles published in the period 1970-2018 in peer-reviewed journals and some limited significant monographs, which have directly studied and provided empirical insights regarding the above introduced topics. Data has been extracted for factors associated with the mobility of the elderly and their perceived well-being and quality of life. This method allows a comprehensive overview of the state of research on this topic and enables an assessment of the results and findings of different studies to be evaluated with the others. By means of quantitative techniques, this systematic review is useful for collecting and summarizing the empirical evidences across multiple studies.

### **Mobility of Older Adults: routes, preferences and modus at the neighbourhood scale - the case of Milan**

Dr. Aleid Brouwer<sup>2</sup>, Dr. Mina Akhaven<sup>3</sup>, dr. Ilaria Mariotti<sup>3</sup>, Dr Gerd Weitkamp<sup>1</sup>

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S07-S1 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers  
IUT\_Room 103, August 30, 2019, 9:00 AM - 10:30 AM

The aim of this methods-focused article is to explore travel behaviour, experiences, and preferences of transportation modes and routes of older adults in Milan, to gain insights into the ways that mobility can support active ageing and well-being. We have integrated GPS-, diary- and in-depth interview data to comprehend the everyday mobility practices of these older adults. In order to do so, fifteen adults, aged 65 and over, living in 3 Milanese neighbourhoods (Gallaratese, Gratosoglio and Niguarda Ca' Granda), Italy, have participated in the study. The findings based on quantitative (GPS tracking) and qualitative (interviews and diaries) approaches together generate different insights and layers of understanding from each individual method in order to enhance the overall picture of mobility in older adults. This applied mixed-methods approach can be useful for scholars and professionals working on mobility issues and accordingly policymakers can make use of the findings to design tailored policies to promote and generate increased and sustainable mobility option for this demographic groups.

### **Do wages of foreigners react more sensitive to unemployment?**

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S41-S3 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 28, 2019, 4:30 PM - 6:00 PM

Germany will suffer a serious population decline in future when there is no immigration. The integration of foreigners into the labour market is inevitable to reduce negative consequences of the population decline. This paper therefore analyses the wage differential between foreign and native employees in Germany

depending on the regional, occupational unemployment ratio as one integration related variable. If wages of foreigners react to changes in unemployment similar as the Germans' wage change, then no specific policy implications for the integration process result.

Our preliminary results indicate that a change in the unemployed to employed ratio within an occupation and region leads to the same change in wages for all Germans and foreigners, indicating that here no specific integration problem emerges. However, a change in the composition of the unemployed depending on the proportion of University degree holders and long-term unemployed affects wages differently between all three groups.

## **The Post-Soviet Evolution of the Russian City Size Distribution**

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G04-O4 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 2:00 PM - 4:00 PM

The peculiarities of the Russian urban system are connected with the history of its formation - the period of rapid growth in the number and size of cities coincided with the period of administrative regulation of the economy. After the abolition of centralized regulation of spatial development and the institute of registration ("propiska"), the urban system began to undergo changes: researchers observe a concentration of population in large cities, which is accompanied by a decrease in population in medium-sized cities, migration flows from the eastern to western part of the country, the increase of heterogeneity of the urban system.

The aim of this work was to contribute to the study of the Russian urban system in the post-Soviet period by studying the evolution of the city size distribution in the Russian Federation using the method of analyzing the dynamics of distribution and the relative mobility of objects within the distribution based on the use of Markov chains. This method has not yet been used to study the urban system of Russia.

The study examines 1030 cities of the Russian Federation in the period 1991-2018 and verifies the hypothesis that the mechanisms of spatial evolution, launched by the market system, have shaped long-term trends in the city size distribution, which are different for the western and eastern parts of the country, cities of different sizes and administrative status. We also study the influence of large cities - administrative centers of regions on the dynamics of other cities in their regions.

For these purposes, we estimate and analyze transition probability matrices and spatial transition probability matrices, mobility indices and compare actual and ergodic distributions for different groups of cities in the eastern and western parts of the country.

## **Assessing the effectiveness of regional polycentricity for competitive, cohesive and sustainable development: a framework and some evidence from Italy**

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G04-O3 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 2:00 PM - 4:00 PM

The spatial structure of cities, urban systems and regions has become a significant concept to be included in policies aimed to reach urban and regional competitiveness, cohesion and sustainability. Among others, the concept of polycentricity (and "polycentric urban region") has been particularly promoted in the European context. However, notwithstanding the relevance and the huge and increasing amount of research about



the pros and cons of polycentricity, the question whether polycentric regions would be more productive, inclusive and sustainable than other regions appears still far from being completely assessed and consolidated.

The aim of this piece of research is threefold. Firstly, the paper gives a framework to study the linkages between polycentricity and development under a multi-dimensional vision of development. A special attention is given to the definitions and subsequent measures of polycentric regions both from a morphological perspective (density, proximity, contiguity) and from a functional/relational (mobility flows, inter-firm linkages, complementarity of specializations), and the indicators that can be used to assess their development.

Secondly, the paper presents some results from the analysis of the Italian urban systems. The analysis is carried out at the intra-urban scale (polycentricity assessment within each FUA) and at the inter-urban scale (polycentricity between different FUAs within each region). This double level of analysis allows us to better understand how the concept of polycentric development may affect differently the dimensions of competitiveness, social cohesion and sustainability in a multi-scalar perspective.

The results of the paper allow for a critical analysis of the concept of urban and regional polycentricity and the methods to assess its effectiveness when planning and evaluating public policies, suggesting whether polycentricity is a result or the cause of a more balanced development.

### **The contribution of the sharing economy to the development of peripheral areas. The Airbnb case in the territory of the Veneto Dolomites. Some lessons from the BluTourism Project (ITA-CRO EU Programme)**

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S05-S1 Sharing economy and accommodation industry in urban and non urban environment  
IUT\_Room 402, August 28, 2019, 11:00 AM - 1:00 PM

In the last few years sharing economy and collaborative economy represents a new business opportunity for different economic sectors. Tourism is one of the most effected business sectors, especially regarding accommodation and mobility. Airbnb platform offers a great opportunity to visit a destination promoting a different style of experience it, developing the concept of “live like a local”, a now a day very popular way of travelling. If the impacts on urban level have been studied from many researchers, the effects on this phenomenon on a vast and mixed (urban and rural area). territory still need to be investigated.

The analysis of spatial autocorrelation is a fundamental tool for the understanding of all the physical as well as anthropological processes which naturally take place within the geographical space, and which cannot be studied independently from it. In this paper the spatial autocorrelation has been applied to a Airbnb lodging dataset regarding the tourism destination of Dolomiti, in Veneto region. The results represent clusters of lodgings that represent the characteristics of the accommodation system represented by the sharing economy. Furthermore, giving a management and governance perspective to those clusters is possible to identify niche of tourism offer, features of the destinations and measures to monitoring the performance of this large territory.

### **A prototype spatial microsimulation model for projecting the spatial distribution of urban ethnic groups**

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Projecting populations for small areas or small sub-groups of the population presents a particular challenge. The cohort-component model is insufficient for these purposes because of the lack of sufficient data on the past components of population change (births, deaths, migration). The complexity and difficulty of the projection task is compounded when projections of both small ethnic groups and small geographic areas are combined. However, an understanding of the future spatial diversity of neighbourhoods is desirable from both policy and planning standpoints.

New Zealand is incredibly ethnically diverse. In the 2013 Census, Statistics New Zealand recorded over 80 ethnic groups that each had at least 1,000 members, in a total population of around 4.2 million. Auckland, New Zealand's largest city, has a population of 1.4 million, and is considered to be a super-diverse city.

In this paper, we report on the development of a prototype spatial microsimulation model for projecting small area ethnic populations. The model operates at the 'area unit' level (approximately suburbs), and considers all 21 ethnic groups at Level 2 of New Zealand's standard classification of ethnicities.

The basic structure of the model includes modules that estimate: (1) locational transition probabilities (migration); and (2) inter-ethnic transition probabilities (inter-ethnic mobility). We report preliminary results from the prototype model, and derive some implications for future development of the model, as well as more general learnings that can be applied to the development of other similar models.

### **Mobility among older adults: Analysis of the Swedish region of Skåne**

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S26-S1 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 11:00 AM - 1:00 PM

Title: Mobility among older adults: Analysis of the Swedish region of Skåne

Society across the globe is rapidly ageing. Research on ageing and mobility suggests better synergies can exist between older people and the built environment. The ageing-in-place policy desire to keep older people in their own homes for as long as possible will place increased demands on the transport system as a key facilitator for access. The main goal of this study is therefore to study the distribution over the territory of older adults and their mobility patterns. The study area is the region of Skåne in the southern part of Sweden. Register-based longitudinal socio-demographic data such as income, education, place of residence from the Longitudinal integration database for health insurance and labour market studies (LISA) of individuals (older than 65 years old), as well as associated with the outcomes of previous travel surveys conducted in the region (accessibility and actual usage of the different travel modes), is expected to outline the indicative level of individual quality of life and mobility satisfaction.

The methods used in the paper will be based on quantitative methods applying spatial analysis. For the data collected within the study exploratory spatial data analysis (ESDA) is of particular importance. ESDA is a collection of techniques to describe and visualize spatial distributions, identify atypical locations or spatial outliers, discover patterns of spatial association, clusters or hot spots, and suggest spatial regimes or other

forms of spatial heterogeneity. ESDA can be used to map the location of older adults. As a second step spatial modeling techniques, such as regression analysis can also be implemented to explicitly incorporate the mechanisms underlying the spatial patterns found when mapping the older adults in Skåne.

### **Urban commons, Third places and collective actions: new challenges for tourism?**

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S20-S3 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Can broadband availability trigger adoption among micro-firms? Evidence from a rural infrastructure upgrade policy.**

Dr. Giulia Canzian<sup>1</sup>, Dr. Simone Schuller<sup>2</sup>, Dr. Davide Aloini<sup>3</sup>

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S03-S2 Engaging with the Digital World: the effects for society, places and individuals

IUT\_Room 404, August 29, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **School of urban and environmental regeneration - Pegaso Telematic University**

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S47-S1 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 11:00 AM - 1:00 PM

Modern times confront us with dramatic facts. Nature is rebelling against man, cities are imploding, and social degradation is reaching very high levels. Today urban regeneration is not enough, and deep regeneration is needed. Traffic congestion, pollution, construction speculation, energy waste, lack of security, waste, and the loss of the urban form, are among the most common problems of today's cities, and only the planning of targeted and wise procedures can allow us to solve these problems.

Training, research, and environment are the three key words through which the rebirth of the country and economic recovery can take place and are the three foundations on which Pegaso Telematic Universities' school of "Urban and Environmental Regeneration" are based. Pegaso Telematic University school of Urban and Environmental Regeneration was established with the aim of training scholars, specialists, professionals, and technical operators in the fields of project, planning, and management actions related to the intervention on cities, the environment, and the territory, with detailed attention to the issues of sustainability and regeneration.

The school offers a wide and diversified education to allow the acquisition and use of methods, techniques and instruments at different levels of competence and specialization, in relation to the specific needs of the

participants: High school graduates who are not yet enrolled in university courses; students already attending courses of study; under graduates; and graduate students.

The school is more than just an important educational opportunity: the teachers themselves - academics and professionals - together with the graduates from the Masters' program share a series of articulated skills that are made available to public institutions, starting with local institutions, in order to begin good regeneration practices, such as those that are already operational in some Italian communities.

Cosenza participates in a program that puts on the internet many specific experiences of regeneration, both already realized and in progress.

Crotone, where the school has a regeneration project in the area of ancient Crotone and disused industrial wastelands.

Montepulciano, where the school uses joint research with the local administration to revive tourism and limit ecological impact on the city.

In conclusion, the school website also has an important role by informing and training the population and serves as a venue that all interested parties can use to present their experiences, compare their observations, and exchange common know-how.

### **Resilience to Climate Change, in the "LIFE for Silver Coast" Project**

Dr. Antonino Capillo<sup>1</sup>, Dr. Alessandro Mancini<sup>1</sup>, Dr. Davide Giorgi<sup>1</sup>, Dr. Luigi Anniballi<sup>1</sup>, Prof. Fabio Massimo Frattale Mascioli<sup>1</sup>

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S47-S1 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 11:00 AM - 1:00 PM

Territorial and urban and regeneration is a recurrent theme, especially with regard to ecological transformation, as a reaction to climate change. Complex impacts on cities and rural areas ecosystems come from global warming therefore, effective counter-measures are necessary to address such issues. External stresses put great pressure on urban and suburban frameworks. Thus, Institutions, communities, private actors and even inhabitants are involved in hard challenges with the aim of improving the resilience of their own realities. In this work, a case study about climate change resilience for Tuscany Region (Italy) is presented. The "LIFE for Silver Coast" European Project realizes a Sustainable Mobility System in the famous area, known as the "Silver Coast". The Project will contribute to improve the territorial resilience, in different ways. Relying on Renewable Energy Sources (RESs) and thanks to the full electric vehicles of its fleet, the "LIFE for Silver Coast" will have a direct impact on climate change mitigation, because of significant CO2 emissions reduction. This result will represent a strong preventing countermove to climate changes. The control over the environmental effects is a very remarkable aspect. The monitoring activities (through several monitoring stations) and the Life Cycle Assessment (LCA) studies will contribute to generate consciousness about the system responses to climate change stresses, which is a crucial aspect for resilience improvement. This way, effective and efficient reactions will come from the ecosystem, thanks to an accurate action planning, based on acquired knowledge. Moreover, the "LIFE for Silver Coast" will increase resilience, making the social-economic system more stable. New business opportunities for stakeholders will lead to more jobs and local communities and Institutions will work together, in a synergic network. It will be possible to reach a common consciousness about the territorial ecosystem by exchanging information and solutions to continuously increase performance and benefits. This distributed knowledge and know-how will act as an elastic tissue for external excitations adsorption, in case of sporadic punctual failures. The inner innovation and synergic organization of the "LIFE for Silver Coast" Mobility System will be powerful enough to strengthen the resilience of the whole area of interest, not only with regard of climate change effects.

## **Patterns of geographical transformation in the biopharmaceutical emerging industry**

Ms Alessandra Caputo<sup>1</sup>, Dr Domenico Scalera<sup>2</sup>, Ms Emanuela Sirtori<sup>1</sup>

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G10-O3 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 11:00 AM - 1:00 PM

According to European Commission, Emerging Industries are industrial sectors in early stage development based on new products, services, technologies or ideas and characterised by high-growth rates and market potential. While scientific literature on the topic is still in its infancy, the European Commission is increasingly involved in launching initiatives at EU level to support clusters and individual firms in these industries. Consisting of restructured sectors that transform, evolve or merge into new industries, emerging industries usually result from inter-industry spillovers, entailing the transformation of traditional industries to respond to new market demand and exploit new key enabling technologies. The biopharmaceutical emerging industry is a momentous driver of scientific advancement. It stems from the mixing of the traditional pharmaceutical industry, dating back to the late 1800s, with the more recent biotechnology industry, developed on living cells and molecules, stemming from key innovations in the 1970s and 1980s. Whereas pharmaceutical companies are continuously developing biotech-related drugs, so that the distinction between 'pharma' companies and 'biotech' companies is progressively losing sense, biopharmaceutical companies are more and more interconnected with companies belonging to other industrial and technological areas favouring the rise of new industrial and technological trends. This paper aims at identifying geographical patterns of the biopharmaceutical industrial transformation trends at the scale of EU regions, over the time period from 2000 to 2016. Data on co-patenting, M&As, and JV&As are used as reliable proxies to capture cross-sectoral industrial transformation trends along the value chain of the industry. Combining together these three sets of data, the paper adopts a partially novel approach: a Network Analysis is performed at NUTS2 level to identify regional communities and geographical hotspots, by using data on the location of inventors and companies involved in the cross-sectoral operations. Preliminary results suggest that from 2000 to 2016, on the one hand, there has been an increase in biopharmaceutical cross-sectoral activities in Eastern Europe; on the other hand, some peripheral regions, such as those in Southern Italy, have lost their relevance. A further finding is the steady growth of cross-sectoral activities among Spanish regions. This paper contributes at the same time to both the literature on the geography of industrial activities, by employing a new method of analysis, and to the strand of literature focusing on emerging industries.

## **Evolution of urban hierarchies over time: The role of agglomeration economies**

Prof. Andrea Caragliu<sup>1</sup>, Prof. Roberta Capello<sup>1</sup>, Prof. Michiel Gerritse<sup>2</sup>

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G04-O8 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 9:00 AM - 10:30 AM

Central Place Theory (CPT) suggests that urban functions change along with their average size. Yet most empirical descriptions of the development of the urban landscape rely on measures of city size, assuming homogeneity of rank-specific economic activities. In this paper, we assume that different functions of cities may contribute unevenly to the long-run development of the city; and in particular that the most complex tasks have the strongest impact in the largest cities.

Theoretically, the number of intertemporal changes across the urban hierarchy distribution is expected to be relatively limited: it takes time for cities to adjust structural features such as the presence of high-level functions (Allens and Sanglier, 1979; Eeckhout, 2004; Parr, 2017). To address this limit, we use long-run National Statistical Institute (ISTAT) census data (1971-2011) to describe the evolution of Italian system of cities in terms of hierarchy and size.

The development of cities varies strongly with the type of function they specialize in. Specialization in the most complex functions, and in particular in management tasks, was associated with the strongest growth in terms of rank, population and employment. The growth effects of management tasks were particularly strong in large urban areas. By contrast, a specialization in tasks of lower complexity, such as agriculture or low-tech manufacturing turns out to be a better predictor of growth in smaller cities. This suggests that the importance of functional specialization in development is polarized: large city growth is primarily associated to its complex functions, but small city growth is associated to less complex functions.

We also document that the growth effects of complex functional specialization are highly localized.

Proximity to a city with large employment in complex production does not explain own city growth.

Similarly, we find growth effects of complex specialization in large and medium-sized cities with little access to nearby large cities, but we find no growth effects of complex specialization in smaller cities with large access to nearby large cities. This suggests that functional specialization works in the most central cities but cannot be “borrowed” by suburban or satellite cities.

### **Safe System Management Model: When One Size Fits None!**

**Mr Laurent Carnis**<sup>1</sup>

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S60-S1 Road Safety Management in Developing Countries: the case of Africa, IUT\_Room 108, August 29, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **UK regional urbanization patterns: Implications for inter-regional inequality**

**Dr. Andre Carrascal-incera**<sup>1</sup>, Dr. Diana Gutierrez-Posada<sup>1</sup>, Dr. Stephan Weiler<sup>2</sup>

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S34-S2 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 2:00 PM - 4:00 PM

UK is a country where more than 60% of the population live in regions with a density of 350 inhabitants per square kilometre or over. In the last 15 years (from 2001 to 2017) this urbanization process has continued, showing higher population growth rates for larger and denser agglomerations. Furthermore, in the last 5 years the speed of this process has increased considerably. In the period 2002-2012 the UK's urban population grew at an annual pace 1.32 times higher than the rural one, accelerating to a pace 2.20 times faster from 2012 through 2017.

There is a set of advantages for why people choose to move to larger cities already studied in the related literature such as higher expected wages, better searching and matching processes linked to a larger labour market, further access to amenities, among others. However, instead of evaluating the causes of urbanization, this paper assesses the main economic consequences of this demographic trend. In particular, we focus on the fact that urban and rural populations clearly differ in their lifestyles and, consequently, in their consumption patterns. According to the Living Costs and Food Survey data of 2017, while urban populations spend significantly more on Housing, Fuel and Power as well as in Clothing and Footwear; rural

households spend more on Transport. At the same time, urban regions depend on the primary products and energy produced in rural areas, while cities are mainly specialized in the provision of services. We can further control for differences in levels and sources of income, given divergences in rural and urban regions in terms of wage/salary, and asset-based income flows.

As a first approximation to this issue, we extend the SEIM-UK multiregional model, including different types of households and workers in a Miyazawa fashion, to account for the main employment, output, and value-added effects that urbanization process has on the different 37 UK regional economies.

### **Backtracking : When do Early Adopters Renounce to a Reform They Endorsed?**

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S50-S1 Fiscal decentralisation and multi-level governance

IUT\_Room 408, August 29, 2019, 2:00 PM - 4:00 PM

This paper studies the determinants of the decision to go back from an adopted reform. We use the quasi-natural experiment of the changes in the school week schedule in France. The government first offered the municipalities to implement quickly or further in time a reform of the school schedule, and then - 4 years later - offered the possibility to come back to the pre-reform schedule. Our results are based on a unique, very detailed, database of school-week schedules. They indicate that, even if there is a strong level of path dependency in policy decisions, political and budgetary variables are fundamental in explaining backtracking decisions.

### **Climate, urbanisation and conflict: The effects of weather shocks and floods on urban social disorder**

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S39-S2 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)

IUT\_Room 202, August 30, 2019, 9:00 AM - 10:30 AM

See extended abstract online.

### **Density, city structure, and pollution: a global view**

Dr. David Castells-Quintana<sup>1</sup>, Dr. Elisa Dienesch, Dr. Melanie Krause

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S56-S1 Transport, health and socio-territorial disparities, IUT\_Room 108, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Evacuation routes based on a building information modeling and multicriteria analysis**

Mr Ever Enrique Castillo Osorio<sup>1</sup>, Mr. Hwan-Hee Yoo<sup>1</sup>

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After the occurrence of a disaster in urban areas, many people can be trapped inside buildings such as houses, offices, etc. In case of this vulnerable people, they need support for a quick evacuation, especially in large new buildings that follow design trends too complex, and that at the time of panic could turn into a maze when people try to find the emergency exits nearest.

Nowadays, current design technologies such as Building Information Modeling (BIM) let us to know the functional distribution of the geometric context inside buildings. Data can be taken of the BIM for evacuation activities of people indoor buildings towards safe places. However, they must be integrated efficiently, in order to be feasible for such activities. On the other hand, the study of algorithms for generation of evacuation routes has had notable advances in the scientific field, currently applying criteria based on machine learning and artificial intelligence. These criteria allow algorithms to be more efficient under conditions of time and movement of people to secure areas.

This work aims to develop a method for the calculation of shorter evacuation routes inside buildings. The first step is to obtain the simplified geometry of the building taken from the BIM. The geometry includes walls, doors, corridors, ramps and others facilities. As a second step, the information of the geometry with its basic attribute table is transferred in a spatial database. Attribute tables are processed under the conception of Geographic Information System (GIS), that is, each table stores multiple characteristics of the elements. In the third step is applied the multicriteria analysis in the geometry. It considers the allocation of weights based on information of the design and structural context of the building. Finally, the fourth step is the calculation of the most feasible evacuation route under the concept of machine learning. This is calculated through an algorithm generated as a variant of the A\* algorithm, and the use of the Dijkstra's algorithm as additional criteria for obtaining the shortest route among various feasible routes.

The experimental results show the importance of the allocation of weights in the context of multicriteria analysis and the use of the algorithm that allows determining the safest evacuation routes for vulnerable people in search and rescue activities.

### **Factors Conditioning Commute Mode Choice in Altona-Hamburg**

Dr. Tuba Çekic<sup>1</sup>, Kimberly Tatum<sup>2</sup>, Prof. Dr. Joerg Knieling<sup>2</sup>

<sup>1</sup>Humboldt University, Berlin, Germany, <sup>2</sup>Hafencity University, Hamburg, Germany

G16-O2 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 9:00 AM - 10:30 AM

Although in recent years studies on sustainable mobility have received a significant attention of scholars from different disciplines like transport researchers, geographers, economist, urban planners, there is yet an urge for a better understanding of driving forces for a more sustainable mode choice in a variety of geographical settings.

This paper presents some results from the EU-Horizon 2020-funded Cities-4-People project. It investigates key factors influencing individual travel behaviors for different travel modes, by identifying user characteristics correlated to user preferences. Primary data was collected through online surveys to achieve this aim. Quantitative data were collected to analyze the socio-demographic characteristics of citizens moving daily in the city, their routes, mobility challenges, and satisfaction with travelling. This paper will present the findings of the survey conducted in Hamburg-Altona.

### **Regional Disparities and Political and Economic Integration in the EU**



Ms Silvia Cerisola<sup>1</sup>, Prof. Roberto Camagni<sup>1</sup>, Prof. Roberta Capello<sup>1</sup>, Prof. Ugo Fratesi<sup>1</sup>

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G06-O8 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 2:00 PM - 4:00 PM

A large number of works have explored the trend of disparities in the European Union in terms of convergence and in relation with cohesion policies, also focusing in some cases on the differences between inter-national and intra-national disparities (among others, Petrakos et al. 2005, Ezcurra and Pascual 2007, Geppert and Stephan 2008 and among the most recent contributions Butkus et al. 2018, Iammarino et al. 2018 and Rosés and Wolf 2018). However, most studies are completely inductive, focus on either EU15 countries or CEECs and usually involve relatively short and recent periods. In addition, a thorough investigation of the relationship between the political and economic integration in the EU and the historical evolution of disparities is missing in the existing literature.

This paper aims at filling these gaps through providing an interpretative framework that considers institutional changes at both the political and the economic level, thus taking into account the subsequent enlargements of the EU on the one hand and the birth of the single market and the introduction of the euro on the other. Exploiting regional data on GDP per capita from 1980 to 2015, the present work presents an in depth Europe wide (28 countries) long run analysis of the link between relevant institutional changes within the European integration process and the trend in disparities. Such trend is also explored at both the inter- and the intra-national levels, to be able to detect specific and potentially diverging behaviors between and within countries.

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#### **Plant closures in bad times: how quickly local economies recover?**

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G12-O1 Location of Economic Activity  
MILC\_Room 309, August 29, 2019, 2:00 PM - 4:00 PM

This paper studies the impact of the closure of a large plant on the local economy at a time of economic recession. In particular, we examine how the closure of large manufacturing plants in Italy between 2008 and 2013 impact on the local labor market system. We estimate the average treatment effect for the short as well as the medium period by adopting the nonparametric generalization of the difference-in-differences

estimator and the generalized synthetic control method. The main dataset comes from the Italian Statistical Register of Active Enterprises archive, which covers the universe of firms and employees of industry and services in Italy. As plant closures are usually accompanied by a bargaining process between the firm and trade unions mediated by the government, we complement our analysis by looking at the official reports of such bargaining processes and by taking such outcomes into account. This is a relevant topic given the large number of employees generally involved in manufacturing plant closures which consequently pushes governments to subsidize or bail out firms on the verge of bankruptcy. However, the literature on this topic is surprisingly scarce and additional compelling empirical analyses are needed to guide policymakers when making such important and costly decisions. Besides, we investigate the heterogeneity of the impact by industry and by geographical area.

### **Adoption to Innovation: The Case of Turkish Farmers from Antalya Agriculture Region**

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G07-O1 Innovation and Regional Development  
UdL\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

Innovation systems contributes positively to the agricultural systems as increase in productivity and quality on seed, pesticides, environmentally sensitive systems et.al. Even increase in technology stimulates innovation, adoption of users, in our case farmers in the agricultural production is also very important for the sustainability in innovative production. Adopting innovative methods in agriculture is especially very important for farmers and sectors when developing adaptation mechanisms to (environmental, economical) crisis. Turkey experienced a political crisis with Russia which both effected negatively the tourism sector in Antalya and agriculture sector in Kumluca in which the agricultural export was banned to Russia by Russian in 2015. In this study, we try to explore the adoption level of farmers to innovative systems in agriculture to recover and to adapt to crisis in production. We take Antalya, Kumluca agricultural sub-region, which is the leading agricultural center for glass houses in Turkey. By carrying out face-to-face interviews and surveys with farmers, we try to determine and discuss how farmers adop to innovation and develop innovation methods for crisis. Within this context, we employ both qualitative and quantitative research methods to analyse the survey findings on adoption to innovation after crisis.

### **Resilience To Natural Disasters: Evidence From Antalya's Agriculture Sector**

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S40-S2 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 2:00 PM - 4:00 PM

In recent years, number and severity of natural disasters have been increasing due to climate change. Natural disasters are one of the most important crises faced by farmers who produce greenhouse. These farmers are more vulnerable to unexpected natural disasters as they struggle to adapt to changing economic environments. Although farmers are prepared for such disasters as heavy rains and frosts, they are not prepared for such disasters as hoses, storms, hailstones, which are difficult to predict. Therefore, these disasters have devastating effects on both greenhouse and the products grown in these areas. In this context, there is a growing need for development policies to reduce the negative effects of natural disasters on farmers. It is very important to measure the ability of farmers to adapt to natural disasters and to determine the magnitude of damages and to develop solution and support strategies. In this study, the

ability and adaptability of farmers to natural disasters are investigated. Selected as study area where most greenhouse production in Turkey-Antalya and which has occurred many natural disasters in recent years. Face-to-face interviews and surveys with farmers will be carried out to determine how adaptive farmers develop adaptation methods for natural disasters. The data obtained from surveys and face-to-face interviews will be evaluated with various quantitative and qualitative analysis techniques. In line with the results, a discussion will be held to answer these questions in order to contribute to the strategies and policy production of local and public administration actors: How can farmers be more resilient to natural disasters and how can support mechanisms be developed for farmers after natural disasters?

### **Online Platform: Solution to Managing and Sustaining South Korea's Dispersed Inbound Education Aid**

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G02-YS1 Mobility and Digital Transformations  
IUT\_Room 207, August 29, 2019, 11:00 AM - 1:00 PM

South Korea's inbound education official development assistance (ODA) has been known to be spread across regions regardless of geographic proximity. This not only negatively impacts Korea's effectiveness to manage aid, but also to sustain aid long-term. As a follow-up study of Oh (2017), we reexamine Korea's aid pattern by making a comparison with those of the United Kingdom, Germany, and Australia, three other member countries of the Development Assistance Committee that allocates inbound education ODA. With the empirical results confirming Korea's lack of concentration in education ODA, we recommend establishing satellite campuses as a more viable, operative solution than the previously suggested solution of establishing a specialized agency focusing on scholarship programs. As validated by Nagoya University's Asian Satellite Campuses Institute (ASCI), transferring much of work to the online platform reduces time and financial costs. Furthermore, satellite campuses are expected to facilitate various means of partnerships among aid donor countries that are implementing similar programs. International collaborative efforts could help improve the quality of Korea's inbound education and play an important role in attracting bright prospective students. Thus, Korea could utilize online education platform to overcome severe geographic obstacles in distance education and increase effectiveness of its inbound education ODA.

### **Impact of Housing Program on Social Conditions: Evidence from Minha Casa Minha Vida Program Lotteries in Brazil**

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G13-O2 Real Estate and Housing Markets  
UdL\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

For a long time, housing policies have been instituted in an effort to improve the quality of life of the poorest citizens. In developing countries, urbanization has increased the number of slums, supporting the creation of housing programs like the Minha Casa Minha Vida (MCMV) program, launched in 2009 in Brazil. The program was intended to provide better housing conditions for low-income families. To reduce the construction costs, however, the houses were built in areas outside of the cities, far from the business and employment centers. In this paper, we took advantage of a random selection of families in Rio de Janeiro (one of the most important cities in Brazil) and São José do Rio Preto (a big city in São Paulo state, Brazil) to evaluate the impact of the Minha Casa Minha Vida program on social conditions. By combining two administrative databases, we were able to measure changes in the labor market for both groups, those

selected and not selected (for the program). The first conclusion was that even with a random-selection criterion like the lottery, the program did a bad job selecting the beneficiary families, benefiting only the ones least linked to the labor market. Individuals with better job conditions chose to remain in their current house, regardless of its structural condition or the characteristics of the neighborhood. To the beneficiary, the program negatively affected the labor supply, reducing the likelihood that the beneficiary would be able to be formally employed. Also, the program increased the proportion of families receiving income subsidies from the government. This work is one of the first articles to analyze microdata from MCMV, providing an essential measure of the program's impact.

### **Non taxation of imputed rent: a gift to scrooge**

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S38-S2 Housing Markets: information, taxes, prices  
IUT\_Room 108, August 28, 2019, 2:00 PM - 4:00 PM

Homeowners save an imputed rent which is usually exempted from income taxation. This paper exploits the fiscal simulator developed by (Landais et al, 2011) to estimate this tax saving and its distribution between households in France. We show that net imputed rents represent 7% of the national net income and that their non taxation is a hidden fiscal spending estimated between 9 and 11 billions of euros. This is thus the major public spending to support homeownership while it mostly benefit to the wealthiest and the oldest age groups. Reestablishing imputed rent taxation might be an interesting way to cope with increasing capital inequalities that has been fostered by the recent increase in housing prices.

### **A study on Development Strategy in the Traditional Area of Thao**

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G04-O2 Regional and Urban Development, IUT\_Room 207  
August 28, 2019, 11:00 AM - 1:00 PM

The land movement of Taiwan indigenous people lasted for 30 years. Although the traditional areas and the rights to land are defined in the Indigenous People Basic Law. The issue of land has never been improved. The Spatial Planning Act adopted in 2016 will also set up the use zones according to demand. The goal is the sustainable development of cultural and tourism resources. In addition to competition, there is also a cooperative relationship. Land use and urban development must respect the traditional culture of indigenous peoples as a planning trend. But Taiwan often ignores the needs of groups when promoting development plan in their area. Caused the resistance of the tribes and the plan could not be implemented smoothly. In the face of public interests such as tourism and urban development, how to preserve ethnic culture and maintain the ecological environment is a task that must be considered now. Based on literature review, Taiwan indigenous research is focused on policy. This study will focus on the relationship between cultural and ecological resources and regional development in traditional area. Research through case studies to understand the land development difficulties and analyze the main impact issues to figure out the key influencing factors. Then combine the preservation methods of cultural landscape to propose the development strategy and helpful the future project. Hope to achieve sustainable development goals for cultural and environmental resources.

Keywords : indigenous people、 social impacts、 sustainable development、 cultural landscape

\* The Thao is one of the Taiwan indigenous tribes. They lives in Yuchih Township and Shueili Township in Nantou County with a total of about 648 people.

Source:<https://www.apc.gov.tw/portal/docList.html?CID=74A8B8BCC36345DA>

### **Trade, Emissions, and Regulatory (Non-)Compliance: Implications for Firm Heterogeneity**

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G19-O2 Health and Environmental Issues

MILC\_Room 409, August 29, 2019, 4:30 PM - 6:00 PM

This paper provides implications of firm heterogeneity for global pollution and trade liberalization in a model of endogenous markups and non-compliance with environmental regulations. We show that firms with heterogeneous productivities respond differently to a uniform environmental regulation, which changes the market competition structure within a country and across countries, and disentangles the interaction effects of environmental regulations and trade liberalization. In autarky, efficient firms are favored by environmental regulations but they may produce more emissions via the non-compliance to escape the regulation and maintain their competitiveness. In a symmetric two-country open economy, trade liberalization can break the output-environment trade-off, not only increasing the world-wide output but also decreasing global pollution emissions. Under asymmetric environmental regulations, a unilateral increase in the emission tax decreases the average productivity in this country if openness to trade is substantially high, which contrasts with the effect under autarky whereby the average productivity increases with the emission tax. Our welfare analysis shows that there exists a U-shaped relationship between the optimal emission tax and openness to trade regardless of whether under tax harmonization or tax competition. Trade liberalization unambiguously decreases global pollution emissions under tax harmonization but it may increase global pollution emissions under tax competition.

### **The impacts of global liquidity on international housing prices**

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G13-O2 Real Estate and Housing Markets

UdL\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

The aim of this paper is to investigate how global liquidity affects international housing prices around the world. Being based on the model of Cesa-Bianchi et al.(2015), panel cointegration and fully modified OLS of Pedroni (2001, 2004) are executed to examine the long run equilibrium between global liquidity and housing prices, and the generalized impulse response approach(GIRF) is applied to analysis the relative strengths and the transmission mechanisms between the variables. The panel data sample covers 36 countries form 2000Q1 to 2017Q4, and the empirical results are shown as the following. First, the FMOLS estimating results of the full sample show that the effect of global liquidity on housing prices is significantly positive, and this effect is higher in the developing economies than in the developed economies. Second, consumption can cause a higher effect on housing prices in the developing economies, but income can significantly affect housing prices only in the developed economies. Third, the results of GIRF show that the short-run impact of global liquidity on housing prices is significant only in the developing economies. As to the short-run impacts of consumption and income on housing prices, the impacts in the developing

economies are higher and last for a shorter period, and the developed economies have lower but longer-period impacts.

### **Digital Divides in the Romanian Economy and Society: Analysis at Regional Level in the EU Integration Context**

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G04-O7 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 9:00 AM - 10:30 AM

The paramount importance of the ICT sector for the EU countries and regions economies and societies remained, on the whole, relatively stable over the last decade, but significant gaps persisted especially at regional and sub-regional level. Romania was no exception to the rule, so that despite the increasing overall share of the ICT in the national GDP, the regional and sub-regional differences maintained; however, with quite a wide range of dynamics and structural changes for different indicators.

Based on a very large array of EU and national indicators used to describe the place and role of ICT in economy and society at regional and, if possible, sub-regional levels, the paper presents a broader analysis of the evolutions and mutations of many types of ICT gaps and divides registered in the Romanian regions after the country's accession to the EU. Whenever possible, different levels of analysis are used in parallel: individuals, households, companies, regional economies, and relevant comparisons with situations in other EU regions are provided. Conclusions and some policy recommendations are formulated, with a focus on the worrisome rifts between the levels of ICT usage for individual, societal and company purposes and relationships and the levels of usage for relations between the individuals and companies and the government and public administration authorities.

### **Building of the Birth Rate Boosting Policy for Overcoming Population Cliff**

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G06-O3 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 9:00 AM - 10:30 AM

South Korea has complemented the compressive economic development since 1960s. It is one of the best success stories in the world in terms of economic and political developments. However she also experienced extremely rapid changes of population structure. South Korea hit the lowest-ever fertility rate of 1.05 births per woman in 2017. To maintain its population level stable, she needs 2.1 baby births per woman. The government statistics shows that only 357,000 babies were born last year. The average birth rate per woman is due to be as low as 0.96 this year even if Korea has made an effort to boost the birth rate (Korean Statistics Office, 2018). Korea is currently the fastest-aging developed economy in the world and has a population structure composed of more elderly people than young people but the level of population ageing differs from region to region. Rural areas already became the super ageing society. And then she has a hard time which is the low birth rate and population ageing in terms of demographic structure (Woo, 2018). The goal of this study is to promote the birth rate in order to solve the overall population cliff and to decrease the population ageing speed. This study examines the fertility boosting policies in terms of social, economic and regional aspects in order to overcome very low fertility (McDonald, 2008). It figures out the factors which influence the birth rate and suggest the better policy alternatives to reverse the trend of this low fertility rate.

## **An algorithmic approach for simulating regional economic development: the nexus of complexity science and regional science**

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S28-S1 Applying a Complex Adaptive Systems Approach to Regional Economics: big data, network analysis, and computational theory  
MILC\_Room 310, August 28, 2019, 4:30 PM - 6:00 PM

At the city and regional level, local economies can be viewed as “ecosystems” where a plethora of agendas act together to shape the overall outcome of the system as a whole. This paper focuses on a key characteristic of regional ecosystems, namely the interrelatedness of its different elements. Concentrating on industrial structure as one aspect of the ecosystem of cities, I utilize data on new firm formation and industrial composition for US cities at detailed industry levels to construct an underlying industry network where the nodes are industries, and the links are tendencies for coagglomeration using the Ellison-Glaeser index. The result is an “industry space” where industries are connected to each other within a network of relatedness. Then, shifts in any particular city’s industrial structure over time are simulated, utilizing an optimization scheme based on The Method of Reflections (Hidalgo and Hausmann 2009). The result is a detailed pathway for economic development that maximizes the development potential of the city, given all possibilities.

Ultimately, this study attempts to answer two questions:

- 1) Do more successful regions show different patterns of industrial change compared to those that are less successful?
- 3) How should regions faced with different circumstances promote industrial change such that their economic development capacities are maximized?

## **On The Characteristics and Development Strategies of the High-Speed Railway Complex Transit Center Project in High-Speed Railway Station**

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G16-O4 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 4:30 PM - 6:00 PM

With the advent of the high-speed rail city era, the future economic development speed and scale of KTX(Korea Train eXpress) bullet train are moving around. Currently, the high-speed railway station is seeking three-dimensional use of historical space and linkage with its surroundings in terms of efficient use of the national territory and development of potential. In addition, it is a traffic defect in which passengers and cargo are transported, and it is being combined into various functions such as housing, commerce, and business.

The purpose of this study is to examine the basic theory of the Korea High Speed Rail Transfer Center, and to comprehensively review the problems in the development process, development procedures and development effects. Based on this, the efficient and effective development direction of the high-speed rail composite transfer center is presented and the implications are derived.

The contents of the study understand the basic concept of the high-speed rail transit transfer center, and analyze the present state of railway facilities along with the review of the railway transportation plan, such as the national rail network construction plan. With spatial representation and accessibility of data in mind, Yongsan Station and Dongdaegu Station are limited to case paper. The research method establishes theoretical background, including the development characteristics of the high-speed rail composite transfer center through prior research and literature review. Practical analyses such as railway facilities, transportation systems and economic and social effects are carried out through the preliminary analysis stages, including a comprehensive review of related plans. Through an intensive analysis of the institutional characteristics of the high-speed rail transit center, an in-depth analysis is conducted, including the direction of development and the elicitation of implications.

The research is expected to be used as a reference for the future direction of promoting high-speed railway stations and the regional power areas as the high-speed rail city era is set to take full swing. However, because the unique regional, environmental, and social characteristics of the high-speed railway station differ, there are limitations in drawing up specific development strategies or presenting general results.

### **Combinations of the Variables Affecting ODA Effectiveness in OECD Countries: Application of QCA**

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G07-R1 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM

Since Korea became a member of OECD DAC member countries in 2010, Korean government has been increasing the size of ODA over time to a significant degree to which it has reached 0.16% of GNI (Gross National Income) and three thousand billion Korean won (Korean currency), which is equivalent to approximately 3 billion US dollars as of 2018. It is expected that this tendency of increase in ODA size also continues to go on worldwide as OECD DAC has highly recommended each DAC member country to increase its ODA size to 0.7 % of GNI, respectively. Against this background, based on the assumption that ODA projects should be effectively formulated, implemented, monitored and evaluated from the beginning to end, this paper attempts to discover the combinations of the configurations associated with the effective management of ODA projects in OECD DAC member countries, with special reference to policy-related variables, and to put forward policy implications for Korea to be able to ameliorate the existing ODA policy governance. The research methodology employed in this analysis is QCA (Qualitative Comparative Analysis). One of the main findings in this analysis is that ODA projects can be effectively implemented in a situation where high level of efficiency in government spending, a high level of transparency in policy-making system, and low-level of public funds diversion are ensured.

### **Assessment of Green City Strategies on Flood and Heat island Resilience - A Case Study of Kaohsiung, Taiwan**

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G24-O1 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 11:00 AM - 1:00 PM

Urbanization results in higher building density, and less amount of permeable pavement in urban area that increase urban runoff and cause flood disasters. Besides, the increasing emission of carbon dioxide by urban traffics also leads to urban heat-island (UHI) effect. The losing resilience of floods and heat of cities could be



a consequence of natural-built environment relationship degradation. Green strategies of green urbanism focuses on healing the relationship by more green plants, more green buildings, and green infrastructure. The paper aims a quantitative framework of green city strategies assessment on the capacity of flood and heat island resilience that the scale and the space are explicitly specified.

To this end, Kaohsiung is selected for the empirical study because of frequent flood disasters in recent years and UHI effect of 4 °C higher than its neighborhood cities in average. The assessment of flood resilience capacity is based on a quasi-two-dimensional diffuse flow simulation model to obtain the information of flood area, flood water volumes and flood hydrograph, with and without green strategies. Regarding to UHI effect, this study quantifies green intensity index and main factors of urban heat island in Kaohsiung to confirm a regression graph. Finally, methods of point pattern analysis, such as spatial autocorrelation/kernel density analysis, will be evaluated to reveal the spatial patterns of flood and heat island resilience to make the spatial perspective of scale and location easy to be understood by visualization.

### **What is the return on investing European Regional Development and Cohesion Funds? Difference-in-differences estimator approach**

Prof. Dr. Diana Cibulskiene<sup>1</sup>, Assoc. Prof. Dr. Mindaugas Butkus<sup>1</sup>, Dr. Alma Maciulyte-Sniukiene<sup>1</sup>, Assoc. Prof. Dr. Kristina Matuzeviciute<sup>1</sup>

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G04-O13 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 2:00 PM - 4:00 PM

One of the ultimate goals of investing EU structural funds is to strengthen economic and social cohesion. Aiming to formulate and/or adjust funds allocation policy, it is crucial to find out whether previous investments had a positive return, i.e. the goal to diminish disparities has been achieved. This paper aims to supplement the empirical evidence of previous contributions in a few ways: (i) the analysis is based on NUTS 3 level data and different expenditure categories of various EU structural funds; (ii) the identification strategy relies on difference-in-differences estimator; and (iii) the effect is estimated on the dynamics of regional GDP disparities rather than on regional GDP growth. The research results revealed that all investments combined did not contribute to the reduction of regional disparities. The analysis of separate fund shows ambiguous results. The analysis of single expenditure category suggests that investment in productive environment and basic infrastructure had positive return and investing in human resources did not have any effect at all.

### **Changes in the Provision of Dental Medical Services in Romania**

Ms Elena Cigu<sup>1</sup>, Mr Andor Toni Cigu<sup>2</sup>

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G19-O3 Health and Environmental Issues  
MILC\_Room 409, August 30, 2019, 11:00 AM - 1:00 PM

Medical services show permanent changes as a result of multi-factor intervention, of which we highlight technology evolution, health policies, demographic changes, etc. In the case of Romania, the health policies and hence the quality and quantity of medical services recorded major changes during 1990-2019. One of the medical services with a very strong evolution is dental medicine, because there is a greater recognition that oral health has important spillover effects on physical health more generally. Also, there are both economic and medical developments of good oral health. We firstly aim to provide the context and the development of health legal framework and the state of Oral Health System and the provision of dental

medical services in Romanian regions. Then, we develop a regression model for evaluating the relationship between oral health policies and the level of socio-economic development and apply it for the case of regions of Romania over the period of time 2004-2015. Complete answers on the impact of oral health policies are not likely to be certain but, overall, the evidence strongly supports that well defined and targeted oral health policies may help in promoting socio-economic development, but there is still need to take a few more steps to define the best legal framework for Romania.

### **Fiscal Decentralization and Growth. A Case Study for the CEE-11 Countries**

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<sup>1</sup>*Alexandru Ioan Cuza University Of Iasi, Iasi, Romania*

S26-S1 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 11:00 AM - 1:00 PM

The governments of each member country of the European Union have identified different ways to design fiscal policies and to implement fiscal decentralization process. The economic theory suggests different ways through which the devolution of powers/competences and resources to subnational governments could be linked to economic growth. The goal of this paper is twofold, theoretical and empirical. Firstly, at theoretical level, we intend to highlight the state of knowledge on the relationship between fiscal decentralization and economic growth. Secondly, by reporting to the results of previous studies, we intend to develop an econometric model for evaluating the relationship between fiscal decentralization and economic growth and apply it for the case of the CEE-11 countries over the period of time 2000-2015. By choosing different indicators of fiscal decentralization, we find mixed evidence relating the relationship between fiscal decentralization and economic growth, most of them leading to a raise of economic growth. . In our opinion this paper can be considered a useful viewpoint in understanding the complexity of fiscal decentralization and the study of inequalities, being an addition to the existing literature on the field.

### **Survival of small and medium-sized retail businesses facing retail chains in non-metropolitan areas**

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S49-S1 The retail chains development and changes in service patterns in small towns and rural areas

IUT\_Room 203, August 30, 2019, 2:00 PM - 4:00 PM

Since the end of the 1990s, new consumption habits due to consumer society, time constraints and consumers who live in the present have contributed to the emergence of new forms of retail businesses: the power centers. These retail chains are characterized by a spatial concentration of retailers in large surface areas (100 000 ft<sup>2</sup> each) and large parking lots. Such power centers usually revolve around one or two big retail chains, such as Walmart, Costco or Ikea.

It is well known that the retail business location decision and individual performances are influenced by the location of competitors (Nilsson and Smirnov, 2017; Carlena Cochi, 2013). For most small retailers, the arrival of power centers leads to a reduction of customers, decline in sales, and sometimes closure of the business (Hicks, 2008). For others, however, this is viewed as an opportunity because of the positive effects of the agglomeration (Hicks 2007, Evans 2011).

The aim of this paper is to identify the determinants of small and medium-sized retail businesses' survival when a power center appears in a remote area. More specifically, in this context, the paper seeks to test whether the resilience of small and medium-sized retail businesses can be attributed to the local characteristics, such as the relative spatial concentration of economic activities and/or businesses' individual's characteristics.

To this end, the analysis of the time (in years) that an event takes to happen (closure) is conducted through a Cox proportional hazards model. The model estimates the probability of survival of new retail businesses appearing between 1995 and 2016 in six non-metropolitan cities in Quebec (Canada), including three cities relatively close to large national urban centers and three other isolated cities. Using spatial micro data, we build a spatial concentration index through a Distance Based Methodology (DBM) as proposed by Dubé and Brunelle (2014). These indicators describe the local economic landscape: specialization, diversification, competition and complementarity. Individual characteristics are controlled by initial size, sub-economic sectors and the number of establishments.

The results show that individual characteristics, especially business size, are factors of resilience in the face of retail chains. The fashion subsector is negatively impacted by the arrival of a Walmart store. As for local characteristics, the proximity of small retailers in the same sector or complementary sectors diminishes their survival. Furthermore, small retail business resilience is sensitive to the distance to urban centers and the city size among non-metropolitan regions.

## **Coworking in the Digital Economy: Context, Motivations, and Outcomes**

**Prof. Nick Clifton<sup>1</sup>**

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S08-S1 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 11:00 AM - 1:00 PM

The number of self-employed, freelancers, and remote workers has risen steadily; simultaneously a range of collaborative shared workspaces - coworking spaces – has emerged in which these individuals 'work alone together'.

The broader context for these developments is the growth of the knowledge economy and the role of ICT. An upward trend in remote working would apparently suggest at least some truth in the 'death of distance' hypothesis (Cairncross, 2001); however, irrefutable evidence also exists that the rise of the globalised knowledge economy has seen an accelerated spatial polarisation (Ehrenhalt, 2012) of outcomes and apparently ever-increasing forces of agglomeration. McCann (2008) makes convincing arguments that rapid improvements in ICT have increased the quantity, variety and complexity of knowledge involved in economic activity, in turn increasing what he terms the spatial transaction costs involved in its use. As much of this knowledge is non-routine or tacit, high levels of face-to-face interaction are thus required to maintain effective exchange relationships.

However, existing research is skewed towards the social or community aspects of coworking, treated largely as an end in itself. We argue that this represents only a partial account of coworking. Thus in addressing the basic research question as to why people who no longer need to 'huddle' apparently choose to do so (for at least part of their working lives), we delineate inputs (social and environmental factors), outputs (community, interaction and knowledge sharing) and outcomes (innovation, growth) of coworking and investigate these quantitatively for the first time. Data was collected via a questionnaire survey of coworkers across two coworking spaces in South East Wales, UK.

In general, results confirm the role of coworking spaces as a context for the exchange of tacit knowledge, facilitated by opportunities for face to face interaction. In turn, the evidence suggests that these

interactions are mainly, but not exclusively, taking place on an informal or untraded interdependency basis for knowledge sharing. Thus, there is a clear indication from the data that improved innovation and income are then forthcoming- despite these typically not being explicit motivations for the coworkers. Finally we discuss potential limitations of the study, possible policy implications – particularly regarding regions which are more peripheral and lack strong entrepreneurial ecosystems. We also consider potentially fruitful areas of further research such counterfactual surveys of those presently not using coworking spaces, multivariate and longitudinal methods to further explore the causal relationships between inputs, outputs and outcomes.

## **From Interregional Knowledge Networks to Systems**

**Prof. Nick Clifton**<sup>1</sup>, Dr Adi Weidenfeld<sup>2</sup>, Dr Teemu Makkonen<sup>3</sup>

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S13-S1 Mainstreaming Smart Specialisation across European Union policies: challenges, opportunities and tools

UdL\_Room 106, August 30, 2019, 2:00 PM - 4:00 PM

The need to collect systematic evidence about how non-local knowledge influences regional diversification requires a multi-scalar perspective. This is particularly relevant to Smart Specialisation, which offers enhanced opportunities for regions to “bypass” the national state to affect direct collaboration with regions from other nations.

Whereas interregional networks of individual actors have recently received growing attention, networks in terms of collective regional groups of organisations interacting with their counterparts remain largely ignored. This is surprising given the Smart Specialisation’s ‘outward looking’ approach, particularly in less advanced regions. This conceptual paper explores the rationales and dimensions underpinning interregional knowledge exchange, networks and systems including a definitional clarity, a typology of networks and the impacts of different types of proximity. The paper also introduces the concept of inter-regional innovation systems and sets a new agenda for studying their structure, formation and evolutionary path.

This paper aims to address the gap in the literature by exploring the multiple rationales and dimensions underpinning interregional knowledge transfer through formal and informal networks and systems. It argues that networks play an important role in the creation of learning regions and in the creation of RIS. Whereas a region’s present connections provides only a snapshot, there is a need to examine how they evolve along time from an evolutionary perspective. For this purpose, the paper begins by suggesting a definitional clarity in the concepts of networks and systems and identifying the differences between them in the regional context. Although exact definitions remain problematic, policy-networking bodies are instrumental (as a necessary but not sufficient condition) in the development from a network to a system. Second, it identifies five distinct types of interregional knowledge exchange networks, including regions from the same country or different countries. Third, it explores the barriers and incentives for interregional knowledge flows particularly through different proximity types including cognitive, institutional and spatial. These may vary depending on the regions in question, implying a variety of potential outcomes. Fourth, it introduces the concept of Inter-Regional Innovation Systems (IRIS) and discusses the understudied formation and evolution of such innovation systems. In this context it is suggested that the degree of interdependency (i.e. externality) between actors defines a system- or at least a network with systematic traits. The paper sets up a research agenda for future studies by providing a conceptual framework for the study of interregional knowledge transfer and innovation with an emphasis on less advanced regions.

## Location determinants of Eco-Innovative firms: Evidence for French Departments

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S61-S1 Energy Transition and Eco Innovation  
MILC\_Room 409, August 28, 2019, 4:30 PM - 6:00 PM

This paper analyses the spatial distribution and the location determinants of eco-innovative firms in France. The analysis is based on a dataset covering all French Provinces (départements) obtained after merging firm-level microdata on the location of new firms from DIANE Mercantil Register (Bureau van Dijk) and patent information from the REGPAT database for the period 2003 and 2015. This paper departs from previous contributions in two main ways. First, it introduces spatial econometrics techniques to capture any potential spatial spillovers arising from the location of these firms for the first time in this literature. And second, it focuses on the French case which is of special interest in view of relevance of regional eco-innovation policies and the fact that despite an important weight of Paris region, there is a relatively well-balanced territorial distribution of eco-innovative activity. We use Count Data Models (CDM) to show that location determinants may vary according to the intensity of previous eco-innovations, the technological composition of local stocks and that the characteristics of the regional innovation system play an important role for the location of eco-innovative firms. Moreover, when accounting for neighbouring effects, we find that previous eco-innovative firm entries in neighbouring regions positively influence the entry of new eco-innovative firms on the department of reference.

## Sustainable development. A Comparative Analysis of the Performance of French departments

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S61-S1 Energy Transition and Eco Innovation  
MILC\_Room 409, August 28, 2019, 4:30 PM - 6:00 PM

Since the Brundtland report (1987) and the adoption of Agenda 21 at the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, governments committed to developing strategies to achieve sustainable development. To address the challenges of the threat of ecosystems degradation and global warming, a radical technological transformation of the global energy system is required. Therefore, governments need to encourage concerted and coordinated efforts to integrate global ecological concerns into local and national policies (United Nations, 2008, UNEP, 2014). A whole set of initiatives are emerging locally to respond to these new challenges.

In France, the Grenelle Acts I and II have given local authorities a major role in setting up the energy transition by extending their field expertise in the field of energy policy, by enabling them to develop actions in favour of energy management and to intervene in the field of the production of renewable energy sources. To carry out its missions, the region has the Regional Plan of Climate, Air and Energy (SRCAE), created by the law 2010-788 of July 12, 2010, called "Grenelle Act II". The SRCAE must define, from an inventory, objectives and orientations for the horizons of 2020 and 2050 (De Charentenay et al., 2012). Regional strategies are defined and implemented at the local level by the local authorities which are strongly mobilized. In addition to the environmental issue, the creation of new sustainable and territorialized energy sectors is likely to generate local jobs that cannot be relocated.

The paper proposes an evaluation framework for comparing sustainable development in France at the departmental level, taking into account six dimensions: environment and natural resources, energy transition, territories and sustainable mobility, economic dynamism, social cohesion and solidarity, and

governance. Considering a wide range of variables, we build aggregate composite indices for each dimension of sustainable development (OECD, 2008, O'Connor et al., 2008, Mazziotta et Pareto, 2013, 2017). Then a cluster analysis is used to classify French departments and to explore similarities and dissimilarities with respect to the six components of the sustainable development. Results make it possible to identify the strengths and weaknesses of the departments as well as the levers and obstacles to sustainable development. Spatial patterns may also eventually emerge. Finally, recommendations can be drawn for public policies.

### **The determinants of warehouses' locations in France: An empirical test based on spatial economics**

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S30-S1 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

This article aims at understanding the determinants of warehouses' locations in France, starting from a simple model inspired by urban economics.

We specify a "total logistics costs" (TLC) function which makes depend on the distance to the agglomeration center some of the main inputs required to operate warehouses, especially through spatial variations in land prices, employees' wages and induced commercial transport costs. Within this theoretical framework, logistics operators select their locations in order to minimize the TLC, hence implying that the chosen ("optimal") distance to the city center depends on the warehouse's size, on the workforce's volume and on the number of vehicles arriving at/leaving the warehouse. The relative influence of these forces additionally varies w.r.t. the shape of the urban agglomeration (monocentric or not), but also w.r.t. the functional specialization of warehouses (dedicated towards local vs. "foreign" markets).

This structural model of warehouses' location choices is then empirically tested on French data. The main dataset used for the econometric analysis comes from the "Enquête Entrepôts". Collected in 2011 by the French Ministry of Environment, this survey provides us with a lot of information for a sample of 1,500 warehouses approximately: buildings' area and municipal location, number of (full-time/temporary) workers, types and volumes of commodities stocked in warehouses, the corresponding traffic of trucks/vans, the logistics services offered in warehouses, the main origins and destinations of the commodities, some technical characteristics of the warehouses (connection to railway or maritime terminals, temperature controlled buildings, ...). This original dataset is crossed with other information on urban area sizes and types (originating from the French National Institute for Statistics), but also with accessibility indexes and other external data.

Exploratory estimates are in progress.

### **The Wealth of Cities**

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G08-O7 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 9:00 AM - 10:30 AM

Modern trade models (Arkolakis et al, 2012) provide micro-foundations for the empirical observation that city size and productivity are positively related. Agglomeration benefits in these models arise from a love of variety in consumption, or from a value of specialisation in production, with larger markets allowing a larger suite of consumption goods or intermediate inputs. The effective returns to scale, and hence size of agglomeration effects, in these models can be calibrated using spatial price differences (Simonovska & Waugh, 2014) or macroeconomic correlations across the business cycle (Backus et al, 1994). Typically however, these models have a constant value for the parameter (substitution elasticity) thus estimated, so that a doubling of city size always has the same proportionate benefit to average productivity whether it is a large city or a small city that we are doubling.

Perhaps a more reasonable hypothesis is that this substitution elasticity is itself a function of scale. Following Zhelobodko et al (2012), we consider a variable elasticity of substitution version of the Krugman (1980) model, and calibrate it to the more than 300 Metropolitan Statistical Areas (MSAs) in the US. Using US data controls for institutional differences across units of observation. We control for observed differences in human capital levels, and assume that trade flows between cities are given by a gravity relationship (using a measure of “distance” proportional to travel time from google maps). MSAs can have a large economic size either by being large, or by being well connected. What ‘substitution elasticity - economic size’ relationship allows the model to best fit the observed pattern of economic size and per capita output without relying on an unobserved TFP residual?

We find evidence that supports what Zhelobodko et al (2012) refer to as “increasing relative love for variety (RLV)”. Increasing RLV generates pro-competitive effects as market size increases which means that agglomeration benefits are exhausted as cities become very large. This has important policy implications as it suggests that focusing intervention on creating scale for small populations is potentially more valuable than further investments to increase market size in the largest population centres.

### **Urban resilience challenges: patterns resulted from an empirical investigation**

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S40-S4 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 29, 2019, 9:00 AM - 10:30 AM

See extended abstract online.

### **Spatial Productivity Analysis in Territorial Impact Assessments**

Dr Andrea Conte

S69-S1 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 28, 2019, 11:00 AM - 1:00 PM

RHOMOLO is the spatial computable general equilibrium model of the European Commission focusing on EU regions. It has been developed and maintained by the Regional Economic Modelling team at the Joint Research Centre (JRC) in Seville in cooperation with Directorate-General for Regional and Urban Policy (DG REGIO). It is used for policy impact assessment and provides sector-, region- and time-specific simulations to support the EU policy on investments as well as reforms covering a wide array of objectives.

RHOMOLO covers all the EU NUTS 2 regions, disaggregating their economies into ten NACE rev.2 sectors, with a constant effort on data updating and maintenance. All the monetary transactions in the economy are included in the model as a result of agents making optimising decision. Goods and services are consumed by households, governments, and firms, and are produced in markets that can be either perfectly or imperfectly competitive. Spatial interactions between regions are captured through costly trade matrices of goods and services and factor mobility through migration and investments. This makes RHOMOLO particularly well-suited for analysing policies related to investments in human capital, transport infrastructure, and innovation.

### **Interpreting Leontief Multipliers using Exterior Products**

**Dr. Stephen Cooke<sup>1</sup>**

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S53-S1 Breaking out of the Bubble - Teaching and Dissemination of Regional Science  
UdL\_Room 105, August 30, 2019, 2:00 PM - 4:00 PM

Type I output multipliers summarize the results of an inverse matrix. An inverse matrix transforms of the present into the past. An economic explanation of an output multiplier as “the thing that takes you back” is difficult. A complete economic interpretation must explain the economics within the mathematics within the inverse matrix.

At a minimum, the interpretation must clarify the roles of output (Q), exports (X), imports (M) and the interplay of domestic intermediate inputs (Z) in ways that are both internally consistent and externally correspondent. These criteria will require going beyond multipliers as an inverse matrix or a power series algorithm of round-by-rounds mapped into vague notions of “direct and indirect effects.” Rather, it is shown that within the mathematical complexity a sector’s output multiplier “simply” equals one plus the ratio of its domestic (Z) to imported (M) inputs.

The “off-diagonal” interactions between sectors make calculating the output multipliers for even a two-sector economy complex. The mathematical complexities are enough to lead to economic misinterpretation. In a multi-sector input-output model, the co-factors are coefficients that sort out the information provided by the off-diagonal elements. They do this by an exact accounting of all domestic intermediate supply by sector used to meet a sector’s initial derived demand.

The exterior product approach to calculating inverse matrices, i.e., multipliers, is well known in mathematics but seldom discussed by economists studying multipliers. The benefit of understanding exterior products is the insights they provide into the roles different sets of coefficients play in reallocating and multiplying within multipliers.

### **Cohesion Policy and sectoral growth in the Italian regions. A multi-input multi-output counterfactual approach**

**Mr Gianluigi Coppola<sup>1</sup>**, Prof. Sergio Destefanis

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S55-S1 The EU Cohesion Policy after 2020 – How to achieve faster and more impactful spending where it is needed the most?  
IUT\_Room 303, August 30, 2019, 9:00 AM - 10:30 AM

In the rather large literature on EU Structural Funds, an interesting line of research is growing (Becker et al., Crescenzi-Giua, Fratesi et al., Pellegrini et al.), which applies counterfactual analysis in this field (mostly in a cross-sectional set-up). The present paper aims to identify effective practices and sectors of intervention for



EU funds, by analysing the effects on regional GDP per capita of an array of EU cohesion funds. We set up a counterfactual analysis of the impact of EU on VA per capita through a control function approach in a macroeconometric panel framework. A further element of novelty in the present work vis-à-vis the existing literature resides in the fact that the empirical analysis is carried out by considering the VA's of various sectorial aggregates (the four sectors agriculture, energy and manufacturing, construction, services, plus some smaller aggregates: market services, non-market services, manufacturing, energy plus market services). Sectorial VA's are jointly modelled through a multi-input multi-output transformation function (Kumbhakar, EJOR, 2012, 2013). This transformation function works well, having a fit that is higher than for aggregate specifications, and uncovering sectorally differentiated effects. Sectoral evidence implies that EU Funds generally favour services, while reducing the share of agriculture and (less so) of industry in the economy. Our sectoral evidence implies that ESF and (a bit less) national co-financing favour services, while reducing the share of agriculture and (less so) of industry in the economy. ERDF and private investment do not show any sectorial bias. National co-financing imparts a small bias (not shown below) in favour of private services.

### **Mainstreaming Smart Specialisation in the EU R&I Framework Programme: challenges and opportunities. A view from a policy maker's perspective**

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S13-S1 Mainstreaming Smart Specialisation across European Union policies: challenges, opportunities and tools

UdL\_Room 106, August 30, 2019, 2:00 PM - 4:00 PM

This paper focuses on the need for mainstreaming the concept of Smart Specialisation in the EU Framework Programme for Research and Innovation to maximise its beneficial impact on European countries and regions, regardless of their degree of development of economic growth. The importance of innovation as the backbone of European growth policies was stressed in particular in the context of the present programming period (2014-20), both in the inception and architecture of the EU Research and Innovation Framework Programme (Horizon 2020) but also and in particular in the context of Regional and Urban Policy (Cohesion Policy funding through the European Structural and Investment Funds). Cohesion Policy made Research and Innovation Strategy for Smart Specialisation (RIS3) a conditionality for Member States and Regions, in order to fund Research and Innovation productive investments through the ESIF. However, except for a few recitals in the institutional texts adopting Horizon 2020, no particular provisions were foreseen in the FP pointing to effective interactions and synergies between Horizon 2020 and Smart Specialisation Strategies, imposed nevertheless to all Member States in the context of the Structural Funds. While this can be explained in institutional terms, essentially because of the conceptual origins of the two programming frameworks, in operational terms this is rather an anomaly: although both Smart Specialisation Strategies and the R&I FP share the objective of innovation based growth, the spatially blind profile of the FP drives it to ignore the importance of a coordinated approach to innovation at European level. Thus the significant potential for synergies between the two (2) frameworks is largely wasted. This paper discusses ways to mainstream Smart Specialisation inside the R&I FP and transform it as key enabler for an effective coordination between Cohesion and Research and Innovation Policies in the EU. To make this process a success, relevant authorities implementing the two policies but also universities and businesses have to engage at national and local level in a process that goes well beyond the so-called Entrepreneurial Discovery Process (EDP) and connects relevant stakeholder experience together.

## **MNEs, industrial linkages and productivity spillovers in Europe**

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S69-S4 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)

IUT\_Room 101, August 29, 2019, 9:00 AM - 10:30 AM

The economic and international business literatures have for long time investigated the effects of multinational enterprises (MNEs) on the local economy. In this field, particular emphasis has been put on spillover effects generated from the presence of MNEs, that allow local firms to tap in and benefit from the valuable technological, cognitive and managerial assets of international firms. The empirical literature has found significant evidence of these positive spillover effects, mostly affecting the productivity of local firms in industries that are vertically related to MNEs. Whereas input-output (I-O) linkages are important channels for knowledge diffusion, conceptually other forms of relations may also induce similar effects. In particular, agglomeration economies literature suggests that knowledge can diffuse across industries even outside the scope of buyer-supplier relations. This paper addresses this issue, by providing a more comprehensive approach for capturing spillovers using both industrial relatedness (Hidalgo et al. 2007) and input-output linkages. In our empirical analysis, we focus on a panel of firms across 12 European countries over the period 2007-2015, based on Orbis Bureau van Dijk database. Using this data we study how the presence of multinational enterprises in the regional economy influence firm-level total factor productivity in domestically owned firms. Our preliminary results suggest that incoming multinationals do impact on productivity of domestic firms. In particular, a higher presence of multinationals tends to negatively affect the level of productivity of local firms in the same industry. We tentatively interpret such negative relation as the consequence of tougher competition for factors (e.g. more skilled workers being hired by MNEs). Differently, domestic firms benefit from a stronger presence of foreign enterprises in industries that are vertically related and inside the same region: this suggest MNE spillovers can contribute to productivity improvements even in relatively advanced European countries. Interestingly, however, these effects do not materialize in the case of the service industry, pointing towards significant (spatial) heterogeneity in the direction of the impact and intensity of MNE spillovers.

## **Geography of the wealth, time preference and commercialization of the Viager product**

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S37-S1 Geography of the real estate stock wealth and of its evolutions

IUT\_Room 201, August 30, 2019, 9:00 AM - 10:30 AM

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Keywords: Viager, Housing stock, Lifetime annuity, Ageing

A Viager real estate transaction, which can also be called a « lifetime annuity real estate » transaction, consists in selling a property in return for a down payment and a lifetime annuity that the buyer has to pay until the seller dies. This paper presents a quantitative analysis of the geography of the wealth, of the time preference and the commercialization of the viager product. The analysis is based on 2 678 transactions from 2010 to 2018. It explores in particular the preference between a lifetime annuity and a down payment.

In our paper, we analyze French data by departments. Firstly, the potential viager wealth, estimated at 1 059 billion euros in France, appears less concentrated across the departments compared to the total

residential real estate wealth. This potential can vary between 8,6% and 33,5% of the total. The lower cases correspond to very urban and metropolitan departments. The higher cases correspond to a mix between departments confronted to a desertification process and littoral departments very attractive for retired people.

Secondly, the analysis of the time preference (down-payment versus annuities) indicates that the distance between buyers and sellers is not significant despite the existence of a local bias (buyers and sellers often live in the same municipality). Results also show that when sellers are older or when the ownership rate is higher in the municipality, annuity is preferred to down-payment. On the contrary, richer sellers prefer down payment.

Thirdly, the study of the time-on-market shows that the higher the time of commercialization, the lower the final economic value is for the seller. The joint life expectancy also has an impact on the commercialization process: younger sellers have a lower economic value as their right of use and habitation are higher.

### **The role of regional policy in achieving a sustainable convergence of regions. Perceptions of European citizens of EU regional policy**

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G08-O7 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 9:00 AM - 10:30 AM

The role of EU regional policy is to reduce the inequalities which exist both between member states, and between regions within member states. Regional Policy targets all regions and cities in the European Union in order to support job creation, business competitiveness, economic growth, sustainable development, and improve citizens' quality of life. The policies that promote economic, social and territorial convergence are evaluated by their effectiveness in reducing regional disparities in the provision of equal opportunities for individuals (reducing the gap between the levels of development of the various regions and intra-regional disparities). EU Regional Policy is also a major instrument for the realisation of the EU's "Europe 2020" growth goals, which aim to create an smart and inclusive economic growth.

In the analysis of a policy, it is also very important how this policy is perceived by the citizens to whom it is addressed. It is important if this policy is known to citizens, if they know the European projects through which the policy is implemented, if they think it has a positive or negative impact, whether or not they have benefited from such projects.

In this article, we also analyze how citizens perceive EU regional policy using data from a Eurobarometer survey conducted in March 2017 at the level of 27.173 EU respondents from different social and demographic groups. Taking into account the nature of our variables and the purpose of the study, we used a logistic regression model as econometric method. This analysis aims to create a profile of the European citizen regarding the perception of the role, purpose and results of EU regional policy.

### **Related and unrelated diversification in crisis and in prosperity**

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How does technological relatedness influence the portfolio of multi-product firms hit by external shocks? To answer this question, we look at the effect of product-specific demand shocks on product portfolios of firms in Hungary in the 2005-2012 period. We use the technological relatedness measure calculated from product co-occurrences in firms, following the revealed relatedness methodology. We find that production have become more cohesive in terms of technological relatedness if firms were exposed to demand shocks, whether these shocks affected their main or additional products. Evidence from firm-product level OLS panel regressions with firm fixed effects suggests that portfolio adjustment takes place both on the extensive and intensive margin: firms exposed to demand shocks are more likely to drop or downsize additional products not related to their main product and concentrate resources on related products. The results also stay robust in a more rigorous firm-main product fixed-effects framework.

### **Labor supply and the business cycle: The “Bandwagon Worker Effect”**

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G05-05 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 4:30 PM - 6:00 PM

The aim of this paper is to analyze how the relationship between the business cycle and the labor force participation may be influenced by “social effects”. The so-called “Bandwagon Effect” (BE) is now an important element to better understand the demand for goods and services (Leibenstein, 1950). As the labor supply is, in the end, a demand for leisure, we deem that the BE might be also operating in the labor market. In this paper, we construct a theoretical model coining a new concept, the Bandwagon Worker Effect (BWE). In this way, we test empirically whether the BWE is a significant factor, when considered together with the Added Worker Effect (AWE) and the Discouraged Worker Effect (DWE), to better understand cyclical movements in labor supply.

First we elaborate a microeconomic decision model, in which the AWE is conceptualized as an income effect and the DWE as an effect depending on the expectations of finding a job. The next step is incorporating the BWE within the previous theoretical framework, under the assumption that the BWE is a social effect. Another important feature that adds to the originality of this paper is that we make use of conventional spatial econometrics techniques to do that (Moran’s I). Moreover, the empirical test is derived straightforwardly from the theoretical framework, so we assume here that geographical neighborhood is a tool to capture the degree and the intensity of the “social effects”.

The results obtained show a positive and significant global spatial dependence in the cyclical sensitivity of the labor force participation rates in the Spanish provinces (NUTS-3 regions). According to our theoretical approach, this finding proves that the BWE is a key phenomenon to help understand the overall functioning of the aggregate labor market. This result is robust to two different neighborhood criteria and two different trend-cycle decompositions of time series.

Moreover, we also find that, as the neighborhood definition becomes laxer, the strength of the “social effect” diminishes.

Finally, our work suggests some policy recommendations. In this sense, policy makers should take into account that there are geographical spillover effects affecting labor supply. In this vein, spatial areas,

instead of single spatial units, should be the economic policy target when devising policy actions thought to improve problems related to the cyclical pattern in labor supply.

### **Urban development and smart specialization by Regio in Bucharest- Ilfov region**

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G07-O4 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

The regional development policy is a policy of solidarity, meaning a policy for people, its purpose being to create working places, to increase the competitiveness level and the potential for innovation.

In Bucharest-Ilfov region from Romania, continuing the networking process within the sustainable development context with new members and new communication activities is important because all the actors of regional policy must cooperate to develop the network communication in order to attract more European Union funds to finances smart sustainable projects

The paper aims to analyze how the regional policy was implemented in Bucharest-Ilfov region, to follow REGIO–Regional Operational Program indicators regarding the urban regeneration.

The methodology consists in the comparative analysis of the cohesion programs, especially REGIO with concrete examples of REGIO projects.

In this paper, I consider important the partnerships of the local authorities and other actors from development and innovation policy for the efficiency of EU funds as one of the challenges for urban regeneration and innovation in Bucharest-Ilfov region.

### **Regional disparities in the European Union: the role of institutional quality**

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G22-O2 Institutions  
IUT\_Room 303, August 29, 2019, 4:30 PM - 6:00 PM

The attention to regional income inequality in Europe rebounded after the global financial crisis and focused on the different capacity of regions to overcome the Great recession. The characteristics ensuring regional resilience were deeply investigated (Martin, 2012; Martin et al., 2016) and one of the issues at the heart of the current debate is the question whether heterogeneous structural change is a driving force of divergence.

In a recent work (Cutrini, 2019) we provide evidence that European regions are scattered in five separate groups converging to their own steady state paths. Results suggest that the divergence among clusters is explained quite well by the structural characteristics of regions and their initial conditions. Particularly, a solid manufacturing base and specialization in high-productivity services both enhance growth, while low-skilled services are less relevant or even deteriorate growth prospects.

Sharing the view that institutions matter for regional development (Rodríguez-Pose, 2013; Ezcurra and Rios, 2019), this paper extends the previous analysis and examines the relationship between institutional quality and regional disparities in the European Union. To this purpose, we conduct an empirical analysis to evaluate whether the quality of government can indeed explain to which club the region converges during the period 2003-2016.

We collected a panel data on per capita income covering 274 EU regions during the period 2003-2016. For the covariates related to structural variables and human capital we refer to regional economic accounts, regional branch accounts, regional education statistics (Source: Eurostat). To measure institutional quality we use data on European Quality of Government Index (EQI), which has recently been constructed on the basis of the perceptions and experiences of European citizens on the quality, impartiality and level of corruption in education, public health care and law enforcement (Charron et al., 2014, 2015). We address endogeneity and econometric drawbacks by means of the dynamic panel generalized method of moments (GMM) estimator devised by Blundell and Bond (1998).

Main references:

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### **Endogenous growth in a spatial economy**

Prof Danny Czamanski<sup>1</sup>, [Dr Dani Broitman](#), Prof. Itzhak Benenson

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S27-S1 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?  
MILC\_Room 309, August 28, 2019, 11:00 AM - 1:00 PM

The Lucas paradox points out that contrary to the general equilibrium model, capital does not flow from rich to poor economies. We resolve the paradox by focusing on the self-organizing nature of modern economies that leads to prolonged far from equilibrium conditions. We propose a model with local positive feedbacks that tend to possess a multiplicity of asymptotic states or possible emergent structures. We study growth processes and periodic fluctuations that arise endogenously within a system of cities. At the same time our model addresses simultaneously two stylized facts concerning cities. Under certain conditions, our model generates entire life-cycles for individual cities. At the same time, it produces a power law for an assemblage of cities.

We present a dedicated agent-based model that includes several types of agents including, firms that make decisions what to produce and whether to hire additional workers and individuals that make decisions whether to migrate and become entrepreneurs as an alternative to working for existing firms. Migration generates innovative activities. Newcomers have better chances to boost innovation, and therefore a firm receiving new employees have a higher chance to realize the next big idea. However, innovation also decays with time. Based on existing human capital within an economy, the adjacent possible is the set of all entities that can be produced within an evolutionary system in each successive step. It is the set of ideas that are one step away from ideas that actually exist and generate incremental modifications and re-combinations of the existing ideas. Thus, development is driven by entrepreneurial actions that introduce technological innovations creating new products, services and production processes. The characteristic non-linear, combinatorial interactions can cascade and reach magnitudes causing industrial transformations, termed by Schumpeter creative destruction. In the absence of innovations, the economy will slip into a stationary equilibrium state.

## **Agglomeration economies and real estate investment: intra-urban dynamics in US cities**

Dr. Michiel Nicolaas Daams<sup>1</sup>, Prof. dr. Philip McCann<sup>2</sup>, Dr. Paolo Veneri<sup>3</sup>, Dr. Dennis Schoenmaker<sup>4</sup>, Prof. dr. Richard Barkham<sup>5</sup>

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S39-S1 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)

IUT\_Room 202, August 29, 2019, 4:30 PM - 6:00 PM

This paper measures potential agglomeration economies within 17 US cities. Our analysis extends other studies, which tend to consider differentials in productivity or wages at the level of cities, by adopting an intra-metropolitan scale. Intra-metropolitan areas that potentially harbor agglomeration economies are scrutinized based on fine-scale densities of economic production and real estate investments. Indeed, urban economic theory suggest that if firms gain productivity from density this is reflected in land values – and, by consequence, in property yields, reflecting the relative price at which investors buy commercial buildings and associated rental income flows. To classify areas where agglomeration economies may be present, we apply a sophisticated clustering model on the locations of investment-grade properties, offices, that transacted during 2003-2015 at a combined value of one trillion US dollars. The resultant clusters are jointly analyzed with information on local employment density. Regression analysis is then used to estimate whether yields vary between office buildings in buoyant or less buoyant clusters and lesser agglomerated city subareas. If so, this may provide evidence of local agglomeration economies. This study's findings combines thinking in urban economics and real estate economics, and special attention is paid to the consistency of our comparative analysis across cities of different shape and density. Our findings may be relevant to policy makers and market actors who seek to identify the economic development potential of cities.

## **Elders' Pedestrian Accessibility to Local Urban Opportunities: the Case of FoodNet Project Research on Food Services in Milan**

Dr. Luca Daconto<sup>1</sup>, Dr. Simone Caiello<sup>1</sup>, Prof. Matteo Colleoni<sup>1</sup>

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S07-S1 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers

IUT\_Room 103, August 30, 2019, 9:00 AM - 10:30 AM

The paper proposes a method for analysing the levels of walkability offered to the elderly population and presents the results of its application to the case of the municipality of Milan. The method has been developed in the framework of the FoodNET research project, whose aim is to build an online platform able to provide guidelines and technologies to improve elders' access to food in the city.

The presentation of the method, based on the use of open data and GIS, and of the results, focused on the identification of socio-spatial inequalities and of disadvantaged areas in terms of walkability, is preceded by a review of the relationship between pedestrian mobility and the elderly people's quality of life, of the determinants of walkability and the techniques used in the research for its detection.

## **Museums' commitment to immigrant integration: A quantitative analysis**

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We exploit the rich information provided by the 2015 Italian museum census to investigate the factors associated to a greater probability for a museum to address immigrant audiences, with a special focus on their size and dynamics and the relevance of the anti-immigrant sentiment in the local context of reference. We proxy the latter with the municipal vote shares for the parties with an anti-immigrant agenda in the 2013 national elections. While our evidence on the role of immigrant demography is not robust, Lega Nord vote share is found to have a significantly negative, sizable coefficient. We control for a number of context variables and some specific museum characteristics, some of which (size, age, type of collection) turn out to be positively associated to a museum's commitment to immigrant integration. Our analysis is one of the first considering the consequences, in terms of implemented spending policies, of the recent surge of populist right-wing sentiments and parties in Europe. We conducted it avoiding adopting the traditional political economy empirical framework where quantitative aggregate fiscal spending indicators are on the left hand side of the model and the left-right dimension of the ruling party is on the right hand side. In fact, in our view, the adoption of such an approach may lead to an underestimation of the impact for two distinct reasons. One is the use of quantitative aggregate policy indicators, such as spending in general or spending for a certain budget item: in fact, policy is not just on how much money you spend, but also on what you spend it within each policy domain. The other reason, highlighted by Schumacher and van Kersbergen (2016), is that there may be an impact irrespective of the fact that anti-immigrant parties are on power. In fact, the surge of populism activates a self-censorship attitude towards their preferred political choices in the parties confronting them, a standard Downsian effect.

### **What factors drive the savings in the amount of water used in the U.S. agriculture?: an input-output approach**

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G19-O2 Health and Environmental Issues  
MILC\_Room 409, August 29, 2019, 4:30 PM - 6:00 PM

Recent studies on the impact of climate change anticipate a significant decrease in both the availability and quality of water resources in the next half-century, which will directly impact domestic and international food supply chain linkages. In the U.S., agricultural production requires less irrigated water than in the past but it is still responsible for more than a third of total water withdrawals. To better understand the evolution of water use in this sector, we perform a structural decomposition analysis over the 1995-2010 period using the Exiobase 3 database. More precisely, we emphasize i) the evolution of water withdrawals for 8 different crops and 6 livestock categories, ii) the difference in results from using the observed water consumption data from the U.S. Geological Survey vs. Hoekstra's water footprint data, and iii) the trends in the pre-crisis period (1995-2005) and after it (2005-2010). Our results show that the pre-crisis period experienced an overall decline in water withdrawals but oil seed crops (which include soybeans) increased their water use primarily because of greater water intensity and changes in international interindustrial trade patterns. This increase persisted in the post-2005 period but was driven primarily by direct exports to industries and changes in the average global expenditure structure. We also find that the evolution in the production structure of the U.S. food manufacturing sector contributed to an increase in water use in agriculture pre-2005 but to a decrease post-2005. Livestock has also shown a decline in water use during the entire period, mainly driven by the dynamics in water use for cattle (beef and milk cows). Overall, these results will help develop future water-saving strategies in the U.S. as the country, like its trade partners, will meet increasing challenges to secure food availability in the face of climate change.



## **The U.S. Interstate Trade Will Overcome the Negative Impact of Climate Change on Agricultural Profit**

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S32-S1 Spatial CGE, land use and transport modeling  
IUT\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

Climate change will increase the occurrence of droughts as well as their impact on agriculture. However, this paper demonstrates how domestic trade will overcome the adverse effect of drought on U.S. agricultural profit. Based on recent trade flow data of agricultural commodities and detailed drought records, our gravity model highlights that exports increase if more drought happens in the destination state and inversely if in the origin state. As a result, the general equilibrium agricultural profit depends on both local and trade partners' weather conditions. Projections suggest that trade will act as a \$14.5 billion adaptation tool in the future.

## **Unpacking migrants' pro-trade effect: evidence from Italian provinces**

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S41-S5 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 29, 2019, 2:00 PM - 4:00 PM

A growing literature studies migrants' contribution to the internationalization of regions (Gould, 1994; Rauch and Trinidad, 2002; Wagner et al., 2002; Felbermayr et al., 2015; Burchardi et al., 2018). Migrants are supposed to promote trade by facilitating the flow of information between the trade partners and by sustaining the enforcement of contracts. However, only a few studies (Peri and Requena-Silvente, 2010; Briant et al., 2014; Burchardi et al., 2018; Bratti et al., 2018) sought to disentangle the mechanism underlying such effect while undertaking a sub-national focus. Drawing on rich transaction-level data on Italian exports provided by the ISTAT, we seek to dig deeper into the understanding of the mechanism underlying migrants' pro-trade effect, focusing on Italian NUTS3 regions. Transaction-level data allow identifying differential effects of migration on the number of transactions vis-a-vis the average value per transaction; they allow aggregating transactions according to the level of differentiation of the goods exchanged, which should be informative about the informational content of the good (Rauch, 2001; Rauch and Trinidad, 2002); and they allow aggregating transactions by technological intensity of the sectors of the trading firm. We employ a gravity model of international trade (Anderson and van Wincoop, 2003; Head and Mayer, 2014; Chaney, 2008) augmented with migration where we allow for differentiated exporting capacity of Italian provinces (Bratti et al., 2018; Burchardi et al., 2018), differentiated importing capacity of the partner countries, and for heterogeneity in trading at the region (NUTS2)-country level. We document a robust effect of both immigrants and emigrants on trade value and on the number of transactions, but not on the average transaction value. The results are consistent with the idea that migrants bridge the fixed, rather than the variable costs of trade (Chaney, 2008; Peri and Requena-Silvente, 2010). The effect is stronger for differentiated goods and for lower-tech sectors. Overall, the results suggest that migrants' effect is primarily an information effect that bridges the realization of new trade

relationships, rather than increasing their value, which applies to sectors of relatively accessible informational content.

Moreover, our results reveal that migrants' effects correlate with the province exporting capacity, consistent with Bratti et al. (2018), suggesting a role for migrants in exports that goes beyond the effect on bilateral trade costs onto the productivity of the firms in the region.

### **Pedestrian accessibility of services as a measure of territorial cohesion at the local level**

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G06-O6 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 9:00 AM - 10:30 AM

Territorial cohesion is a concept prevailing the EU political discourse since the 1990's. However, its implementation in practice presents a big challenge to policy makers at various levels of public administration. One important strand of territorial cohesion is citizen access to affordable public infrastructure services. Even where supply networks are built and problems of accessibility reduced, affordability issues may occur as market-oriented provision in areas associated with lower profitability means that citizens bear the extra costs.

In this paper we try to answer the questions of accessibility and affordability of essential everyday services (e.g. local shops, personal services, finance, education, healthcare, public transport etc.) in urban neighbourhoods. Analysing the 32 territorial cohesion indicators established by ESPON (2012) we adapted 3 of them to the local scale: access to public services, access to market services, access to urban public transport. In order to conduct empirical research, we developed a three-step method of measuring accessibility of services: 1) a thorough inventory of selected locations, including delimitation of research areas, typology of services and their location; 2) social surveys (paper and pencil interviews) among two groups of respondents: residents and users of public spaces; 3) extensive mapping data, including spatial distribution of neighbourhood population and paths for pedestrian movement.

The empirical data was collected in the years 2017-2019 in 5 locations in Poland representing various geographical settings (large cities, medium towns and suburban areas). A total of 618 social surveys was conducted among two (partly overlapping) groups of respondents: residents and users of public spaces. It provided detailed information on the average distances in everyday travels to essential local services and the most popular means of transport. Then, a GIS-based accessibility analysis was conducted for pedestrian movement, enabling the verification of residents' opinions and offering particular statistics on the percent of population within the preferred time zone (5 minutes of walking) and the acceptable time zone (10 minutes of walking).

The results of the research provide particular insight into the scalability of the territorial cohesion concept. Indeed, the indicators of territorial cohesion can be adapted to the local context of urban neighbourhood, offering reliable and comparable information on pedestrian accessibility of everyday services for citizens in various geographical settings (big cities, medium cities and suburban areas). The results prove also the high importance of local service centres in shaping the livability of urban environment.

### **Too small to be beautiful? Challenges and struggles in Italian "Inner Areas"**

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The so-called 'Inner Areas' have been defined by the Ministry of Economy in 2012 as areas far away from urban centers and a full range of facilities such as education, mobility and healthcare services, suffering over the last decades from depopulation and ageing, poor job and welfare opportunities.

Measures targeted at safeguarding and rehabilitating inner areas, that make up for approximately 60% of the country's surface area and 13.5 million people, have been deemed necessary to counteract negative demographic trends.

Heritage and nature are both at stake, due to high presence of small historic cities gathering dense and complex heritage assets, and protected areas as well. When it comes to the institution of protected areas, conservation issues are to be met with sustainable living and settlement requirements in order to counteract demographic trends. As a matter of fact, Italy, with almost 3 million hectares and over 10% of protected areas, has made a relevant contribution to the implementation of the Natura 2000 European network.

In the Lazio Region, covered with protected areas for about 11%, the very idea of park lends itself to a positive dialogue between the natural sciences and the humanities. This contribution will delve into the mainstream debate related to the Inner areas, stressing some considerations in the case of the Natural Reserve of the Navegna and Cervia Mountains, set apart from the Roman metropolitan area but close enough to benefit from its agglomerations economies. Inhere the main actor, the Park itself, is struggling to promote an inclusive approach addressing both territorial production and landscape reproduction, encouraging bottom-up development paths drawing upon the natural capital and its vast reservoir of biodiversity.

### **Why is the urban wage premium larger for women?**

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G05-R1 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 2:00 PM - 4:00 PM

This paper contributes to the urban wage premium literature by looking at gender differences as a new, important source of heterogeneity in agglomeration economies. This paper is the first to document gender differences in the urban wage premium using a large representative panel of workers recording their personal and job characteristics as well as their transitions across labour markets and to explain the differences in light of existing theories.

We use a large and representative panel of workers in Great Britain based on the ASHE/NES survey (sampling 1% of workers) covering the years 1998-2008. We follow the existing literature estimating the urban wage premium using fixed effects on large microeconomic datasets of workers' wages. This controls for time-invariant unobserved factors at the worker level such as unobserved ability, ambition or productivity that may affect whether a worker locates in a city. Before controlling for sorting, we find that the urban wage premium is the same for men and women. Once sorting is taken into account using worker fixed effects, we document that the urban wage premium is 43% greater for female workers than for male workers. Results are robust after controlling for time-varying heterogeneity using IV methods. Given that current estimates in the literature are based on males, i.e. approximately half of the work force, the first benefit is to ascertain the extent to which the actual premium is underestimated in previous studies. Further contribution comes from being able to document gender differences more reliably than was previously done using worker fixed effects since we observe a large number of workplace transitions in a

large representative panel of workers. This enables us to compare our estimates with the rest of the empirical literature on the urban wage premium.

The richness of our data enables us to then explore various channels that can theoretically explain the gender differences in urban wage premium. In particular, we uncover the importance of sorting of more productive workers into cities, which is more pronounced for men than women. The large remaining gender difference is then investigated. Our results suggest that other channels resulting from agglomeration economies present in cities are at play.

### **Using path analysis to uncover intra-Household Travel Behaviour Effects of Home-Telework in Great Britain**

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G(01+02)-02 Mobility and Digital Transformations  
IUT\_Room 408, August 29, 2019, 4:30 PM - 6:00 PM

Home-based telework (or telecommuting) has been consistently growing and it is considered by several policymakers as an attractive travel demand management strategy. Therefore it has been the subject of a substantial amount of literature. Contrary to the expectancy of policy makers, the more recent empirical evidence suggests that the potential of telework to reduce total vehicle travel is at best weak. This results in a great part from the effects on non-work related trips, travel mode choice, and household residential location, all of which can diminish the scope for a net reduction in travel. Home telework has implications not only for the travel behaviour of the teleworker, but also for the other household members, in particular the teleworker's partner. One possible intra-household effect of home telework is that it can encourage residential relocation closer to the workplace of the non-teleworker household member, reducing his/her commute and possibly also the household total commute. There can also be effects resulting from changes in the allocation and sharing of activities and the associated travel between household members (e.g. escorting children to school, shopping). It is not obvious a priori whether the overall net effect of home teleworking on other (non-teleworking) household members should be positive or negative, and other factors, e.g. land use characteristics, may play a role here.

This work develops a path analysis model for two-worker households in Great Britain using data from the National Travel Survey for the period between 2005 and 2012. It investigates the presence of intra-household effects of home-based telework on the number of weekly trips and miles travelled by transport mode of teleworkers and their partners by implementing a path analysis model with instrumental variables, to account for endogenous relationships in the chain of decisions relating residence and work location land use characteristics, car ownership, home telework and travel patterns. Preliminary results suggest there are potential intra-household interactions in the context of two-worker households engaging in home-based telework and that

home telework appears to be relatively neutral in terms of its impact on car travel, suggesting that telework might be ineffective at reducing total miles travelled.

### **Housing market and migration revisited: a multilevel gravity model for Dutch municipalities**

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S41-S4 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 29, 2019, 9:00 AM - 10:30 AM

This paper revisits the impact of the housing market structure on interregional migration, but adopts an alternative modeling approach to migration flows between cities. The starting point is a gravity model, but instead of using fixed effects for cities of origin and destination, I use a multilevel mixed effects approach allowing me to simultaneously model migration flow characteristics and the cities of origin and destination characteristics. This approach has two main advantages. First, it allows for simultaneous estimation of the impact of city characteristics on migration flows, where the impact is not necessarily symmetrical for cities of origin and destination. Second, it allows for prediction of migration flows between cities both in and out of sample. Preliminary results show that homeownership decrease migration flows significantly with an elasticity below -1. Municipal social renting rate has a negative impact as well, but its elasticity is close to zero.

### **Social protection and the economic crisis: cyclical government expenditure in the OECD**

Dr. María Jesús Delgado Rodríguez<sup>1</sup>, Dr. Sonia de Lucas Santos<sup>2</sup>

<sup>1</sup>Universidad Rey Juan Carlos, Madrid, Spain, <sup>2</sup>Universidad Autónoma de Madrid, Madrid, Spain

G15-O2 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 4:30 PM - 6:00 PM

This research examines whether OECD social expenditures have converged since 1980 to 2016 or they show divergent trajectories in the wake of the economic crisis. Based on the data from OECD Social Expenditure Database (SOCX), we employ dynamic factor model analysis and recursive estimation in order to examine the countercyclical effect of social expenditure during the last economic crisis and the existence of cyclical convergence in social expenditures in the OECD countries. We find out that social expenditures have a positive effect in shortening the length of the crisis though we find differences across countries and social expenditure composition. Our findings also provide evidence that convergence is mainly driven by globalization and European Union membership and that the economic crisis has given rise to significant challenges to the welfare state.

### **Spatial spillovers of the cultural employment growth in Brazilian municipalities**

PhD Luiz Carlos de Santana Ribeiro<sup>1</sup>, PhD Thiago Henrique Carneiro Rios Lopes<sup>2</sup>, PhD Amir Borges Ferreira Neto<sup>3</sup>, Miss Fernanda Rodrigues dos Santos<sup>1</sup>

<sup>1</sup>Federal University of Sergipe, São Cristóvão, Brasil, <sup>2</sup>University of Salvador, Salvador, Brazil, <sup>3</sup>West Virginia University, Morgantown, United States

G18-O1 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 9:00 AM - 10:30 AM

The creative and cultural industries have been growing faster than traditional industries over the last few decades. For instance, in Brazil reports by the Brazilian Institute of Geography and Statistics (IBGE) informed over 30% growth of gross output and value added between 2003-2005 and 2007-2010 periods. In addition, there has been over 10% increase in formal workforce in these industries for the both periods. However, most the literature on these industries in Brazil is still scarce, especially considering all municipalities at the same time in an economic and spatial perspective. The expansion of data availability in conjunction with software development contributed to the increase of empirical studies in cultural economics across the

globe. This paper aims to measure the level of specialization, urbanization and diversification externalities on the cultural employment growth rate in Brazilian municipalities between 2006 and 2016. To do so, spatial econometric models are used. The main results show that there are no spatial associations regarding to cultural employment growth in Brazilian municipalities between 2006 and 2016 in none of the spatial econometrics models used. These results are important because, although there is evidence in the international literature that artists agglomerate in space and this is in their benefit, this was not the case for the cultural sector in Brazil between 2006 and 2016. The lack of complementarity of this sector, associate to the lack of incentives for its development, particularly in small municipalities, helps to explain our results.

### **Does Broadband Internet Promote Borrowed Size?**

Mr Duco de Vos<sup>1</sup>, Dr. Urban Lindgren<sup>2</sup>, Dr. Evert Meijers<sup>1</sup>, Dr. Maarten van Ham<sup>1</sup>

<sup>1</sup>TU Delft, Delft, Nederland, <sup>2</sup>Umeå Universitet, Umeå, Sweden

S03-S1 Engaging with the Digital World: the effects for society, places and individuals  
IUT\_Room 404, August 29, 2019, 2:00 PM - 4:00 PM

Borrowed size refers to the idea that small cities nearby larger metropolitan centres are able to reap the advantages of large agglomerations, without the agglomeration costs. This study explores whether broadband internet helps such smaller cities to enjoy the labour market benefits of a larger city. Using Swedish micro-data from 2007-2015, together with unique data on broadband, our results suggest that broadband allows smaller cities to reap such benefits indeed. We find that borrowed size is primarily driven by the overall penetration of broadband in the place of residence, rather than by broadband availability at the residence.

### **A Configuration Approach of Entrepreneurship and Regional Development**

Prof. Marcus Dejardin<sup>1</sup>, Dr. Éva Komlósi<sup>2</sup>, Mr. Balázs Páger<sup>3</sup>, Prof. László Szerb<sup>4</sup>

<sup>1</sup>CERPE - University of Namur and LIDAM CIRTES - UCLouvain, , Belgium, <sup>2</sup>MTA-PTE Innovation and Economic Growth Research Group, University of Pécs, , Hungary, <sup>3</sup>Centre for Economic and Regional Studies Hungarian Academy of Sciences, , Hungary, <sup>4</sup>University of Pécs, , Hungary

S19-S1 Regional Entrepreneurship Policy  
UdL\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

The contribution focuses on a configurational approach to regional performance in terms of economic development in Europe. In particular, it examines whether differentiated contributions from what have been identified as the pillars of entrepreneurship can be associated with similar regional economic development. In doing so, the contribution questions the idea that there would be a unique formula associating entrepreneurship and regional development. Is it about being relatively good in all the factors involved in entrepreneurship development to stand out in terms of performance, or a variety of configurations - some strong factors coming in compensation for others weaker - can lead to similar performances? If so, results confirming the variety of configurations would suggest the possibility of differentiated trajectories nevertheless yielding comparable results.

### **Digital tools: tools for tourism actors to reconsider their destinations? The case of France**

Amina Bekkouche<sup>1</sup>, Professor Marie Delaplace<sup>1</sup>

The digital revolution modifies tourist behaviour by what it is called E-tourism. According to Mc Kinsey (2015) tourism is the economic sector in which the digital transformation is the strongest. Similarly, CESE emphasizes that tourism has been a pioneer sector of digital change (Cabrespines and Wargnie, 2017). With a computer and an internet connection, booking a room or building a tourism circuit is currently done via internet before the departure. But since a couple of years, it is also M-Tourism, i.e. the use of mobile technologies in the tourism sector that is growing. These mobile devices can be used in tourism before the trip but also during the tourism trip and inside the destination. In a context in which the competition between destinations is more and more fierce, tourism offices try to increase the attractiveness of the territory and tourist flows and are seeking to innovate. They set up strategies around reception services and equip them with digital tools (Wifi, touch terminals, screens ... etc.). Indeed, "innovations in ICT have been catalysts of innovation in tourism" (Gallouj and Leroux 2011, 220). The actors of tourist destination also develop their strategies around digital tools (augmented reality, virtual reality, QR code, mobile applications...). They are tools for innovation and creativity in order to stand out among themselves. The aim of this communication is to study how these different digital tools are used by French public tourism stakeholders (tourism offices (OT), Departmental Committees of Tourism (CDT) and Tourist Development Agencies (ADT)). The literature highlights that these digital technologies offer many opportunities to build the destination of tomorrow, a smart destination (Buhalis and Amaranggana, 2013; Gretzel et al., 2015). Based on the French case, we want to analyze how these tools conduct public tourism stakeholders to effectively reconsider the tourist destinations for which they are responsible. For this, two complementary methodologies have been used: questionnaires and semi-structured interviews. We show that public tourism actors are rethinking their destinations through digital tourism strategies, particularly through mobile tourist applications. They wish to improve the experience of the tourist stay. More precisely, the public actors of tourism in France focus on the development of applications for the visit, including the applications of routes and hikes, the discovery of heritage and nature. Some tourism offices also collect data providing information on tourist practices. However, we show that it is not common among public actors of tourism.

### **A comparative study of the effect of innovation on internationalization in European firms**

PhD. M<sup>a</sup> De Loreto Delgado González<sup>1</sup>, PhD. Javier Gamero<sup>1</sup>, PhD. Juan Antonio Martínez Román<sup>1</sup>, PhD. Juan Aurelio Tamayo<sup>1</sup>

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The effect the uncertainty and risk associated with internationalization is a topic of current interest (Buckley, 2016) which underscores the value of risk management in exporting firms (Cavusgil and Knight, 2015; Johanson and Vahlne, 2009). The complexity of international markets increases the level of uncertainty (Knight and Cavusgil, 2004) and the danger of knowledge leakage (Kafouros et al., 2008). However, it is also true that innovation can raise the level of uncertainty and risk when the introduction of new products is decisive for the positioning of a firm in international markets. In this line of investigation, our study seeks three objectives. Firstly, it aims to analyze the effect of product innovation on geographical extension of the market, both at a community level and in different European countries in order to compare

the national effect. The second objective is to analyze the variation of uncertainty in market extension when the level of innovation rises, both on a community level and in different countries. Indeed, innovation may drive internationalization, for this reason, in third place, the internal and external bases for innovation are analyzed using a conceptual model. This model will be contrasted on a community level and by countries, and a comparative analysis will be carried out on national models.

The results of the empirical study indicate that market extension conditioned to innovation level is a variable whose average value is growing. A finer analysis leads us to calculate the empirical curve of regression using conditioned means, and the standard deviation for each innovative level. The results show a significant non-linear relationship between product innovation and expected market extension, with a greater positive impact on market extension when an initially non-innovating firm adopts novelties or technological improvements, a reduced impact when changing from firm-level to market-level innovation, and an even lesser impact when beginning to carry out both types of innovation. This finding on a community level is analyzed comparatively on a national level in order to determine the effect of a country's economic characteristics on the typical conditioned means and deviations that analytically determine this relationship, with interesting results for the policy and management of firms in Europe. Finally, the results show a prevalence of internal variables over external ones; among these variables, those related to market are more influential than those defining institutional support of innovation in Europe, though certain significant differences exist between countries.

### **Tax fraud detection through neuronal networks: an application using a sample of personal income taxpayers**

**Dr. María Jesús Delgado Rodríguez<sup>1</sup>, Mr. César Pérez López<sup>3</sup>, Dr. Sonia de Lucas Santos<sup>2</sup>**

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G03-O1 Big Data and Regional Science  
IUT\_Room 408, August 29, 2019, 9:00 AM - 10:30 AM

The goal of the present research is to contribute to detection of tax fraud concerning personal income tax returns (IRPF, in Spanish) filed in Spain, through the use of Machine Learning advanced predictive tools, by applying Multilayer Perceptron neural network (MLP) models. The possibilities springing from these techniques have been applied to a broad range of personal Income return data supplied by the Institute of Fiscal Studies (in Spanish, Instituto de Estudios Fiscales IEF). The use of the networks enabled taxpayer segmentation as well as calculation of the probability concerning an individual taxpayer's propensity to attempt to evade tax. The results showed that the selected model has an efficiency rate of 84.3%, implying improvement in relation to other models utilized in tax fraud detection. The proposal can be generalised to quantify an individual's propensity to commit fraud as regards other kinds of taxes. These models will support tax offices to arrive at the best decisions regarding action plans to combat tax fraud.

### **Cohesion Policy and SMEs : Boosting the absorption of EU Cohesion Policy Funds through Financial Engineering Instruments**

**Mr Georgios Papastamatiou<sup>1</sup>, Mr Lefteris Podimatas<sup>1</sup>, Mrs Vassiliki Delitheou<sup>1</sup>**

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Strengthening the use of financial engineering instruments (FEIs) both during the programming period 2007-2013 and the current 2014-2020 has provided a valuable contribution towards increasing the effectiveness and efficiency of the available EU cohesion policy budget achieving through the recycling of Structural Funds resources to promote their sustainability and through co-operation between public and private sector, mobilization of additional funds and dissemination of experience and know-how between Regional and national authorities, financial intermediaries and final beneficiaries.

Additionally, compared to traditional grants, FEIs have led to a better use of public resources and limitation of dependence between final beneficiaries and public support as funding must be repaid and guarantees must be released or in case of investments in equity must be returned, a fact that has corresponding impact to the behavior of the final recipients.

Taking into account that the available budget for cohesion policy after 2020 is limited due to the forthcoming exit of United Kingdom from the E.U., further use and utilization of FEIs concentrates those desirable characteristics to offset the limited availability of cohesion policy resources through leverage and mobilization of additional public or private co - funding.

However a necessary prerequisite besides the need for less, shorter and clearer rules in front of the new framework for Cohesion Policy of period 2021 – 2027, is the enrichment and adjustment of FEIs both to the needs of enterprises and financial intermediates in order to make the disposal of cohesion policy resources more rapid and more efficient. Additionally as it noted in OECD's report it is necessary to enlarge the range of financial means that are available to SMEs and entrepreneurs, in order to be able to continue play their role in investments, development, innovation and employment.

The purpose of this article is to highlight and enrich FEIs, with tools and procedures more accessible and flexible to daily needs of enterprises such as factoring and focused to smaller scale investment needs such as leasing in order achieve flexibility and ease of access of SMEs to EU funds for cohesion policy and in parallel quicker absorption of them.

## **Towards New Dynamic Models of Migration Systems**

Dr. Justin Delloye<sup>1,2</sup>, Prof. Isabelle Thomas<sup>2,3</sup>

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S27-S2 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?

MILC\_Room 309, August 28, 2019, 2:00 PM - 4:00 PM

Migrations are an essential driver of spatial population dynamics, and their understanding is crucial to forecast the evolution of urban and regional systems. Researchers in human geography have proposed several theoretical frameworks to catch the underlying rules that are seemingly shared by migration processes around the world. This paper anchors in the migration system approach that has been developing since the fifties. We argue that, in line with the general direction of migration research, these developments did not emphasize the timing of migration decisions. This shortcoming remains a gap in our understanding of migration dynamics, and it has contributed to the current call for the renewal of migration system theory.

In that perspective, we propose a new stochastic model of complex migration system. In this model, individual migration decisions are represented by a nested Logit model, and they are aggregated in a nonlinear stochastic system that represents the collective migration dynamics. The model includes a “migration propensity” parameter, which describes the migration rate that remains after having controlled for regional utility differentials. This migration propensity parameter is calibrated on aggregate migration data from Belgium. With respect to the evolution of migration systems theory, our model reconciles existing dynamic approaches and it is suitable to empirical calibration. It contributes to the renewal of migration systems theory by providing a new dynamic tool.

### **Marshallian vs Jacobs effects: which one is stronger? Evidence for Russia unemployment dynamics**

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G11-O1 Spatial Econometrics

MILC\_Room 309, August 29, 2019, 9:00 AM - 10:30 AM

This paper is devoted to the study of diversification and specialization influence on one of the main indicators of Russian labour market, the unemployment growth. The purpose of the work is to find out which effects dominate in the Russian regions, Marshallian or Jacobs, and whether this predominance is stable for different time intervals. The following hypotheses were empirically tested: 1) the dependence of the unemployment rate on the degree of concentration or diversification is non-monotonic due to possible overlapping effects of urbanization and localization; 2) the influence of the degree of concentration or diversification on the level of unemployment depends on the time period. To test these hypotheses nonparametric additive models with spatial effects were used. Both hypotheses found empirical confirmation. It was shown that in Russia, depending on the period, various effects dominated: in 2008-2010, and 2013-2016 Marshallian effects predominated, while in 2010-2013, Jacobs effects dominated. Understanding the key differences between the regions of the Russian Federation will allow the state to conduct a competent structured socio-economic policy that will help to eliminate the negative social and economic consequences from the high concentration in some regions. So, in the crisis period the state should support enterprises whose specialization does not coincide with the main specialization of the region through tax benefits and special subsidies, and in the period of growth - to develop the most promising sectors in each region.

### **Spatial and Human Factors that Structure the Complexity of Urban Systems. The evidence of the Portuguese Cities**

Dr. Tomaz Dentinho<sup>1</sup>

<sup>1</sup>Univ. dos Açores, Angra do Heroísmo, PORTUGAL

S01-S1 Regional Science Footprints of Walter Isard

IUT\_Room Amphi 10, August 29, 2019, 2:00 PM - 4:00 PM

The paper proposes and estimates an urban growth entropic model to explain the evolution of the urban system Portugal from 1850 to 2010. The hypothesis to be tested is that there are permanent territorial factors that, associated to costs of friction, destiny and origin, influence the maximization of human interaction within space. To test that hypothesis the paper presents a formulation of a city growth model derived from economic growth models but with an entropy production function and that relates city size with human, economic, spatial and historical explanatory variables. The model estimated for the Portuguese

cities shows that the adaptation of the economic growth model to a city growth model with spatial variables explain the differentiated evolution of cities providing a spatial explanation for urban hierarchy.

### **Money for nothing? – Analyzing long-term effects of investment grants in Germany**

Dr. Eva Dettmann<sup>1</sup>, Dr. Antje Weyh<sup>2</sup>

<sup>1</sup>Halle Institute For Economic Research, Halle, Germany, <sup>2</sup>Institute for Employment Research (IAB) of the Federal Employment Agency, Nuremberg, Germany

S51-S1 Counterfactual methods for regional policy evaluation: Policies for firms  
IUT\_Room 304, August 30, 2019, 9:00 AM - 10:30 AM

In Germany, various policy instruments exist to support the settlement and expansion of firms and the job creation in disadvantaged regions, and large amounts of money are spend every year. Repeated negative headlines about international 'subsidy grasshoppers' suggest a large risk of deadweight effects and cast doubt on the suitability of the instruments.

The aim of this study is to analyze long-term effects of the largest place-based policy in Germany. Essentially we analyze if supported establishments 'survive' the expiry of a commitment period associated with the subsidy, and if the positive short and mid-term (employment) effects of investment subsidies found in many recent studies are persistent – or at least are still there if the commitment period for the subsidized jobs is expired. A closer look at the employment development will allow first presumptions about the motivation of firms when applying for investment subsidies. And it will give a first hint, if the policy instrument is suitable for supporting economic development in disadvantaged regions in the long run.

We see three special challenges for the analysis: First, the treatment can start basically at every time and treated firms have different treatment durations. Second, our observation period is characterized by a real dynamic economic development due to the financial crisis. Third, a comparatively long observation period is required; besides the pre-treatment time to consider the common trend assumption and the whole treatment period, the post-treatment time must cover at least the whole commitment period of 5 years. We base the analysis on monthly data and use a flexible conditional difference-in-differences approach that enables us to consider individual treatment phases for every treated firm and to exactly define the time when the commitment period of 5 years of is over. Our observation period for every firm lasts at least 61 months after the treatment is finished.

### **FDI inflows in European regions: What role for investment promotion agencies?**

Dr Marco Di Cataldo<sup>1</sup>, Prof Riccardo Crescenzi<sup>1</sup>, Dr Mara Giua<sup>2</sup>

<sup>1</sup>London School of Economics, London, United Kingdom, <sup>2</sup>Roma Tre University, Rome, Italy

S51-S3 Counterfactual methods for regional policy evaluation: Policies for regions and cities  
IUT\_Room 304, August 30, 2019, 2:00 PM - 4:00 PM

Investment Promotion Agencies (IPAs) represent an increasingly common policy tool not only for countries but also for regions to attract foreign investment. While some literature exists on national IPAs, there is no research on the effectiveness of their regional counterparts. This paper aims to fill this gap by exploring the regional impacts of both national and regional IPAs in Europe, analysing how the diverse institutional configurations and strategies relate to investment attraction. The paper leverages an ad-hoc survey on the structure and strategy of national and regional IPAs, developing a differences-in-differences model to estimate their effectiveness in attracting foreign investments to the host regions. This analysis is complemented by counterfactual evidence obtained with the synthetic control method. The findings

suggest that regional IPAs have a positive impact on the inflow of FDI (in terms of both dollar values and jobs created) towards targeted sectors. The evidence on the impact of national agencies on European regions is more mixed. We exploit the heterogeneity in the configuration of IPA structures within countries to investigate the most effective models for investment attraction.

### **Out of the darkness: Re-allocation of confiscated real estate mafia assets**

Dr Marco Di Cataldo<sup>1</sup>, Mr Filippo Boeri<sup>1</sup>, Ms Elisabetta Pietrostefani<sup>1</sup>

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G06-YS1 Regional and Urban Policy and Governance (EPAINOS)

IUT\_Room 101, August 29, 2019, 11:00 AM - 1:00 PM

Can anti-mafia policies contribute to local regeneration? In an effort to tackle criminal groups, the Italian State allows the confiscation of properties belonging to individuals convicted for mafia-related crimes, and their re-allocation to a new use. The policy is considered both as a preventive measure and as a way to partially compensate the society for the harm made by the criminal organisations. Whether and how this measure

has been beneficial for the wider society, however, has not yet been investigated. We test the hypothesis that the policy is able to produce positive externalities on the local community by influencing property prices in the surroundings of confiscated/reallocated properties. To this aim, we first conduct an exploratory analysis on the whole Italian territory, implementing a differences-in-differences strategy at the level of local housing markets. Next, we adopt micro geo-localised data on house sales in all major Italian cities to estimate a hedonic pricing model assessing the effect of re-allocations on the value of surrounding buildings, up to a distance between 100m and 500m. The results unveil a positive and significant effect of re-allocations of confiscated properties, declining with distance. Magnitude and spatial decay are found to vary considerably depending on property type and environmental characteristics. Our research sheds new light on the spatial externalities of institutional signals and on the societal implications of initiatives against organised crime.

### **Evaluating Cohesion Policy effectiveness on regions' growth through meta-analysis**

Dr. Dante Di Matteo<sup>1</sup>

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G06-O4 Regional and Urban Policy and Governance

IUT\_Room 306, August 29, 2019, 2:00 PM - 4:00 PM

Although Structural Funds act as the main financial leverage to encourage the rebalancing of structural inequalities among European regions, substantial literature points out different impacts, absorption and response capacities to the cohesion policies carried out during the various programming periods. The multilevel structure of the CP implies a mediating role from the regional and local bodies for drawing up and shaping the level of interventions, depending on the convergence objective of each region. Among these premises can be found some primary reasons for explaining such heterogeneity among the studies on CP. With the aim to deepen the grounds behind the effectiveness of CP on regions' growth and development, this study is proposing a systematic literature review of studies addressing the impact of cohesion policies on European regions and the role of the different structural and investment funds for achieving objectives spread on the various axes of intervention. A selection of 46 studies was processed through a meta-analysis and it focuses both on econometrical and on qualitative analyses, by including not only economic performance indicators as model outputs, like GDP, but also social indicators, like those assessing

depopulation issues, in line with the primary recent objectives of lagging regions. Among the main highlights, differences in geographical extent and in the use of control variables are presented as the major factors of heterogeneity.

### **The Role of Entrepreneurial Financial Ecosystem in Firm Growth.**

Dr. Filippo Di Pietro<sup>1</sup>, Mrs Manuela Vega-Pascual<sup>2</sup>, Dr. María-José Palacín-Sánchez<sup>2</sup>, Dr. Rafaela Alfalla-Luque<sup>2</sup>  
<sup>1</sup>Joint Research Centre, European Commission, 41092, Spain, <sup>2</sup>University of Seville, Seville, Spain

S19-S1 Regional Entrepreneurship Policy  
UdL\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

This paper examines the relationship between entrepreneurial financial ecosystem and firm growth, at the local level. An analysis is done to expand the knowledge about how regional financial ecosystem influences firm growth and, therefore, the entrepreneurial activity consolidation. Obstacles in access to finance and financial constraints are an important environmental barrier in firm growth, especially in entrepreneur firms' growth, within a single country. This study analyses a cohort of young Spanish small and medium enterprises (SMEs) combining both firm-level and regional level information. Data set for this research consists in an unbalanced panel of 89.358 observations representing every Spanish region for the period 2007-2015. The empirical analysis applies the panel data methodology, specifically the fixed effects estimator (within estimator), measuring young firm growth in terms of annual variation of total assets. Our results show that financial ecosystem is statistically significant, evidencing that the greater difficulties in access to external finance of smaller and younger firms point out the need to develop an appropriate financial environment to favour the growth of the youngest firm. The findings of this study are valuable for entrepreneurs and policymakers and show that efforts at national and European level to solve the financing problems of small and young businesses should continue.

### **Regional economic resilience in the European Union: a CGE analysis**

Dr. Filippo Di Pietro<sup>1</sup>, Dr. Patrizio Lecca<sup>1</sup>, Dr. Simone Salotti  
<sup>1</sup>Joint Research Centre, European Commission, 41092, Spain

S40-S3 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **A Trade Hierarchy of Cities based on Transport Cost Thresholds**

Dr. Jorge Diaz-Lanchas<sup>1</sup>, Associate Professor Carlos LLano-Verduras<sup>2</sup>, Professor José L. Zofío<sup>3</sup>  
<sup>1</sup>Joint Research Center, Seville, Spain, <sup>2</sup>Universidad Autónoma de Madrid, Madrid, Spain, <sup>3</sup>Erasmus University, Rotterdam, The Netherlands

S30-S1 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

Empirical evidence has been lacking to explain trade agglomerations over short distances. Starting with a novel micro-database of road freight shipments within Spain for the period 2003-2007, we break down city (municipal) trade flows into the extensive and intensive margins and assess trade

frictions and trade concentration relying on a unique generalized transport cost measure and three internal borders, NUTS-5 (municipal), NUTS-3 (provincial) and NUTS-2 (regional). We discover a stark accumulation of trade flows up to a transport cost value of 189Euros (approx. 170km) and conclude that this high density is due not to administrative borders effects but to significant changes in the trade-to-transport costs relationship. To support this hypothesis, we propose and conduct an endogenous Chow test to identify significant thresholds at which trade flows change structurally with distance. These breakpoints allow us to split the sample when controlling for internal borders, and to define trade market areas corresponding to specific transport costs values that consistently reveal an urban hierarchy of cities. The results provide clear evidence to corroborate the predictions of central place theory.

### **Economic determinants or personal attitudes? Factors explaining the European regional backlash**

Dr. Jorge Diaz Lanchas<sup>1</sup>, Dr Filippo Di Pietro<sup>1</sup>, Dr. Andrea Conte<sup>1</sup>

<sup>1</sup>European Commission, Sevilla, Spain

S43-S1 Geography of discontent: Explanations and policies  
IUT\_Room 205, August 30, 2019, 9:00 AM - 10:30 AM

A new wave of regional and social discontent is challenging the European Union (EU). Multiple causes have been raised to explain the current and new wave of social misalignment with the European integration process. Going from economic-decline and inequality explanations to perceptions and cultural values theories, several works have put their efforts in disentangling the determinants leading this current European integration backlash.

In this paper we resort to survey data from the Eurobarometer 2018 to assess the role of the multiple causes shaping the regional and social preferences towards the EU, taking into account economic as well as cultural determinants. The use of Partial least Square indicators allows us to differentiate between direct and indirect effects (e.g. feedback effects among variables). We also argue that the regional discontent is not new but the result of a long-term trend that has more abruptly flourished in last years, even when there were previous signals of discontent across the EU regions. To test and confirm this hypothesis we take survey regional data from the Eurobarometer 2005 when the referendum on the European Constitution took place across the European countries.

### **Difficulties in mobilities and inequalities for health care access in Madagascar rural areas**

Dr. Pierrine Didier<sup>1</sup>

<sup>1</sup>INRA, Angers, France

S06-S1 Changes in health care provision, spatial mobility and access to care  
IUT\_Room 103, August 28, 2019, 11:00 AM - 1:00 PM

In Madagascar, a large majority of population lives in rural areas where access to conventional health care is very difficult, due to several economic, political and geographical factors. Clinics and public hospitals, with doctors and medical material, are located in main cities. In rural areas, we find some dispensaries hold by health workers, like nurses and midwife. Medical material is usually very limited in those places.

Based on a fieldwork in Madagascar, I will present the ethnographical observations of villagers' quest for care, in a 600 inhabitants village (Rantolava) on the east coast, in the Analanjirifofo region.

Rantolava is located 20 km north from the closest 15 000 inhabitants' city, where is located the closest small hospital, and is reachable by a 3 km track from the paved road. It is distant from 100 km from the closest city (200 000 inhabitants) reachable by a 4 hours drive, which counts the only regional hospital center.

Villagers of Rantolava mainly live from fishing, farming and rice growing. Only one villager owns a car he uses for his grocery shop supplies. Some others own scooters and bikes. The majority of villagers walk from the village to the paved road where they can wait for a taxi brousse (bus), to go in town. The round-trip fee corresponds to the equivalent of a daily wage of working in fields.

In case of urgent need for care, no villagers can afford to pay for the ambulance fee from the next hospital, and no taxis reach the countrysides. To transport sick people, some villagers use stretchers they have built with bamboo sticks and canvas rice bags. A french resident who lives from time to time in a closed village, and owns a car, used to rent it to transport villagers to the hospital. A majority of people in Madagascar still uses traditional medicines and consults traditional healers, present in every villages. This local therapeutic offer is largely in use and can respond to people's care needs when no other offer is easily available.

Quality of care is unequal regarding location (rural vs. urban areas) as they are conditioned by available qualified health workers, medical equipment and pharmaceuticals. Social inequalities in health care are directly linked, in the case of rural areas in Madagascar, to territories and available transportation within these territories. Mobility is a constraint to choices villagers make in their search for health care.

## **Towards a global standard in defining cities and rural areas**

**Dr. Lewis Dijkstra**<sup>1</sup>

<sup>1</sup>*European Commission, Brussels, Belgium*

S39-S1 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)

IUT\_Room 202, August 29, 2019, 4:30 PM - 6:00 PM

This article presents a new methodology, the degree of urbanisation, and its application to the globe. The degree of urbanisation relies on a population grid to classify local units into three classes: cities, towns & suburbs, and rural areas. These three classes can be further disaggregated into cities, towns, suburbs, villages, dispersed rural areas and mostly uninhabited areas. The population share in rural areas as defined by the degree of urbanisation is similar to the share reported based on national definitions in most countries in the Americas, Europe and Oceania, but radically different in many African and Asian countries. A possible explanation for these differences is that in Africa and Asia smaller settlements are considered rural, while they are classified as urban in the rest of the world. An analysis of the national definitions reported to the United Nations and attempts to replicate these nationally defined shares using density and population size criteria indicate that differences in national definitions (in theory and in practice) make them unsuitable for international comparisons. The global share of population in cities over 300,000 inhabitants, however, is identical between the national definitions and this new method. This implies there is a broader consensus on what is a city than on what is urban and rural. This new definition has been applied to two new global population grids with different methods. In countries where population data is available for very small spatial units, the results are almost identical. In countries where population data is only available for very large units, the results vary substantially. The discrepancies are particularly wide in several African countries. Nevertheless, both grids classify a substantially larger share of the global population as living in urban areas (defined as settlements of 5,000 inhabitants or more) than what is reported by the UN based on heterogeneous national definitions and conventions.

## **The geography of EU discontent**

**Dr. Lewis Dijkstra**<sup>1</sup>, Dr. Andres Rodriguez-Pose

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Over the last decade, political parties opposed to EU integration have almost doubled their votes. The general opinion of the EU has also deteriorated, revealing a growing number of people who distrust the Union. To understand this development, this paper focuses on the geography of EU discontent. For the first time, it maps the vote against EU integration in the last national elections across more than 63 000 electoral districts in each of the 28 EU Member States. It assesses whether a range of factors considered to have fostered the surge in populism have had an impact on anti-EU voting. Research into populism often relies on the individual characteristics of anti-system voters: older, working-class, male voters on low incomes and with few qualifications to cope with the challenges of a modern economy. The results show that economic and industrial decline are driving the anti-EU vote. Areas with lower employment rates or with a less-educated workforce are also more likely to vote anti-EU. Once these factors have been taken into account, many of the purported causes of the geography of discontent either matter much less than expected or their impact varies depending on the strength of opposition to the European project.

### **Evaluation of vertical and horizontal equalization in the EU**

**Dr. Olga Diukanova**<sup>1</sup>

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There is considerable momentum in the world towards increasing the degree of fiscal decentralization. Central governments have greater revenue raising power over the subnational governments, while the latter have advantages in providing place-tailored public services. Although, fiscal decentralisation brings about efficiency gains in the provision of public services, intergovernmental transfers still play an important redistribution role. An important rationale for intergovernmental transfers is equalization of citizens' access to public services. Given that regions differ in revenue-raising capacities, costs and needs for government services, intergovernmental transfers can be discretionary in nature. Central governments distribute a number of earmarked grants to guarantee provision of particular services in a region, particularly health and education. Nowadays many countries decentralize asymmetrically, predominantly on the expenditure side. According to Rodden (2003), Jack (2004), and Rodríguez-Pose et al. (2009) the effectiveness of fiscal reform depends on expenditure decentralization being accompanied by decentralization of fiscal powers, rather than bridging the revenue-expenditure gap with intergovernmental transfers. Of economic questions which arise in connection with fiscal decentralization possibly the most prominent are those relating to the equalization of the access to public services and to the design and the size of intergovernmental transfers. Although, the existing research on fiscal decentralization is mainly qualitative, we aim to bridge this gap by evaluating the economic impacts of horizontal and vertical fiscal equalization on the pattern of regional convergence, using a dynamic multi-regional dynamic CGE model RHOMOLO. We contrast the scenario of equalization of regional per-capita provision of public services (horizontal equalization) with the scenario of equalization of regional tax raising capacity (vertical decentralization). Under the first scenario intergovernmental transfers are distributed inversely proportionally to the regional public expenditures in order to equalize over time the per-capita provision of public services within each country.



Under the second scenario, the regional fiscal power is gradually increased to cover 80% of regional public services, leaving the rest of 20% to be covered with earmarked intergovernmental grants. In other words, the first scenario investigates the outcomes of decentralizing exclusively on the expenditure side, while the second scenario verifies the Oates' hypothesis (1972) according to which a close match between spending assignments and revenue discretion at subnational levels maximizes the efficiency gains of decentralization.

### **Managing social innovation at local level: a quadruple helix approach**

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G20-O2 Social Innovation for Resilient Regions  
IUT\_Room 203, August 30, 2019, 9:00 AM - 10:30 AM

This paper, after a review of the Local Social Innovation (LSI) concept, proposes to use the quadruple helix (QH) framework of interactions between universities, government, companies and civil society (Carayannis & Campbell, 2009) to understand and manage LSI, and aims at assessing, through a case study based on secondary data, the implementation of SI policies driven by QH mechanism in Europe.

The SI is far from being a well-established concept (Pol & Ville, 2009), however it is possible to claim that scholars agree on its contextual and local nature (Moulaert, 2009; Moulaert et Al., 2013).

The theoretical foundation of LSI has to be found in the social basement of the community of people living in a certain place. LSI is focused on the transformation of social relations which are naturally embedded in local systems and territories (Oosterlynck et Al., 2013). Local socially innovative practices may emerge as result of both the engagement and the empowerment process of different actors at local level (Sharra & Nyssen, 2010) and they can be sustained by new technologies developed by firms (Mulgan et Al., 2007), new forms of public governance (Moulaert et Al., 2005) and supported by knowledge produced by research institutions (Benneworth & Cunha, 2015). Therefore, it is proposed here to adopt a QH perspective both to understand and to guide such process.

In this regard, the growing interest of policy makers in SI (EU, 2013) has led to the design of the Urban Innovative Actions (UIA) which is a novelty among EU schemes of structural funds. It requests projects to be submitted by quadruple helix partnerships and led by municipalities; in fact, the UIA aims at sustaining cities to tackle innovative solutions to achieve sustainable and inclusive development goals related to urban poverty, housing, integration of migrants and refugees.

After an in-depth analysis of two projects based in different Italian cities (Bologna-North and Pozzuoli-South) it is possible to claim that local SI can be exactly identified in the activation of new and successful relations among subjects pertaining to quadruple helix configurations (Bologna); however, barriers playing against such collaborations may arise (Bellandi et Al., 2018) due to different organization's objectives (Pozzuoli). When implementing quadruple helix policies for local SI thus, local governments need to adopt an experimentalist governance (Sabel & Zeitlin, 2012) supported by evidence-based approaches, profiling of QH actors' constellations, and adequate participatory methodologies (Hamlyn et al., 2015).

### **A Study on The "Two-Way" Flow of Urban and Rural Talents Under The Background of Chinese Rural Revitalization**

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G23-O1 Rural Issues  
MILC\_Room 410, August 29, 2019, 2:00 PM - 4:00 PM

**Research Objectives:** The key to the revitalization of rural areas lies in the revitalization of talents. To analyse the influence mechanism of regional and local quality, especially the equalization and convenience of public services on the two-way flow of urban and rural heterogeneous talents. **Research Methods:** By constructing a spatial general equilibrium model which integrates the functions of income equality, public service choice and migration friction, this paper USES mathematical analysis and numerical simulation to reveal the internal mechanism of the "two-way" flow of heterogeneous talents between urban and rural areas. **Research Findings:** By Raising wages and improving local ecological conditions will help attract more talents. According to the "critical condition of talent pendulum", when the interregional convenience effect is equal to the regional convenience effect, the spatial distribution of urban and rural talents presents a stable state. When the regional convenience effect is greater than the inter-regional convenience effect, improving the types and quality of local public services is conducive to attracting talents to move to the region. When the inter-regional convenience effect is greater than the intra-regional convenience effect, improving the types and quality of local public services is not conducive to attracting talents to move to the region. The improvement of the convenience of public services in the region and the consumption of public services in the other region is conducive to the relocation of talents to the region. **Research Innovations:** Research on systematic integration of talent location selection by integrating multiple migration mechanisms. **Research Value:** To provide scientific theoretical basis for promoting the revitalization of rural talents.

### **Breaking-up the R&D and innovation value chain: implications for regions**

Dr. Mafini Dosso<sup>1</sup>, Dr Paulina Ramirez

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G07-O1 Innovation and Regional Development  
UdL\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

This study examines the partitioning and international configuration of MNEs' research, development and innovation (RDI) value chains. Despite significant advances in our understanding of the internationalisation and globalisation of innovation activities, in the main, quantitative studies have tended to see RDI as aggregate, integral and homogeneous activities measured through patents, research spending and technological alliances. Much less is known about how MNEs are partitioning and organising their RDI function and how this influences the configuration of global innovation networks (GINs) in different industries.

We use quantitative and qualitative data in an exploratory manner in order to describe and identify how MNEs from different industries are fragmenting and reconfiguring their RDI value chains. Our methodological framework combines (i) quantitative data on greenfield foreign direct investments in R&D, Development, Design and Testing and Education and Training and (ii) structured and semi-structured interviews to senior R&D managers from top R&D-investing companies. Our results suggest important evolutions in the fragmentation of the RDI value chain around distinct GINs actors: collaborations with universities and research institutes, contract research organisations (CROs) and manufacturing suppliers: Important implications for regions follow from our results. For those who aim to attract FDI in RDI as part of their growth strategies, it is necessary to understand which factors are likely to attract and embed different types of RDI activities. Moreover, it is important to identify the impact on local learning, technological accumulation and diversification of investments in these different RDI activities as well as their inter-related character. This includes understanding the linkages in between manufacturing and RDI activities as in some industries the co-location of these tasks is important for production and innovation. In these cases the loss of manufacturing can result in the loss of important regional RDI activities and capabilities.

How local RDI institutions, suppliers as well as manufacturers integrate into the GINs of MNEs and the opportunities this offers for learning and upgrading can also have important implications for innovation and

territorial/regional development. The outsourcing of RDI tasks to independently-owned, internationally dispersed, CROs and manufacturing suppliers means that regions can participate in the global economy even without FDI. This requires greater attention to the needs of local RDI suppliers as well as manufacturing sub-contractors, needs which are often different to those of the MNEs. These suppliers can become the basis of new industries and value-chains (local or global) opening new opportunities for regional and industrial innovation-led development.

## **Public policy evaluation in theory and practice: evaluating smart specialisation strategies to feed the European Cohesion policy cycle**

**Mr Mathieu Doussineau<sup>1,2</sup>**, Dr Katerina Ciampi Stancova<sup>1</sup>

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S54-S1 Evaluating Smart Specialisation: early evidence on policy implementation and economic transformation

IUT\_Room 304, August 29, 2019, 9:00 AM - 10:30 AM

The emergence of RIS3 requests a new approach in envisaging the monitoring and evaluation. As Monitoring and evaluation processes should be strongly linked, an additional layer of complexity has appeared impacting also directly our way to envisage the evaluation process. Technically and ethically, the evaluation should be independent from managing authorities (implementers) and monitoring not. The combination of the two approaches should lead to concrete recommendations. Monitoring should feed independent external evaluation. Objective of the evaluation process is to capture impacts of measures implemented through strategies. Evaluating public policies at mid-term triggers important challenges and bottlenecks. First, because the strategy is ongoing, the evaluation process has to cope with the incompleteness of the information with a lack of tangible information (scarcity of indicators). Evaluation cannot then only be based on quantitative reliable information but also on more qualitative element of impact. This scarcity of quantitative information makes any pure econometrical approach not possible when academic theories of evaluation are mostly based on a quantitative approach.

Moreover, the originality of the RIS3 approach is that it requests a behavioural change from managing authorities and stakeholder, avoiding the maximum as possible silo thinking approach. In this respect, not the impact of the implementation RIS3 should be evaluated but also the design phase which requested a significant stakeholder's engagement through the EDP with choices taken at this moment. The 2016 report on Cohesion Policy and Research and Innovation Strategies for Smart Specialisation (RIS3) has pointed that strategies have delivered a mixed picture, notably regarding the choice of priorities, which is often seen as too generic or insufficiently connected to regional economic and innovation structures, meaning that smart specialisation strategies need to improve in this regard.

Ex-post Public policies evaluation theories seem to be disconnected from the practice. The lack of policy implication in evaluation theories reduces their utility when feeding the policy cycle with concrete recommendations. The question would be how to design a generic methodological approach to provide to regions for the evaluation of their respective Smart specialisation strategy considering the lack of tangible information and the important behavioural dimension of the S3 process and the high disparity regions (in terms of size, economy, role in the national ecosystems etc.)

## **Exploring spatial discontinuities: Evidences on the effectiveness of regional development policy in Brazil (FNE)**

Ms Tássia Germano de Oliveira<sup>1</sup>, **Ms Gisleia Duarte<sup>2</sup>**, mr Raul Silveira Neto<sup>1</sup>

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Regional policies have been the main strategy of countries to reduce territorial inequalities. In general, heavily based on large investments in infrastructure, tax incentives and subsidies to capital and research and development, seek to foster productive activity in less developed regions. In Brazil, the Constitutional Financing Funds of the Northeast (FNE), the North (FNO) and the Midwest (FCO) are the main financing mechanisms of the Regional Policy in the country. Regardless of the importance of the theme, Brazil is still among the most unequal countries, where regional disparities continue for decades, despite public interventions. This paper aims to contribute to the literature by bringing new evidence on the effects of developing countries' regional policies. In particular, we explore a spatial discontinuity that delimits the area of eligibility of one of the main regional policy in Brazil, FNE. This paper evaluates the efficacy of Financing Constitutional Fund of the Northeast (FNE) loans using spatial discontinuity regression in municipality level. In relation to FNE, the results indicate a negative impact on informal sector employment and no impact on the growth rate of employee, during the period 2010-2015.

### **Geography, Technology, and Urban Areas**

Mr Christian Düben<sup>1</sup>, Ms Sandra Achten<sup>2</sup>, Prof. Melanie Krause<sup>1</sup>

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G04-YS1 Regional and Urban Development, IUT\_Room 110, August 29, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Smart Specialization in Smaller Territorial Breakdown than NUTS2?**

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G06-O7 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 11:00 AM - 1:00 PM

Recently, there is a sharply growing interest in regional specialization and its changes from both governmental institutions and academic society. The smart specialization concept was implemented in the EU policy in 2014, stating that NUTS2 regions have to find their path to regional development and to specify areas where to concentrate efforts for promoting innovative activities and higher value added. It is supposed to be a new political approach of regional innovation policy at the EU level. In some European countries national governments decided to adopt similar approaches to regional policy in their inner regions, commonly at NUTS3 level. This paper follows these thoughts and tries to give insights into specialization changes in smaller territorial breakdown than NUTS2. It is questionable if smart specialization approach could foster higher value added and innovativeness in non-capital regions with lower GDP per capita. In this research we analyze the case of Lithuania and results support the idea that non-capital regions with lower GDP per capita specializes in sectors that have lower productivity level, such as agriculture, forestry, wood, garment sewing, etc. Some of these regions are production sites for foreign investors because of lower production costs. Deepening concentration in current sectors probably will not cause significant productivity growth. Because of that new related areas of specialization in higher level of the value chain have to be fostered and developed.

### **Cultural Activities and Entrepreneurship in Peripheral Regions – in a Vicious Circle?**

**Dr. Giedre Dzemydaite**<sup>1</sup>

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G04-O7 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 9:00 AM - 10:30 AM

Recently, there is a growing need for regions to develop their innovative capacity and to be competitive in global markets. Cultural activities suppose to take significant part in regional policy. A lot of discussions in academic and policy level came after European Council conclusions (2010/C 135/05) on the contribution of culture to local and regional development stating there is an evident link between culture, creativity and innovation contributing to social and economic progress and that there is a need to encourage strategic investment in culture and cultural and creative industries at local and regional level, in order to foster creative and dynamic societies.

The aim of this research was to analyze intensity and impact of cultural activities on peripheral regions, taking into account public spending for cultural projects. 10 NUTS3 Lithuanian regions were involved, while taking a differentiated analysis of 3 mostly urbanized areas. We used data from Ministry of Culture, Lithuanian Council for Culture and National Statistics of 65 cultural (infrastructural, demand and supply sides), economic and social indicators which were involved in a hierarchical cluster analysis.

This paper supported the idea that there were two way relationships between entrepreneurship and the intensity of cultural activities in the regional level. The peripheral regions were lagging in both – cultural and entrepreneurial activities. It was seen that government programs was not sufficient enough to change this situation.

Government programs for cultural and art activities in Lithuania were organized in uniform way at the national level. These programs aimed to support various cultural activities that could contribute to growth of social capital, inclusion of various social groups in cultural activities, enhance entrepreneurial activities, etc. Although, actors from different regions had participated, the highest intensity of participation was from the most entrepreneurial areas. Lagging regions were less active. Regions that mostly needed financial support for cultural and art activities were lagging to participate. In peripheral regions cultural activities were implemented mostly by public enterprises. There was much small number of private initiatives that participated in calls for funding.

A vicious circle in peripheral regions was seen. A lower entrepreneurial level in peripheral regions supposed to lead to a lower number of cultural projects proposed that led to smaller number of cultural activities. Smaller intensity of cultural activities supposed to have a smaller impact for the society. A discussion question arose how to support more private initiative in smaller and lagging regions.

#### **Work 4.0: Fourth Industrial Revolution and its impact on the workforce development in Poland**

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G05-O3 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 4:30 PM - 6:00 PM

The publication of the green and white papers on Work 4.0 in Germany launched a discussion on the concept originating from the idea of Industry 4.0 – Work 4.0 and provided an insight into the future work perspectives, scenarios and opportunities. The documents underline that the debate on Work 4.0 is an essential extension of the discussion about the Fourth Industrial Revolution (4IR).

Having in mind that the process of building capacity for the change also contains such components as providing suitable labor force, creating new business solutions and more effective ways of management,

this article aims at describing the status quo of the Polish labor market in the perspective of future challenges posed by the digital transformation. By means of various datasets and computation of simple indicators the author seeks an answer to the following question: is the Polish workforce ready for the 4IR?

With a high pupil-to-teacher ratio in primary education and long years of schooling that a child receives, Poland has the potential to develop skills accordingly to the market needs. Moreover, growing activity rate together with augmenting share of people with tertiary education constitute a solid ground for promotion of digital skills. On the other hand, Poland's manufacturing industry remains below its peers' productivity levels, with the level of the ICT value added and robot intensity still low.

The paper is organized as follows: first, home and foreign literature concerning the I4 and, more precisely, Work 4.0 problem is revised, then an analysis of the Global Competitiveness Index 4.0 (2018) in the area of human capital and labor market components is conducted. This allows for identifying Poland's shortcomings and advantages in the before-mentioned fields in relation to other countries, particularly to Germany and the Czech Republic. Finally, the focus is set on Poland's labor market characteristics depicted in more detail using national and international data.

### **A new home after death? Residential mobility after the death of a spouse.**

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S06-S1 Changes in health care provision, spatial mobility and access to care  
IUT\_Room 103, August 28, 2019, 11:00 AM - 1:00 PM

This paper sets out to explore how the death of a spouse or partner and the transition into widowhood affects their sequential residential mobility. The loss of a partner has been shown to be associated with changes in several outcomes for the surviving partner, such as changes in psychological health and changes in economic resources but has not yet been linked to residential mobility and changes in housing demand. As the elderly population increases in the western world over the next couple decades we can expect this to be even more widespread, which could affect the housing demand in the future.

By use detailed administrative micro data on hospital admissions and cause of death from 1994 to 2012 combined with data on all households, including socioeconomic background, place of residence, family members etc., we create an extended panel dataset for all people in Denmark between 30 and 80 years old from 1980 and 2016. By using a complementary log-log duration model we can monitor changes in people hazard ratio to move. We find that people who have lost a partner within the past 4 year are significant more likely to move compared to couples where both partners are still alive. Furthermore, we find that this is even more so the case for women than for men. We also find that women with adult children living elsewhere have are even more likely to move, but that adult children living elsewhere don't seem to affect men in a significant degree.

### **Comparing origin-destination matrices derived from smart card data with a large scale OD survey. A case study in Lyon.**

Mr Oscar Egu<sup>1</sup>

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S63-S1 Public transportation and big data: data processing and valuation  
MILC\_Room 310, August 29, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Spatial diffusion of coworking spaces and their contribution to local development**

Prof. Christophe Demaziere<sup>1</sup>, Senior Lecturer Divya Leducq<sup>1</sup>, PhD Student in Urban and Spatial Planning Sarah El Attat<sup>1</sup>

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S08-S2 New working spaces, digital transformations and peripheral areas

IUT\_Room 408, August 30, 2019, 2:00 PM - 4:00 PM

In this paper, we deal with coworking spaces (CWS) in France and specifically in a non metropolitan region, the Loire Valley. CWS first appeared in France in the centres of large metropolitan areas (and firstly in Paris which is a global city). More recently they spread to the outskirts or even to medium-sized cities and/or rural areas. Is the concept of spatial diffusion at work for many technological or social innovations applicable here? If yes (Liefoghe, 2018), what are the drivers? It is possible that more and more knowledge workers will tend to live in places with a good living environment and to work in places far away from urban centers. However, does the diffusion phenomenon of CWS just follow the urban hierarchy, as the case of some French regions suggests? Or do some sparsely populated rural areas, because of their connectivity or their own potential (to be specified), see the emergence of 'clusters of CWS' which could give them an advantage as compared to metropolitan cores? In other words, what is (and what can be) the actual contribution of coworking spaces to the (re) development of non-metropolitan areas?

France is a case of public voluntarism at all spatial levels (the national government, regions, groupings of municipalities...) but it can be questioned whether the policy measures are attuned to the real needs of coworking spaces managers and of coworkers. CWS but also fablabs are confronted with the rigidities of legally-binding comprehensive planning.

The main research questions explored in this paper are as follows: How are new workspaces evolving within a sparsely populated region? And to what extent can they be part of a local/regional development strategy?

See extended abstract online.

### **A New Framework on Urban Economic Resilience**

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S40-S1 Regional Resilience: How can regions survive?

IUT\_Room 203, August 28, 2019, 11:00 AM - 1:00 PM

The concept of resilience which has been first introduced in the field of ecology, has been studied in many different disciplinary fields. In particular, because of global concerns on major threats such as disasters, economic crises, diseases, and other threats to human development, the notion of resilience has –despite adversity- become popular. Even though resilience concept is not new concept it still triggers the attention from many fields at different scale levels, both living and nonliving, such as an economy, a microorganism or a child, so as to understand the process of anticipating, adapting and recovering in the face of major threats. The concept itself is not easy to operationalize in practice. However, having various types of definitions from various fields and studies leads to a very complex framework to measure and analyze the resilience concept. That is why it is crucial to understand the concept with all dimensions, determinants and levels from a new and broader framework for both natural and social sciences. In this paper, we look into the urban resilience concept from many perspectives in order to define and measure it in an appropriate way. The aim of this

paper is to present a new framework on urban economic resilience with a new dimension which is called spatiality and indicators which are based on urban forms, by taking into account the advantages and disadvantages of existing urban resilience definitions in the literature.

### **ReMoBel: a supply-side macro regional model for Belgium**

**Mr Christophe Ernaelsteen<sup>1</sup>**

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S34-S2 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 2:00 PM - 4:00 PM

Macroeconomic models are one of the tools commonly used by economists to forecast and analyse economic policies. Based on the tradition of Keynesian paradigm, many of them focus on demand side to estimate impacts of policies on the economy through stimulations of final demand (household and public consumption, investment, exports...). Other models incorporate supply-side mechanisms in order to assess effects of policies that target long-term economic growth by improving the development potential of the economy. In the recent literature, two additional features were particularly taking into account in those models, namely the integration of the dynamics in general stochastic equilibrium model (DGSE model) and the incorporation of geographic and spatial regional effects. For example, the HERMIN model (Bradley and al., 1995), the QUEST III model (Ratto and al., 2009), the RHOMOLO model (Brandsma and al., 2015) and the GMR-Europe model (Varga and al., 2018) were developed to study simulating policy scenario in Europe and analysing impacts on the regions of the EU Member States.

The aim of our contribution is to present a preliminary version of a supply-side macro-regional DGSE model for Belgium. The model will integrate sectorial dimension of the Belgium economy and macro-regional input-output dynamics at the level of NUTS2. Particular attention will be given to the most recent regionalization methods. In Belgium, different level of public authorities are in charge of R&D, innovation and human capital development policies. Especially, regional governments finance R&D, federal government subsidize space research and community governments are in charge of education (human capital development). The model will also integrate this particularly features of the Belgium institutions.

### **Regional impacts of the increasing grain exporting flow through Brazilian Northern ports**

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G16-O6 Transport, Land Use and Accessibility  
IUT\_Room 110, August 30, 2019, 11:00 AM - 1:00 PM

The Brazilian grain production is exported mostly through the Southeast and South ports, which represents a large distance to transport the grains produced in the Center West region. The objective of this research is to analyze the economic impacts of increasing the grain exports from the Center West (CW) region through the Brazilian northern ports using the PAEG computable general equilibrium (CGE) model, to identify the direct and indirect effects in the Brazilian regions. PAEG is a static, multi-regional and multi-sectorial model, representing the production and distribution of goods and services in the world economy. The database comprises bilateral flows of trade between countries and regions, as well as transport costs, import tariffs and export taxes or subsidies. The first step was to calculate the reduction in transportation costs due to the smaller freight prices and distances to the Northern ports considering the potential capacity of these ports. Increasing the grain exports through the North region would generate efficiency gains about 8% in the



transportation costs, which supported the shocks applied to the input “transport” in the agricultural sector of the CW region. The main results indicated that increasing the CW agricultural exports through the Northern ports increases Brazilian GDP and increases bilateral exports from Brazil to China, Europe and USA by up to 2%. The results also indicate an income concentration: Center West GDP and welfare grow in all the analyzed scenarios and the gains come from the other regions of the country. The economic impacts are not larger because "transport" is only an input of the agricultural sector in the PAEG model and the investments to construct or repair the roads from CW region to the northern ports were not considered in this analysis. In spite of the positive impacts to the agricultural sector a negative indirect effect (not measured) might happen: increasing the transportation through the North region tends to attract more business, which might contribute to increase the Amazon deforestation. The alternative of increasing the transport flow through the North has been shown effective, but it does not solve the logistic deficit that challenges the Brazilian agribusiness performance nor does it reduce the regional differences in Brazil.

### **The statistical properties of the networks of emigrants: the Ecuadorian case**

**Prof. Alexandra Espinosa**<sup>1</sup>, Prof. Luís Horna<sup>1</sup>, Prof. Rodrigo Mendieta-Muñoz<sup>2</sup>, Prof. Nicola Pontarollo<sup>3</sup>

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S41-S5 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 29, 2019, 2:00 PM - 4:00 PM

This paper shows that the threshold model appropriately analysed can explain the emigration process as a consequence of the network features, where the willingness to emigrate depends on the personal and household conditions borne by the emigrant. In such a case, the emigration process can be defined in terms of a Pólya schema, and the emigration rate converges almost surely to a random variable with a beta distribution, which fully characterises the network (assimilation, integration, separation or marginalization). The model is applied to Ecuador, which has experienced an unprecedented wave of emigration since 1998. We show that, despite the massive exodus, the process does not constitute a diaspora, because Ecuadorians do not appropriately interact with natives.

In this paper we model the four strategies identified by Berry (1997), constructing a framework that combines the properties of the threshold model and the network framework to find the statistical properties of the network of migrants. Our main contribution is the characterisation of the strategies (assimilation, integration, separation and marginalisation) through the statistical properties of the emigration rate. This approach can be considered an analysis prior to any intervention, predictive for countries that do not have experience of integration of immigrants from a specific origin. The paper is structured as follows. In Section 2, we introduce integration and migration theories and show that the sequence of decisions (to emigrate or not) can be modelled as a Pólya Urn, under the assumption that the probability of emigration is a continuous function of the emigration rate. Therefore, we show the emigration rate has a beta limiting distribution, which fully characterises the network created abroad by migrants of culturally homogeneous groups. In Section 3, we apply this framework to the Ecuadorian case. Section 4 provides some conclusions and policy implications.

### **A text mining approach to investigate urban planning documents: study case of Reunion Island**

**Ms Eve Etienne**<sup>1</sup>, Mr Jean-Philippe PRAENE<sup>1</sup>, Ms Divya LEDUCQ<sup>2</sup>, Mr Jean-Claude GATINA<sup>1</sup>

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In France, land-use planning is governed by a set of planning documents. The latter are articulated among themselves at different spatial and hierarchical scales. At the municipality scale, the urban planning document used as reference is the Local Urban Plan (PLU). This one defines the own long-term orientations and rules of the planning of the place. Reunion Island is a French region, and since the last years, municipalities are replacing their earlier urban planning document, the Land Use Plan (POS), by a PLU. One of the documents composing the PLU is the Sustainable Planning and Development Project (PADD). It indicates the general politic orientations to contribute to the sustainable development of the locality, the general orientations for housing and amenities development and the concrete objectives concerning land-use and urban sprawl. However, the PADD seems to show similarities for one to another, while this document must be specific to its locality.

This paper aims to analyze the PADD of Reunion island municipalities with the text mining approach. The latest versions of the gathered PADD constitute the corpus. Frequencies and correlation analyzes, document clustering and topic modeling methods have been used to understand the main topics of these documents better. Then, filtering methods have been applied to the corpus in order to extract strategies of these territories for their sustainable planning. After that, most common terms have been associated with most adapted main topics (chosen keywords) in order to traduce the information to a simplified model, based on the contribution of these keywords. Finally, these outcomes have been compared with results of the same methods applied on draft-copies of existing "Eco-PLU" in order to determine the differences between them. First results show some significant similarities between the different PADD, due to the same structuring of the documents, but also to their conformity and/or compatibility obligations to higher urban documents. It is possible to extract the main strategies of these territories: particularities of these PADD are highlighted. However, common profiles of PADD are not ever associated with similar territories.

One of the issues discussed focus on the extent to which the localities characteristics are taken into account throw the urban planning. The second concerns the real adequacy of these PADD for the sustainable urban planning of their localities, and more particularly its capacity to deal with rapid changes of the territories' and population needs facing to its long-term orientations.

### **Territorial re-scaling of governance for improved rural and regional development?**

**Prof. Grétar Eythórrsson<sup>1</sup>**

<sup>1</sup>*University Of Akureyri, Akureyri, Iceland*

Challenges to rural regional development in Iceland have been many in the last 30 years or so. While the capital area in the south-west around Reykjavík has had population growth, a big part of the country has had population decline and problems with economic development. Regions such as Westfjords (with 33% depopulation since 1990), North-west, parts of North-east and south region have suffered from negative population development for decades. One of the suggested explanations to this is the great fragmentation of the local government system - a population of almost 350,000 and 72 municipalities, an average population of 4,840. Reykjavík is the largest municipality with a population of 126,000 - median size of an Icelandic municipality is 886. More than 1/3 of the municipalities have population of less than 500 and 55 percent less than 1,000, the fragmentation is a fact.

The premises and ability to cope with their tasks – mandatory and voluntary – trying to create and/or maintain living conditions that are according to the 21st century is limited. The small municipalities lack

capacity gained with size, and even they lack the necessary economy of scale (see Baldersheim and Rose 2010).

What solutions to try to tackle the problems are possible?

Re-scaling through municipal amalgamations, or through inter-municipal cooperation have since long time been suggested as means in this. By strengthening municipalities so they can cope with their tasks, better provision of services can be reached. Better living conditions provided can, therefore be means to cope with the depopulation. Inter-municipal cooperation has also been used in order to solve the disadvantages of small size.

In this paper I intend to deal with the question whether municipal amalgamations or inter-municipal cooperation have been successful means in this struggle. I will go through relevant literature on this and even go through evidence that has been brought forward. The results could give indication on what can be done to improve regional and rural development in Iceland and even other countries.

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### **BRIDGES – Territories with geographical specificities: Social Innovation in East – Iceland. “Fish Factory Creative Centre” in Stöðvarfjörður.**

Prof. Grétar Eythórsson<sup>1</sup>, Hjalti Jóhannesson

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G20-O1 Social Innovation for Resilient Regions  
IUT\_Room 203, August 29, 2019, 4:30 PM - 6:00 PM

In late 2017 the project BRIDGES – Territories with geographical specificities was granted support from the ESPON program. The final report will be delivered to ESPON in April 2019.

<https://www.espon.eu/geographical-specificities>

It focuses on regions with specific territorial features who have received increasing attention in recent years, most notably in article 174 of the Treaty on the Functioning of the European Union (TFEU). The main purpose of this project is to address the opportunities and challenges of specific types of territories implies that these territories need to be considered in context rather than ‘singled out’. These types of territories constitute the main focus for this project: sparsely populated regions; mountain regions; Islands, including island-states and coastal areas. A central question is: “How can place-based, smart and integrated approaches support the challenges encountered by territories with geographic specificities”?

In the project there are 15 different case study areas in Europe working with different tasks as examples of territories with geographical specificities: 1. Specificity of innovation processes 2. Perspectives and strategies for sustainable tourism 3. Accessibility and transport 4. Social innovation in the provision of SGI 5. Social development 6. Social and economic patterns 7. Residential economy as a component of development strategies 8. Physical environment, natural resources and Energy 9. Biodiversity conservation and sustainable development 10. Energy provision and production 11. Climate change

What we want to present is one of the case studies on one of the topics, which also is a case report in the project: Social Innovation in East Iceland.

The case study is about a creative centre in arts and diverse other activities founded in 2011 in the small village of Stöðvarfjörður where the people had some years before experienced a heavy shock in the economic life due to the closure of a fish factory with a great loss of jobs. The aim of the social innovation

project was to contribute to regeneration of the community of Stöðvarfjörður and to help with maintaining economic and social activity. We describe the background of the centre, the organisation and the running of this centre. Further we evaluate the estimated impact of the centre as well as future prospects. This is done with collection of data and several interviews with stakeholders and owners.

### **Transport Infrastructure and Regional Convergence: a Spatial Panel Data Approach**

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G16-O3 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 2:00 PM - 4:00 PM

This article examines the contribution of transport infrastructure to regional convergence in Spain for 1980–2008. We employ spatial econometric techniques that decompose the direct, indirect and total effects of roads, railways, ports and airports. In addition, it complements the analysis by estimating the determinants of the regional allocation of transport investments. The evidence confirms the presence of absolute and conditional convergence. However, only roads appear to have an impact on this convergence process. We also find that the main driver of transport investments has been to equalize the infrastructure endowment between the different Spanish regions. The reduction of inequalities between regions in terms of road provision could explain the positive contribution of roads to the process of regional convergence in Spain.

### **The impact of bankruptcy enforcement on payment periods: evidence from the Italian manufacture industry**

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G09-O3 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 4:30 PM - 6:00 PM

This work aims at shedding new lights on the relation between bankruptcy enforcement and firms' dynamics. The risk of bankruptcy is a relevant topic with significant effects on the market and the society. On the one hand, there is the necessity to defend creditors' rights against debtors' insolvency while, on the other one, there is the necessity to support the national economic system and its reputation on the global market. Considering the Italian manufacturing industry (more than 250,000 observations) and a panel of 3 years (from 2014 to 2016), authors investigate the relation between the time necessary to define a bankruptcy case by courts and the time necessary to re-pay debts by enterprises. In particular, we test the hypothesis that the efficiency in enforcing debtors' obligations can affect the decision to submit an instance of bankruptcy by creditors, increasing the delay of payments.

According to results, *ceteris paribus*, there is a statistically significant positive relation between bankruptcy enforcement and payment periods, confirming the key role of judiciary in firms' dynamics. Indeed, decreasing the time necessary to define a bankruptcy case by 10 %, we can expect to decrease the payment periods by 0.5%. The policy implications of this result could be relevant. Indeed, the policy maker can reform the national bankruptcy law and its current procedure to support the national economic growth, without additional costs for the public budget.

### **Gender balance rules in Italian electoral system: which determinants?**

Ph.F. Greta Falavigna<sup>1</sup>, Ph.D Lisa Sella<sup>1</sup>, Dr. Igor Benati<sup>1</sup>

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S51-S2 Counterfactual methods for regional policy evaluation: Social and labour policies  
IUT\_Room 304, August 30, 2019, 11:00 AM - 1:00 PM

In the last years, social dynamics of gender equality are increasingly analyzed across many fields. In this context, the present work focuses on gender dynamics in politics, analyzing the effect of the Italian electoral law n. 215/2012 on the active participation of women in municipal elections.

This law introduces “gender balance rules” aimed at fostering female active participation in the political arena and fighting the phenomenon of minor representation, and sometimes the exclusion, of women from Italian political competition at all administrative levels. In particular, the law introduces two mechanisms in medium and large (>5000 inhabitants) municipalities: a gender quota in electoral lists, guaranteeing that no gender counts more than 2/3, and the double gender preference, allowing electors to express two preferences if the candidates have different sex.

The availability of panel microdata on candidates in Italian municipalities for the time span 2008-2016, including the implementation of the electoral reform, allows evaluating its effect in contrasting the exclusion/minor representation phenomenon, getting rid of the endogeneity bias typical of gender studies. Combining spatial, economic and social characteristics of municipalities with electoral data on candidates allows an econometric evaluation of factors affecting the female probability of candidacy. This work proposes an empirical investigation of the main determinants of female participation at the local level. In particular, the Correlated Random Effect panel data framework is applied, which allows estimating both between (cross-section) and within (time-series) effects with no unreliable orthogonality condition imposed between the regressors and the individual unobservable effects. The opportunity to have a panel data allows, through a counterfactual approach, to observe different behaviors in terms of women candidates before and after the gender norm, considering different size of municipalities.

Estimation results are in accordance with main findings in the literature. In particular, female participation declines when average family size increases, implying that higher involvement in domestic activities generally reduces women’s propensity to political involvement. The negative effect of urbanization degree suggests that women are more involved in small-scale activities, while the positive effect of female activity rate suggests that women with higher social capital are more likely to participate in the political arena. Moreover, CRE unobservable effects show different geographical paths (North/South), probably representing the unexplained cultural component.

This study provides very relevant considerations for policy-makers to align disparity between men and women regarding the access to politics. Moreover, results suggest the most suitable instruments to encourage women empowerment.

### **Impact of high-speed broadband supply on local economic activity**

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S03-S1 Engaging with the Digital World: the effects for society, places and individuals  
IUT\_Room 404, August 29, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

### **Attractiveness and efficiency of European universities as hosts for Marie Curie grant holders**

Dr. Martin Falk<sup>1</sup>, Dr Eva Hagsten<sup>2</sup>

See extended abstract online.

### **Defining local housing markets using repeat sales data**

Daniel Felsenstein<sup>1</sup>, Prof Michael Beenstock<sup>1</sup>, Dan Feldman<sup>1</sup>

<sup>1</sup>Hebrew University of Jerusalem, Jerusalem, Israel

S36-S1 Real Estate and the Development of Cities and Regions (ERES Special Session)  
IUT\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

A new empirical approach to identify local housing markets (LHM's) is proposed, which focuses on the spatial correlation between local house price indices constructed from repeat sales data. It extends the work of Pryce (2013) who claimed that if housing in different locations are perfect substitutes, their house price indices should be perfectly correlated over time. Repeat sales data for house prices in Tel Aviv during 1998 – 2014 are used to construct house price indices for almost 100 census tracts. These price indices are used to define LHMs, the number of which varies inversely with the pairwise correlation cut-off, and with the degree of spatial contiguity. Results point to considerable spatial heterogeneity in house price movement. This belies the popular impression that the Tel Aviv housing market is relatively homogeneous, characterized by expensive housing and uniform house price movements.

### **Does judicial efficiency affect firms' access to external finance? Evidence from the 2013 Italian Reform**

Dr Giulia Canzian<sup>1</sup>, Dr. Antonella Ferrara<sup>1</sup>

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S22-S1 The politics of local and regional development  
IUT\_Room 303, August 28, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Timing of elections and public budget allocations in a federal system**

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S50-S1 Fiscal decentralisation and multi-level governance  
IUT\_Room 408, August 29, 2019, 2:00 PM - 4:00 PM

This study analyzes the elections' timing and its effects in the formulation of municipal policies, dividing them into two categories: the short-term and the long-term focus policies. Employing the instruments provided by Game Theory, we built a dynamic set of eight periods with imperfect information, in which two players (local and central policymakers) decide about the budget formulation policy, oriented to maximize next elections results. We analyze two models: first, we discuss a staggered election model, in which elections occur every two years, alternately, to local and central government layers). The second model explores the possibility of unification of local and central elections, in a synchronized way with the

coincidence of mandates of the studied politicians (local and central governments). Results suggest that the vote-seeking behavior drives to sub-optimal allocations in both models, in a kind of anticipation effect. However, we highlight differences among incumbents' anticipation effect: its intensity is higher in local allocations than in central ones, because central expenditures increase local incumbent's image more than the opposite. Moreover, in synchronized elections, the deviation from optimal allocation would be lower than in staggered ones.

### **Proximity and mobility**

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G(01+02)-O2 Mobility and Digital Transformations  
IUT\_Room 408, August 29, 2019, 4:30 PM - 6:00 PM

Torre & Rallet (2005) interestingly questioned the confusion often made in the geography of innovation literature between spatial agglomeration and spatial proximity: co-location is not always explained by a need for proximity and proximity does not always result from co-located actors. More precisely, authors demonstrated a disjunction between the need for face-to-face interactions (i.e. spatial proximity) and co-location since 1) organised proximity allows remote coordination and 2) actors ubiquity capacity allows them to develop temporary geographical proximity. In this article, space is the key issue to explain coordination between actors. The relationship was also mainly studied in a static way as the proximity group' studies did during this period.

Space was at the heart of the initial questioning since time taken to move and coordinate seemed crucial (temporary proximity). Today, the issue is much more related to the ability of actors to coordinate in real time. Time is nowadays major in actors behaviour and space has to adapt to it (see for instance commercial infrastructures physically "reinstalled" to respond to new consumer (cf. Rallet and Aguilera, 2018) or work behaviour (co-working spaces).

We propose to follow up Rallet & Torre (2005) consideration and advance the geography of innovation by no longer putting the space variable at the heart of the questioning but the time variable. The temporal equivalent to the proximity-location relationship leads us to deal with the proximity-mobility relationship. Introducing the mobility issue is a way to introduce the indispensable temporal perspective in the proximity approaches, a perspective that has been sought in recent years but which has remained limited until now. Indeed, the mobility' analysis makes it possible to consider the "deformations" of proximities as actors move, have occasional encounters...

This new articulation (ie. proximity-mobility) makes possible to raise crucial issues related to the coordination of actors in space. Initially Torre & Rallet (2005) focused on the location-proximity relationship by questioning the sequence according to which 1) it is necessary to be co-located 2) to interact face-to-face 3) thus leading to the spatial agglomeration of the actors. The relationship between mobility and proximity would rather question a new sequence: 1) the actors are multi-localized and 2) coordinate each other at different scales simultaneously through synchronization in real or delayed time 3) leading to a coupling between physical concentration and decentralization (eg. warehouses and rallying points/distribution or the Facebook model and its global platform of small communities).

### **The Drivers of Inequality Across European Regions**

**Prof. Davide Fiaschi<sup>1</sup>**, Mrs Lisa Gianmoena, Mrs Angela Parenti

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The most significant stylized fact emerging from the recent literature on European regions is that the cross-regional GDP per worker distribution is characterized by the presence of two peaks and displays spatial agglomeration (Fiaschi et al, 2017; Baumont et al., 2003; Le Gallo et al., 2003; Le Gallo and Ertur, 2003; Fischer and LeSage, 2015).

The presence of spatial clubs in European regions has direct implications for the design of European Cohesion Policy (see, e.g., Farole et al., 2011) and poses serious concerns on the feasibility of a plan of higher fairness among the populations of EU state members as proposed by Juncker (2014), as well as on the long-run (in)stability of European institutions, which appears permanently mined by a pervasive tendency to regional disparities (De Grauwe, 2014). Several, and potentially complementary, candidates for the observed inequality among the EU regions have been advanced in the literature: i) local technological spillovers (Erthur and Koch, 2007), ii) (spatial) heterogeneity in human capital (Glaser et al., 2004), iii) the quality of institutions or other unobserved or not-easily measurable variable with (spatial) heterogeneity as the "culture" advanced by Tabellini (2010).

This paper aims to analyse the sources of inequality in terms of GDP per worker looking at a large sample of European regions. To achieve this goal, we propose a simple model to estimate the drivers of spatial agglomeration which accounts for the role of interregional technological spillovers, physical and human capital accumulation and reallocation of factors across regions. The model is estimating using a spatial fixed panel in a sample of 254 NUTS2 European regions over the period 1991-2012 and it is then used to evaluate the contribution to EU regional inequality of interregional technological spillovers, regional heterogeneity in human capital, and unobserved regional heterogeneity. Finally, we attempt to explain the estimated unobserved regional heterogeneity in terms of "culture" (Tabellini, 2010).

We find that the contribution of interregional technological spillovers is crucial for explaining regional inequality and polarization, estimated unobserved heterogeneity (fixed effects) also explains an important share of inequality, while human capital has not distributional effect. Finally, our proxy for "culture" is positively correlated with the estimated fixed effects but only explained a very low part of the variability.

### **Corporate Social Responsibility as a common good, new form of territorial proximity**

Prof. Maryline Filippi<sup>1</sup>

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S20-S2 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

Enterprises are increasingly involved in enhancing sustainability and societal responsibility. This communication focus on agrifood cooperatives which drive the emergence of new forms of territorial development processes, more inclusive, sustainable and equitable. Farmers in cooperatives could organize new territorial systems in order to better valorize their products but also to guarantee sustainable goals takes into account the interests of all stakeholders and consumers. The background adopts the collective action and cooperative theories (Ostrom, 1990, Cook, 2018), proximity analysis (Pecqueur et Zimmerman, 2004; Torre and Wallet, 2014) and the shared value approach (Porter and Kramer, 2011). We propose a case study using an original French database covering all 186 agricultural cooperatives engaged in sustainable processes, including the 16 certified in ISO 26000 (Afnor 2018) and completed by manager' interviewees. The results point out the role played by the Corporate Social Responsibility as a common good due to close



interactions between stakeholders. The results show that (1) proximity with consumers is a major motivation in innovating and adopting sustainability practices, thereby rendering (2) local interactions essential in order to reconcile economic, environmental and social dimensions. We discuss the means used by cooperatives creating common goods towards more collective and participatory modes of exploitation, management of territorial resources and new form of territorial proximity.

### **Space needs time needs space: The bias of avoiding spatio-temporal models**

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G12-YS1 Location of Economic Activity (EPAINOS)  
IUT\_Room 202, August 29, 2019, 11:00 AM - 1:00 PM

Many questions in urban and regional economics can be characterized as including both a spatial and a time dimension. However, often one of these dimensions is neglected in empirical work. This paper highlights the dangers of methodological inertia, investigating the effect of neglecting the spatial or the time dimension when in fact both are important. A tale of two research teams, one living in a purely dynamic and the other in a purely spatial world of thinking, sets the scene. Because the researcher teams' choices to omit a dimension change the assumed optimal estimation strategies, the issue is more difficult to analyze than a typical omitted variables problem. First, the bias of omitting a relevant dimension is approximated analytically. Second, Monte Carlo simulations show that the neglected dimension projects onto the other, with potentially disastrous results. Interestingly, dynamic models are bound to overestimate autoregressive behavior whenever the spatial dimension is important. The same holds true for the opposite case.

### **The Evolution of Trust in Airbnb: A Case of P2P Home Rental**

Prof. Aliza Fleischer<sup>1</sup>, Prof. Eyal Ert<sup>1</sup>

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S04-S1 The digital transformation of tourism in the city  
IUT\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **What is Regional Science?**

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S01-S2 Regional Science Footprints of Walter Isard  
IUT\_Room Amphi 10, August 29, 2019, 4:30 PM - 6:00 PM

#### **WHAT IS REGIONAL SCIENCE ?**

In the philosophy of science, a distinction is made between the material and the formal object of a discipline. The former is the subject matter; the latter the point of view under which the material object is studied. For example, the material object of the main social sciences, psychology, sociology, economics, human geography, political science and law is the human being or collectives like the household. The six disciplines differ because of their formal objectives. Psychology, for instance, is the science of the conscious

and unconscious mind of man whereas human geography deals with the location and interaction of people, their organizations like firms, and the organization and development of their communities in space. Whereas there is a vast literature dealing with the formal objects of the basic social sciences, it is hard to find a definition of the formal object of regional science that clearly distinguishes it from the other social sciences. Of course, the definition of the material object is straightforward. It is the region, i.e. a part of a larger geographical entity that may range from neighborhoods to parts of a continent. However, there is no definition of the formal object of regional science.

There are at least two compelling reasons why regional scientists should be engaged in debates about its formal object. First, it is a matter of scientific purity that a discipline that pretends to be different and distinguishable from other sciences carefully and meticulously defines its formal object and demarcates itself from related disciplines, yet has the same material object. A second and the most important reason is that it may lead to an inventory of under-explored substantive research topics and methods. To fill the gap I propose the following definition of the formal object of regional science

the systematic integration of the formal objects of the sister social sciences with respect to the material object of the region.

Based on this definition I point out some new substantive and methodological research areas of regional science.

### **Estimation of indirect effects of innovation policies based on science-industry collaborations: The impact of French TRI policy on non-beneficiary SMEs.**

Mr Ruben Fotso<sup>2</sup>

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G07-O3 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

Although knowledge spillovers are at the core of the innovation policy's justification, they have never been properly measured by any impact evaluation. This paper fills this gap by estimating the spillover effects of the Technological Research Institute (TRI) policy in France. The objective of the paper is to analyze and evaluate the indirect impact of innovation programs based on science-industry collaborations to improve innovation policy decisions. More specifically, it analyzes and estimates the effects of technological platforms on the performance of non-recipient SMEs. For that, we consider the French TRI called "Nanoélec", one of the TRIs based on technological platforms, located throughout France. To evaluate the indirect effects, we focus on geographical proximity by considering that the non-recipient companies located in treated department are likely to benefit from local knowledge spillovers. To the best of our knowledge, this empirical work is the first impact study that seeks to evaluate the indirect impact of a TRI on the performance of SMEs. Technological platforms are one of the preferred tools in France to accelerate the knowledge transfer from science to industry. Despite their proliferation, their real impact on performance of the companies remains un-evaluated. Therefore, this study contributes to the literature on the indirect impact of technological platforms. This work also contributes to the literature on the evaluation of innovation policies based on science-industry relations. Indeed, one of the foundations of these innovation policies is to generate the knowledge spillover that can benefit non-direct beneficiaries. Despite the importance of this policy, no empirical study, to the best of our knowledge, has sought to evaluate the indirect effects of these policies. From a sample of 270 SMEs observed over the period 2008-2016, the difference-in-difference method combined with matching methods tend to show that the non-beneficiary companies, located in the treated department significantly improve their socio-economic performance (turnover, financial autonomy and share of managers) compared to control companies located in the control departments. The analysis of the dynamic of the effects indicates that performance does not

improve immediately after the treatment but rather with a time delay. Furthermore, it should be noted that the indirect beneficiary companies that effectively benefit from knowledge spillovers are constituted of local control companies, that is to say, the non-beneficiary companies, located in the control departments, with similar characteristics than those of treated companies.

### **Globalization, productivity and electoral outcomes: Evidence from Italy**

Prof. Andrea Fracasso<sup>1</sup>, Mr. Mauro Caselli<sup>1</sup>, Mr. Silvio Traverso<sup>1</sup>

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S69-S2 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 28, 2019, 2:00 PM - 4:00 PM

We study whether and to what extent the electoral dynamics in Italy over the 1994-2008 period can be explained by the development of economic factors associated with globalization. To measure the level of exposure to globalization for local labor markets, our main unit of analysis, we use the intensity of import competition from China and the presence of immigrants. Looking at parties' political positions and employing an estimation strategy that accounts for endogeneity and time-invariant

unobserved effects across local labor markets, we find that both immigration intensity and exposure to import competition from China have contributed positively to the electoral outcomes of far-right parties, whereas only immigration intensity has increased the vote shares of right-wing and traditionalist/authoritarian/nationalist parties. Some evidence, albeit not robust, shows that immigration may have also had a positive impact on far-left parties, thus possibly further contributing toward political polarization. Moreover, electoral turnout has responded negatively to an increased presence of migrants. While the above effects seem to work through the mediation of labor markets, our results, especially those related to immigration, suggest that other mechanisms at the level of local communities are also at play.

### **Railways, Population Growth, and Industrialization in a Developing German Economy, 1821-1910**

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G16-YS1 Transport, Land Use and Accessibility  
IUT\_Room 104, August 29, 2019, 11:00 AM - 1:00 PM

This paper provides a comprehensive assessment of the effect of railways on the spatial economic development of a German economy, the Kingdom of Württemberg, during the Industrial Revolution. Our identification strategy compares the economic development of 'winning' municipalities that were connected to the railway in 1845-54 to the development of 'losing' municipalities that were the runners-up choice for a given railway line between two major towns. Estimates from both differences-in-differences and inverse-probability weighted models suggest that railway access increased annual population growth by 0.4 percentage points over more than half a century. Railways also increased wages, income and housing values, in line with predictions of economic geography models of transport infrastructure improvements, reduced the gender wage gap, and accelerated the transition away from agriculture. We find little evidence that these effects are driven by localised displacement effects.

## **Depopulation and the Demographic Components of Change: Exploring the Connections in a United States Context**

**Prof. Rachel Franklin<sup>1</sup>**, Dr. Eric Seymour<sup>2</sup>

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S41-S2 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 28, 2019, 2:00 PM - 4:00 PM

Although the United States' population has increased with every decennial census, ongoing redistribution—the outcome of migration, but also regional differences in fertility and mortality—has meant that, even as some areas grow rapidly, others face the challenge of continued population loss. At one level, the classification of areas as shrinking is straightforward; this label can be attached to any place that lost inhabitants in a given time period. A deeper look, however, dispels the facile categorization of places as growing or shrinking: history of change matters, as does the geographic context in which change is occurring. Moreover, the loss of inhabitants occurs in a variety of ways, demographically speaking: loss of population through outmigration (or even lack of net international migration) is different from loss through natural decrease—an excess of deaths over births. And how a place depopulates is important. It provides important information about the fundamental attractiveness of a place (do people continue to move there, on net?), and helps explain the changing characteristics of inhabitants (e.g., their age composition). To illustrate the value of this perspective, we use U.S. counties as the unit of analysis to differentiate shrinking areas based on their temporal and spatial context of change. We then assess the demographic sources of loss for different types of areas, focusing on domestic and international migration, as well as natural increase/decrease. Our results highlight the diversity of kinds of depopulation that exist across the U.S. county landscape and emphasize the role of demography.

## **One policy, different effects: estimating the region-specific effects of EU cohesion policy funds in the long run**

Dr. Paolo Di Caro<sup>2</sup>, **Prof. Ugo Fratesi<sup>1</sup>**

<sup>1</sup>Politecnico di Milano - Dipartimento ABC, Milano, ITALY, <sup>2</sup>Department of Finance, Ministry of Economy and Finance, Roma, Italy

S55-S2 The EU Cohesion Policy after 2020 – How to achieve faster and more impactful spending where it is needed the most?  
IUT\_Room 303, August 30, 2019, 11:00 AM - 1:00 PM

Cohesion policy exists in a form similar to the current one since 1989, i.e. after the reform which followed the Single European Act of 1986. In this long period of time, a large number of academic papers have investigated the impact of the policy, with results which are often not consistent. In the last periods of time, the focus of the literature has been on the fact that the impact is not homogeneous, but mediated by the presence of “conditioning factors”, which can increase the impact in the presence, for example, of human capital or a good quality of government.

However, when estimating the effects of cohesion policy funds on regional economic performance with traditional estimation models, such as panel fixed-effects or spatial models, the assumption of slope

homogeneity for the different cross-sectional units (i.e. regions in this case) is generally made. This implies that the estimated effects are equal for all the European regions, or for groups of them.

To overcome this, this paper has two main objectives, which are novel contributions to the cohesion literature. First, from a methodological point of view, it applies the dynamic Mean Group (MG) estimator, which allows the slope coefficients to differ across panel members, in order to investigate the individual effects of cohesion policy funds in the different European regions. In the presence of regional differences in economic structures and a different amount of cohesion policy funds allocated to the different regions over the years, it is possible that the coefficients of interest show some degree of heterogeneity across regions and that cohesion policy has region-specific effects on economic and labour market variables.

Using recently made available data on cohesion expenditures covering a period of three decades, this paper is the first to our knowledge to apply the MG estimator for the analysis of cohesion policy. This method is important for disentangling the different patterns of good/bad fund absorption across Europe.

Second, wanting to provide a policy perspective, the paper investigates the causes behind the differences in the individual coefficients quantifying the effects of the cohesion policy in the different European regions.

### **Coworking spaces contribution in creating an innovative entrepreneurship ecosystem in cities**

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S08-S2 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 2:00 PM - 4:00 PM

The interrelationship between geographical location and social-economic activity have changed in the last few decades due to the global economy, technological developments, open innovation strategies culture and increasing diversification in the workplace (e.g. atypical employment, multiple job-holding) (Giddens, 1991; Storper & Scott, 2009; Lechner & Boli, 2014). These developments, and the shift to a knowledge economy, are changing the work market. There has been a substantial increase in self-employed workers in the last two decades due to advanced technologies that change the conventional office infrastructure and substitute it with various alternatives.

Although new communication technologies enable working from everywhere, the need for spatial proximity in the work environment - a locatable workplace where common creative ideas can be developed – remains significant. Recently, in many branches, knowledge-intensive work forms became predominant (Knoben, 2006; Wiedmann, et al., 2013). Furthermore, cities that have always been considered as hotspots for creative work will keep these key functions: being suitable workplaces, as well as residential, cultural, and leisurely.

Since 2005 new forms of workspaces have begun to appear; known as Coworking Spaces "CSs." CSs are increasingly becoming the preferred infrastructure for creating a work environment adapted to knowledge workers. At the same time, research on CSs and their suitability for labor force requirements is sufficiently lacking in depth. The rate of knowledge workers in the world is growing significantly, and a large number of them are freelancer entrepreneurs today. In the near future, a considerable part of the workforce will turn to freelancing for which the CSs is the optimal solution.

This study intends to expand the investigation on CSs focusing on the city of Tel Aviv, a city which has experienced impressive growth of CSs in the past years and is considered as the one of the world's leading start-up locations.

## **Roman rule, present-day personality features and socioeconomic outcomes in German regions**

**Prof. Michael Fritsch**<sup>1</sup>, Prof. Michael Wyrwich<sup>2</sup>, Prof. Martin Obschonka<sup>3</sup>, Dr. Fabian Wahl<sup>4</sup>

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S25-S2 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 2:00 PM - 4:00 PM

We investigate whether Roman presence in the southern part of Germany had long-run consequences on present-day personality profiles of citizens in these regions, with potentially important consequences for the future socio-economic trajectories of these regions. Did the Roman Limes Wall establish a cultural borderline that still divides today's Germany in terms of local mentality and character?

To answer this question, we exploit regional-level data from a recent online survey on the Big Five personality traits in Germany. These data are combined with historical information on the location of the Roman border, Roman cities, and Roman roads.

Our regression analyses, comparing all German regions, indicate that there is a significantly positive "Roman effect" on the regional levels of extraversion and agreeableness, and a significantly negative effect one on the regional level of neuroticism among today's population in Germany. Furthermore, today's German regions in the former Roman Empire seem to have a higher entrepreneurial spirit (entrepreneurial Big Five profile) than other German regions, offering a new interpretation of the already well-established finding that southern German regions that were under Roman rule are economically better developed today than non-Roman regions in Germany. In order to address questions of causality, we claim that, based on insights from previous research on the cultural and economic imprinting effect of Romans rule, the Roman border was drawn in an unsystematic way, in order to secure the minimum area necessary to connect the two provincial capitals Augsburg and Mainz. That is also why parts of the Limes follow straight lines (i.e., ignoring of topographical conditions). The same also holds true for Roman roads, which usually did not follow the least-cost path but rather were as straight as possible. To control for alternative sources of today's regional personality differences, we include several historical and geographic controls, as well as federal state fixed effects in order to further mitigate the possibility of unobserved heterogeneity biasing the estimations.

We show that the specific character of Southern Germans as formed by the legacies of the Roman Empire is significantly connected to regional levels of life satisfaction and other socio-economic outcomes, illustrating the "real world implications" of today's regional personality profiles that may be traced back to Roman rule.

## **Employment biographies of East and West German PhD graduates in reunified Germany: Same qualification, same labor market outcomes?**

**Dr. Michaela Fuchs**<sup>1</sup>, Andreas Rehs<sup>2</sup>

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G05-O4 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 9:00 AM - 10:30 AM

28 years after the German reunification, there is an ongoing public debate about the representation of East Germans in political, societal and economic elite positions. We enter this discussion by examining the labor market outcomes of 3,700 native East and West German PhD graduates who completed their dissertation between 1995 and 2010. In both parts of the country, these graduates can be considered as equally

qualified to enter elite positions and should arrive at similar outcomes with respect to wages and jobs requiring a high skill level. We link information on the place of birth collected from data on PhD dissertations in Germany with administrative social security records providing detailed information on individual employment and wage biographies. Besides a detailed description of the two groups of PhD holders, we apply logit models to assess whether there are any significant differences in the wage levels and in the skill level of the obtained jobs. Based on a large set of control variables, first results indicate that after five years of having received their degrees, East Germans are likely to earn lower wages than native West Germans when working in East Germany. For those PhD graduates with the place of work in West Germany, wage differences are not significant. Regarding the occupation of jobs with a high skill level, the findings show no effect of the place of birth. Instead of having an East or West German origin, it is rather the degree of labor mobility that seems to play a role. These first results suggest that labor market outcomes of East and West German PhD holders differ to some extent, even though their qualification is the same.

### **Fishery Resources Exports and Resources Management: An Empirical Analysis on Global Marine Fisheries**

**Prof. Takamune Fujii**<sup>1</sup>

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G14-O1 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 11:00 AM - 1:00 PM

As the deepening of globalization, world trade of fishery resources has sharply increased. Because fish stocks are hard to be managed, sharp growth of fishery trade may cause the overexploitation of world fishery resources. For instance, the theoretical model developed by Takarada et al (2009, mimeograph) implies that internationally open access resources may be reduced when they are traded. In this paper, we examine the effect of trade on the exploitation of fish stocks empirically. The empirical framework is based on the model of McWhinnie (2009, J. Env. Econ & Man 57.3) to investigate whether international shared resources are more exploited. Our empirical models are constructed by McWhinnie's benchmark model and arranged to examine the relationship between exploitation and trade of fish stocks instead of internationally sharing. The empirical results by using micro-level data of fishery trade in EU (6-digit in HS code) and exploitation information by FAO's "Review of the State of World Marine Fishery Resources", and Sea Around Us project imply that the fish stocks are tend to more exploited and tend to be reduced when they are traded. These results are consistent with the theoretical consequence by Takarada et al., and suggest that fishery stocks should be more effectively managed to prevent overexploitation.

### **Unraveling the spatial and temporal cruising patterns with a serious parking game**

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S58-S1 Serious Games and Urban Studies  
IUT\_Room 108, August 29, 2019, 9:00 AM - 10:30 AM

Understanding the behavior of drivers in response to parking prices and cruising time is crucial for establishing effective parking policies. We investigate this behavior with PARKGAME, a serious game. PARKGAME players navigate a virtual road network using keyboard keys in attempt to find parking and walk to a destination before a fictional meeting starts. They cruise the neighborhood of a common destination in attempt to park on-street at a low fee. Parking is always available at a high price at a parking lot that is located, depending on the scenario, at a different distance from the destination. The player who arrives late pays an additional lateness fee out of a starting budget. Parking sooner and closer to destination is lucrative.

49 participants were recruited to participate in PARKGAME sessions. Players displayed consistent cruising behavior. Risk averse players repeatedly headed to the lot while risk takers continued cruising even if fined for lateness. Spatial cruising patterns depend on the relative distance between lot and destination. Game experiments made it possible to construct a formal spatial model of individual parking search behavior as a biased random walk towards destination.

### **Socio-Economic Factors Affecting the Innovativeness of Start-ups in Japan: Comparative Analysis between Social Enterprises and Commercial Enterprises**

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G21-O2 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 2:00 PM - 4:00 PM

Social enterprise and social entrepreneurship which execute dual-mission have potential to contribute the inclusive growth and development of the society. Since the 2000s, social enterprises in Japan have achieved growth and reached a certain scale in terms of value added and employment of the economy. However, realizing the sustainable development of the business is difficult while creating highly innovative products and services as well as solving social problems.

On the other hand, there are various empirical researches about the entrepreneurship and start-ups that are focusing on the entrepreneurial motivations of entrepreneurs, and institutional and social factors. However, there is few researches focusing on factors affecting the innovativeness of star-ups from the viewpoint of comparative perspective between social enterprises and commercial enterprises.

The purpose of this study is to clarify socio-economic factors affecting the innovativeness of start-ups in Japan by using the multi-method approach. It simultaneously clarifies specific factors for the social enterprises based on the comparative analysis between social enterprises and commercial enterprises.

Specifically, quantitative and qualitative analyses are used in this research. Firstly, exploratory and confirmatory multi-variate analyses are applied to the micro-data at enterprise level based on the Survey on Actual Conditions of Start-ups in 2013 (conducted by the Japan Finance Corporation, Comprehensive Research Institute). Secondly, Text Mining method is applied to the document data collected from the representative cases of start-up in innovative social enterprises. Finally, based on the analytical results, some practical and policy implications will be drawn for the development of the social enterprises in Japan.

### **Rebuilding a learning space in the city: spatial and socio-cognitive effects of using a 3D virtual world at school**

Ms Martine Gadille<sup>1</sup>

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G(01+02)-O1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 4:30 PM - 6:00 PM

In this paper we deal with the spatial and socio-cognitive processes at stake for students and their family when a three-dimensional collaborative virtual world is used at school. The technology of 3D-virtual world is broadly used at home by young people aged 11-14 when they play with the current generation of online video games where people are embodied by avatars in immersive environments. Inversely, the uses of this technology in the secondary school with an educational purpose has not followed the same spreading in all countries, even they have been in existence for over 20 years. But the new educational challenges such as



teaching personalisation, associated to the spreading of digital tools and communities seems to coincide with a resurgence of interest in this technologies and their accelerated uptake in education. A literature has developed since the 2010 focusing on the assessment of techno-pedagogical uses of 3D virtual worlds and their interest for learning design and teaching practices with the purpose to better know when and how they can be successfully used. It acknowledges that learning technologies, when used well to carry out tasks, allow high engagement and active learning between school and life. The originality of our proposal is to identify from the educational uses of a virtual world in a secondary school, the restructuring effects, at the urban level, of a learning space. Two kinds of changes are identified through observations. Firstly, we show how uses in class are shaping uses at home. We focus on the performative effects of embodied cognition, allowed through avatars, on social proximity between teachers and students. Secondly, we argue that this spatial reconfiguration of learning by extending the traditional physical space of the classroom in a virtual world challenges the coherence of public policies in the face of a new form of digital divide in the city. The ability to collaborate within the territorial network of education actors is therefore challenged to improve the digital knowledge associated with distributed digital equipment.

We use a qualitative method with ethnographic observations from the emergence of the project (2017-2019). A participatory action research approach has enabled us to collect diverse data:

- interviews of teachers, students, territorial actors
- videos of virtual world based tasks
- videos of students in class when using their laptop to run 3D-world based tasks
- statistical exploitation of digital traces of connections to the virtual world platform.

## **Does Foreign Direct Investment Generate Economic Growth in Emerging Countries and Their Regions? Case of Central & Eastern Europe**

**Prof. Zoltan Gal<sup>1</sup>**

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G09-O1 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 11:00 AM - 1:00 PM

The effect of foreign direct investment (FDI) on the host economy has attracted much research. Despite the literature is inconclusive it seems to agree that any positive effect of FDI on growth is largest in developed countries. However, in spite of this FDI is considered a panacea for the fundamental problems of economic growth in emerging transition countries including CEE where FDI became main source of investments from the 1990s. Post-socialist transformation is characterized by high dependency on FDI channeled by foreign MNCs into Central and Eastern Europe. The main aim of the research is to analyze the impact of FDI on growth, gross fixed capital accumulation, wealth creation (GNI per capita) on both macro-level and subnational level in CEE. Since the outbreak of the crisis, not only FDI inflows decreased but also the role of foreign capital in promoting economic growth have been revised. The research relies on the analysis of a panel dataset containing time series data for the period 1990/95-2016/18 on Visegrad 4 countries. OLS regression and Granger test were used to statistically verify our presumptions. GDP growth rate, Gross Fixed Capital Formation, GNI per capita, export and import, employment and savings rate are selected as dependent variables; FDI inflows/stocks, banking/portfolio investments used as independent variables, and control for (financial, technology and infrastructure development) and institutional variables. Our preliminary results do not find strong correlation between GDP growth and FDI. Domestic savings and other development indicators are the most important factors for endogenous growth. Concerning the causality the paper would like to test (Granger) whether the FDI generate higher growth or higher level of development is explanatory factor.

It also examines the territorial impact of FDI on the overall economic growth as well as on regional disparities across selected regions. It compares the regions with deeper integration into global value chains through MNCs and examines regional disparities generated by the spatially selective FDI. We argue that positive impact of FDI on regional performance to a large extent depends on the degree of embeddedness of MNCs in the regional economy and the socio-economic conditions of the given region. The overall growth effect and spillovers of FDI can not be confirmed even in regions being the most attractive for international firms.

### **What kind of geographic and organized proximity between farmers and collective catering in Burgundy ?**

**Ms Delphine Gallaud**<sup>1</sup>

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S21-S2 Circularities and proximities : stakeholders, scales, ressources  
UdL\_Room 106, August 28, 2019, 2:00 PM - 4:00 PM

Many European countries are now conscious of the importance of shortening food chains and that collective catering can be a lever to attain this goal (Morgan & Sonnino, 2010) because of the amount of purchases of the public sector especially for canteens. But, in most cases shortening the food chains remains a voluntary process for organizations. The goal of this communication is, using the theoretical framework of the economics of proximity (Gilly & Torre, 2000), to analyze how farmers and collective catering build organized and geographical proximity and how the two kind of proximity connect to each other. Do actors manage to build specific territorial resources (Colletis & Pecqueur, 2004) with local food chains? We surveyed, farmers inscribed in an on line directory “Loc Halles”, created by a collective authority, the regional council of Burgundy. We get 40 answers from the 64 local farmers inscribed on “loc halles” directory. We will use the answers to build a typology of the farmers in relation with their organized proximity to the collective catering. As a first result, we see that transactions are markets transactions for all the farmers and very temporary relationships. All the farmers are in geographic proximity with the restaurants because the inscription on “loc halles” is possible only for the farmers that belong to the region. So the building of territorial resources seems be low in the region. We can also build a typology of producers that sell to collective catering and of those that does not sell their products in that kind of short food chains.

### **Urban concentration and employment growth: A cross-country analysis**

**Dr. Roberto Ganau**<sup>1</sup>, Prof. Andrés Rodríguez-Pose<sup>1</sup>

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S39-S2 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)  
IUT\_Room 202, August 30, 2019, 9:00 AM - 10:30 AM

This paper investigates empirically whether and how urban concentration is associated with country-level long-run economic dynamics, defined in terms of employment, Gross Domestic Product (GDP) per capita, and labour productivity growth over the period 2000-2016. The empirical analysis, which is based on a sample of 108 developed and developing national economies, exploits novel, globally-harmonised data on urban population defined at the Functional Urban Area level. The empirical results suggest that the beginning-of-the-growth period degree of urban concentration is associated negatively with employment growth over the period 2000-2016, while a positive association emerges with respect to GDP per capita and

labour productivity growth. In addition, the relationship between urban concentration and economic growth is sensitive to various sources of heterogeneity.

## **Regional de-industrialisation in Europe**

**Prof. Giulio Cainelli**<sup>1</sup>, Dr. Roberto Ganau<sup>2</sup>, Dr. Marco Modica<sup>3</sup>

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G04-O12 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 11:00 AM - 1:00 PM

The study of the transformations of the productive structures – i.e. the structural change of an economic system – has a long-standing tradition in economics that goes back to the contributions of the classic English economists and of Karl Marx. More recently, this debate has seen a renovated interest in economic geography and regional economics. By adopting a case study approach, several works have focused on the determinants of the industrial decline of urban areas, local productive systems and regions. One example is Turin (Italy), where the automotive industry, together with its ancillary industries, have seen a contraction during the last decades due to the advantages related to other production specialisations. Many more examples could be given, with reference to the United States and other European territories. In general, however, what is important is that the interest in the study of de-industrialisation and economic structural change processes is not limited to regional economics and economic geography, but it involves also other fields of research. For example, the decline in urban manufacturing, with the consequent destruction of low-skilled labour, is highly associated with the emergence of populism. Many studies on Brexit and the electoral success of Mr. Donald Trump in the United States identify the regional de-industrialisation process as one of the key factors to explain these political events. In spite of this renovated interest, there is a lack of works that, abandoning the case study approach, investigate systematically the determinants of the manufacturing decline at the regional level. The aim of this paper is to contribute to this debate by identifying the main factors behind the de-industrialisation process of European regions. This is done using a new dataset collecting information on 260 European Union regions – defined at the level 2 of the Nomenclature des Unités Territoriales Statistiques – over the period 2003-2015. The empirical analysis employs spatial econometric techniques, and the preliminary results suggest that the de-industrialisation process tends to affect centrally located regions, where the local economic structure is able to shift from traditional and labour-intensive productions to services-oriented activities. On the contrary, peripheral regions characterised by a relative specialisation in primary industries seem to maintain a relatively high level of manufacturing production.

## **Urbalog: a serious game dedicated to the relationship between urban development and logistics**

**Dr. Mathieu Gardrat**, Ms Florence Toilier

<sup>1</sup>ENTPE, France

S58-S1 Serious Games and Urban Studies, IUT\_Room 108  
August 29, 2019, 9:00 AM - 10:30 AM

Urban freight distribution is a source of nuisances (pollution, congestion) but is essential to the economic vitality of activities. However, it remains poorly known to urban actors and usually ignored in urban development projects. The Urbalog board game is a way of introducing the challenge that represents city logistics to a large public (residents, shopkeepers, developers, etc.) in order to encourage its integration in the urban planning process and to develop knowledge on this topic.

In addition to this dimension of raising awareness among urban actors, the Urbalog game can be used as a mediation tool around an urban project represented by the game board. It is then possible to establish dialogue between the city stakeholders involved in the game, the playful nature of the approach allowing to free oneself from the censorship of each one. Finally, through the exchanges it generates between the

various urban actors, Urbalog is a valuable tool to feed the simulation models resulting from our research work on the sensitivity to innovations, regulations, economic developments, etc.

## **Effects of Highway Capital and Quality on Regional Economic Growth - A Study on German Counties**

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G08-O1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

The hypothesis that public capital fosters private productivity has been in the research focus for decades, and a low, yet significant positive effect has found wide-ranging evidence. Spillovers, i.e. effects across the borders of investing regions, have seen increasing attention. Little research has been done, however, on the symmetry of effects and the role of infrastructure quality.

Claims for higher maintenance investment into German transportation infrastructure (Transl) are made repeatedly. As the economic mechanism indicates that decreasing functionality of Transl endangers economic prosperity, this paper empirically addresses the question whether investment into Transl, specifically the German highways, influences economic growth from the perspective “(How) Does maintenance investment of Transl, causing fluctuating Transl quality, influence economic growth and production efficiency?”

The paper employs a stochastic frontier analysis (SFA) to explain inefficiencies based on a translog production function with highway asset value and conditions as “shifters”, accounting for spillovers through the use of a spatial (SLX-)model. An AR(1)-corrected feasible GLS estimation with panel-corrected standard errors is applied to provide a starting point for the maximum-likelihood based SFA.

Yearly data for the 401 German counties (Landkreise) for the period 2007-2016 are combined from (regional) national statistics, data from the Federal Highway Research Institute (BAST), and own calculations. Regional asset values of the highway network are derived through topographical information in combination with a category-specific perpetual-inventory model of Transl asset values, while quality is determined using the pavement and construction quality assessment data of the BAST.

Preliminary results support the expectations and previous research: the spatial production function shows an elasticity of output with respect to highway capital of 0.1, while spillovers, i.e. regional growth caused by Transl investment in other regions, amount to 0.4% per 1% increase in the supra-regional asset value. With respect to highway conditions, the data support the hypothesis that lower road quality relates to a decrease in economic output: the effect is insignificant with regard to the Autobahn network, but the quality of the more regionally branched Bundesstraßen has a significant negative impact with elasticities of -0.04 locally and -0.21 interregionally. The next step in the ongoing work is to include bridge conditions as part of Transl quality. Furthermore, the model is to be estimated in a SFA context to identify inefficiencies and explain the impact of Transl quantity and quality in this environment.

## **Start-up: the rediscovery by the ecosystem of the victorious entrepreneur?**

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S18-S2 Entrepreneurship and local development: symbiosis and/or dissonance?  
UdL\_Room 103, August 30, 2019, 9:00 AM - 10:30 AM

This paper highlights the main theoretical issues to understand the operation of start-ups in metropolitan ecosystem(s). It is a question of discussing the strong ideas in the form of contextual research hypotheses likely to carry a renewed theoretical framework. The method is based on the analysis of the literature, the theoretical frameworks and the modalities of their renewal. It is also nourished by a monographic approach and preliminary investigations. The paper discusses and highlights seven fundamental hypotheses that are illustrated in particular from the study of the Bordeaux metropolis.

We discuss hypothesis 1 of a theoretical renewal of entrepreneurship and start-ups, both a shift and a theoretical mirage carried by the term ecosystem. Hypothesis 2 makes it possible to return to the characteristic traits of the entrepreneur, made of symbols found again: single-handed but also united with his ecosystem. Hypothesis 3 questions the renewed practice of the technological and digital economy, which finds in the ecosystem the means of describing different scales and worlds. Hypothesis 4 questions the role of actors and public policies, important operators in the construction of start-ups ecosystems that do not have the same representation of the ecosystem as the start-ups themselves. Hypothesis 5 returns to the dominant territorial model, the symbols of the success and fragility of start-ups. The role of the ecosystem in its multi-scalar dimension is considered in hypothesis 6. Finally, the last hypothesis emphasizes the role of externalities necessary for the development of start-up ecosystems, both urban and metropolitan. Our attention to entrepreneurship and start-ups leads to a research protocol that questions more widely the representations and readings that can be envisaged for regional science, territorial and urban development.

### **Spatial concentration and deconcentration of economic activity in Yakutia**

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G12-R1 Location of Economic Activity  
MILC\_Room 308, August 29, 2019, 4:30 PM - 6:00 PM

The paper is devoted to the analysis of the main trends in the spatial distribution of various types of economic activity in Yakutia. The Yakutia (the largest region of Russia that area is 3.1 million sq. km) is extremely sparsely populated. There are dispersion spatial system, complicated transport logistic and high costs for life-support due to extreme climatic conditions. The main task of research is obtaining of statistically significant gravity models on various samples, whose characteristics can be used to obtain indicators of settlement's economic resilience in condition of a sparsely populated region. Database of research: open data of state and municipal statistics for 411 settlements of Yakutia for 2006-2017 period. A matrix of transport distances in winter period was developed. On its basis, panel data on the geographical potential were obtained, and the reverse indicator – agglomeration potential – was proposed. For the first time in Yakutia, the geographically weighted regression method was used to test hypotheses: on the relationship between the volume of agricultural production and the availability of markets, as well as the agricultural lands area; on the impact of people's income and agglomeration potential on the small business; on the relationship between the volume of production of large and medium-sized enterprises, agglomeration potential and amount of investments. The direct relationship between the volume of agricultural production and lands area, as well as the availability of neighboring markets, is substantiated. In addition, agglomeration potential directly related with dynamics of production of large and medium-sized businesses, as well as small and micro enterprises.

## **The results of the Russia's presidential elections (2008, 2012, 2018) in Yakutia as a reflection of social protest**

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G15-R1 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 11:00 AM - 1:00 PM

The Russian Federation, due to its huge area and complex ethnic and confessional composition, is a unique state. Despite unified legislation, most internal social and economic processes are heterogeneous. However, there is a consolidation point - the presidential elections in Russia, where the majority of citizens cast their votes for the main candidate from the state. Vladimir Putin wins the elections with an overwhelming advantage (63.6% of votes in 2012 and 76.69% of votes in 2018). In 2008, the state candidate was Dmitry Medvedev; he also won by a large margin (70.28% of the vote). This reflects a certain long-term pattern of power in Russia where an unconditional person should lead the country.

In these conditions, certain conclusions about the state of society allow us to make an analysis of the voting results for the main opponent, who took 2nd place. The main opponent in the presidential elections in Russia in 2008 was Gennadiy Zyuganov (in Russia - 17.72%, in Yakutia - 20.1%), in 2012 - he again (in Russia - 17.18%, in Yakutia - 14.4 %), and in 2018 - Pavel Grudinin (in Russia - 11.77%, in Yakutia - 27.25%). The share of votes for him in Yakutia was the highest among 85 regions of Russia. This is still an important topic for scientific and public debate in the region and Russia as whole. What could have affected this? Perhaps, the key factor is poverty, one of the highest in Russia. In 2017, 20.3% of the population were poor, and in 2012 - 16.7 %, in 2008 - 19.0%. In addition, it is the result of rapid penetration of information technology in society. A number of experts note that Grudinin as alternative was actively advertised through the WhatsApp is the most popular messenger in Yakutia.

This study is devoted to the analysis of factors of the voting population of Yakutia for the main opponent as a way of social protest reflection. Database of research: open data of state and municipal statistics for 411 settlements of Yakutia for 2006-2018 period. These data will be compared with data on voting for the main state candidate and the main opponent in the presidential elections of Russia in 2008, 2012 and 2018.

## **Labor market integration of second generation immigrants**

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S45-S1 Social mobility & Inequality  
IUT\_Room 205, August 29, 2019, 4:30 PM - 6:00 PM

Long-term integration of immigrants into societies of target countries necessitates integration into the labor market. Contrary to first generation immigrants, their offspring (second generation migrants) are subject to the same formal institutions as native peers, but empirical evidence suggests that they underperform in the labor market, what leads to persistent inequalities. Augmenting research on labor market entry and income differentials, we focus on under-employment and over-education between second generation immigrants and their native peers. Using German Microcensus data, we employ decomposition for binary outcomes to identify major sources of performance gaps. We find differences in labor market outcomes such as unemployment, underemployment and over-education. In line with previous literature, our decomposition results show that higher unemployment of second generation immigrants is mostly due to lower

educational attainments. Furthermore there is a large unexplained variance, which hints at the persistence of informal institutions like values, norms and attitudes passed on within families. The unexplained variance shrinks when looking at underemployment and vanishes completely when focusing on over-education.

### **The Knowledge-Capital Model: The Case of Intra-Asian Foreign Direct Investment**

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G09-R1 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 303, August 29, 2019, 9:00 AM - 10:30 AM

Employing a panel dataset of bilateral inward and outward foreign direct investment (FDI) for 31 Asian countries and territories over the period 2001-2012, we estimate the knowledge- capital (KK) model to find the dominant type of FDI within Asia. We consider alternative estimation methods to deal with zero values, which form the majority of the bilateral observations. Based on a series of model selection and diagnostic tests, we conclude that Lognormal Hurdle and Poisson Pseudo-Maximum-Likelihood are the most appropriate. Controlling for host and source country characteristics, our findings suggest that vertical FDI is the dominant type between Asian countries. However, we find little empirical evidence in support of the KK model's predictions for its key variables, such as total GDP and skill difference, when country fixed effects are included. Some factors (distance, trade costs to both source and host country, the GDP difference between source and host country, and a common spoken language) are found to have statistically significant impacts on the volume of FDI between Asian countries, regardless of whether or not fixed effects are included.

### **Land use change and zoning change at parcel scale : how many, where and why ?**

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G10-O4 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 2:00 PM - 4:00 PM

This paper focuses on the methodological advances and scientific results of the Urbansimul project (<https://urbansimul.fr>). Urbansimul is a decision-making tool for urban planning and land prospecting developed as part of a long-term partnership (2009-2019) between research (INRA, Cerema), the regional public actors (PACA Region, DREAL PACA) involving local authorities in urban planning (municipalities, intermunicipalities) and public land acquisition structures (EPF).

Thanks to access to a spatial microdata on land and house property (DGFIP), land and house prices (DVF) and digitalized municipal land use plans on more than 5 million parcels monitored annually from 2007 to 2017, has enabled us:

- to built an unique learning database for the statistical analysis of land use changes and land market dynamics.
- to systematize the identification of available developable land: this type of information is essential to accurately assess the land supply, which is a key variable in urban economics (see Géniaux, Napoléone and Leroux 2015, RERU),
- to design several prospective models at the parcel scale on the probabilities of land use changes, on building capacities and land supply, and on population dynamics at the communal level.

UrbanSimul's prospective models are based on methodological advances in spatial econometrics in bigdata (Géniaux and Martinetti (2017) RSUE, Martinetti and Géniaux (2017) RSUE, see R packages mgwrsar and



ProbitSpatial) and machine learning (boosting with spatial autocorrelation). These methods aim in particular to predict the constructive capacity of parcels and their probability of becoming built using a very wide range of descriptors of the land owners, the zoning and urban regulations, the physical constraints, the neighborhood contexts and past regulators behaviors in urban planning management. Without going into detail on the estimation tools, this paper will introduce a new conceptual framework for modelling the links between estimated parcels conversion probabilities and zoning change decisions. Our proposal is based on both the assessments of these probabilities of land use change and observed zoning changes over 10 years (more than 167730 parcels of 374 municipalities with zoning changes). The challenge here is to be able to identify the areas with a very high probability of zoning change in future municipal land use plans. A quantitative assessment of 10 years of evolution of local urban planning in the PACA region will also be carried out, illustrating the main mechanisms that govern zoning developments following the SRU and UH laws in France.

### **The Relationship Between Creative Class and Gentrification: A Case of Yeldeğirmeni**

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G13-O2 Real Estate and Housing Markets  
UdL\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

In the literature, the emergence of creative class which is called artists, bohemians or new middle class by different researchers is concerned with development of creative industries in urban centers in process of urban reconstruction. A creative class has emerged by the fact that the service sectors which could be organized in a post-fordist production organization in contrast to fordist production organization and which prioritize technology and creativity have filled fields emptied by industry sector in urban centers. Within scope of study the relationship between creative class and gentrification in the context of its effects on urban centers on local scale through Yeldeğirmeni-Kadıkoy is focused. In order to understand changing process in Yeldeğirmeni, semi-structured interviews were conducted in 2 different sections with different user groups. According to results of interviews Yeldeğirmeni which is a very attractive settlement by artists due to its features (historical and cultural identity) has entered the changing process in which rental and property values began to increase with increase in the number of art workshops and cafes in years of 2013-2014. This process defined as 1st stage of gentrification has been followed by 2nd stage of gentrification in which households with low income have been displaced by student groups, the shopkeepers who were unable to cope with increased rents have been displaced by cafes and craftsmen who are settled elements of neighborhood culture in Yeldeğirmeni have been displaced by artists. The neighborhood life of Yeldeğirmeni where it is possible to see signs from 3rd stage of gentrification today faces danger of extinction due to weakening of neighborhood relations. The issue of which role should be taken by whom against this danger was discussed together with actors interviewed and study was concluded with 'conclusion' chapter in which findings of field study were evaluated in associated with literature.

### **Determination of Potential Second-tier Cities in Turkey and Performances Analysis**

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In light of developed and developing countries literature about 'second-tier city' concept, Turkey's potential second-tier cities will be determined among 81 cities depending on the performance changes in 'demographic and economic growth' and 'social, physical and institutional development' in this study. For this aim, an inductive method is adopted which depends on the respectively forming research problem, research questions and hypotheses and testing hypothesis with two-step cluster analysis. In cluster analysis, the number of cluster is defined as '8'. Thus Turkey's 81 cities are divided into eight separate cluster for each year according to the proximity of performance to each other and related cluster centers in the above-mentioned categories. The cluster analysis which will allow the determination of Turkey's potential second-tier cities through performance change depends will conduct between 2007 and 2017. Afterwards, the performance changes of the second-tier cities will be examined in two different periods in the same period. The first period subject to the examination of performance change is the crisis period, the second is the post-crisis period. In addition, in the cluster analysis both for the determination of second-tier cities and for the examination of their performance changes, year of 2010 when Turkey's economy was in welfare and balance will be chosen base year. The reason for this is to avoid misleading effects of crisis years on results. Thus, performance changes of the cities will be examined by going to the years after base year and by going to the previous years. After identification of Turkey's potential second-tier cities and explanation of potential changes in their performance, growth and development dynamics of the cities will be investigated. Finally, in the conclusion section of study, the policies for second-tier cities in the literature will be examined together with the prominent policies within the scope of this study.

#### **Determinants and Types of University-Industry Collaboration: Case from Techno-Parks in Turkey**

Prof.Dr Ferhan Gezici<sup>1</sup>, Dr. Burcu Müderrisoğlu<sup>2</sup>, Dr Güliz Salihoğlu<sup>3</sup>, Prof.Dr. Gülay Başarır<sup>4</sup>, Associate Prof.Dr. Cemil Ceylan<sup>1</sup>

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G07-O5 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

In the global economy of the 21st century, innovation has become dominating activity for competition among the cities and regions. Literature on innovation and regional development has long been discussed on to what extent geography and proximity between different agents matters for innovation, since it is known that innovation is not a linear process, but more complex. Therefore it is especially a process of cooperation and collaboration not only among the firms, but research institutions, government and other local stakeholders as well. Meanwhile techno-parks have established based on the triple helix approach enhancing the role of universities for knowledge spillovers and spin-offs. While collaboration among the firms and universities for R&D have a positive impact on innovation, it is also identified as one of the success criteria for techno-parks.

Consequently, types of collaboration and main determinants to explore the process have long been interesting research topics. The studies of Bjorke and Johnson (2015) and Howels and Bressant (2012) try to explore the types and determinants of collaborations among actors for innovation. Empirical studies from different countries highlight the importance of proximity for collaboration, whereas firms within the same techno-park would have more chance to do it, not only with other firms but the university as well. Furthermore firms would get benefits of university in order to access external linkages and knowledge. According to Temel et al. (2013), the most important methods in establishing university-industry

collaboration are; common R & D, spin-offs and informal relationships. Firm type is also significant to realize the actors which are involved innovation process. While the small firms have generally been neglecting, findings of researches put forward that large firms have stronger ties with the university. In addition to this, the spin-offs may provide knowledge spillovers from the university.

This paper aims to explore the types and determinants of collaboration in technoparks. Since technoparks have been considered as important tool for innovation policy of Turkey and the number of technoparks has been increasing continuously, the findings of the research would provide insights for the policy implications. Two technoparks (Mersin and Erciyes) which are among the first ten high rank ones are selected for the purpose of our research. Survey is conducted with both the firms and academicians from university to explore the main motivations for different types of collaboration mainly with university, among the firms within technoparks and the other actors out of technopark.

### **Interregional Mobility and the Personality Traits of Migrants**

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S41-S6 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 29, 2019, 4:30 PM - 6:00 PM

This paper contributes to the interregional migration literature by estimating whether individual personality traits, which are typically unobservable in survey data, influence the propensity to engage in interregional migration. We specifically examine the big-five personality traits of: extraversion, openness to experience, conscientiousness, agreeableness, and emotional stability. Our findings suggest that individuals with higher levels of extraversion and openness to experience are more likely to migrate. Moreover, individuals with low levels of agreeableness and emotional stability are more likely to migrate multiple times. Overall, our results show that the personality traits are significant factors in the migration decision. To the extent that personality traits are rewarded in the labor market, these unobservable traits will confound naïve estimates of the pecuniary return to migration.

### **Exploring R&I collaboration networks in Cohesion policy funded projects: a benchmark for the evaluation of Smart Specialisation policy**

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S54-S1 Evaluating Smart Specialisation: early evidence on policy implementation and economic transformation  
IUT\_Room 304, August 29, 2019, 9:00 AM - 10:30 AM

This paper analyses the complex network structure of collaborations projects in research and innovation financed under the European Cohesion policy. It aims at constructing an empirical benchmark to evaluate the effects of the Smart Specialisation policy, once complete data will be available.

Using micro data from Italy covering the Cohesion policy programming period 2007-2013 – before the adoption of Smart Specialisation – we map inter-organisation collaborations on a weighted, undirected graph. We first verify the extent of which the network exhibit small-world properties, then we look at the connectivity distribution of nodes (organisations), and highlight the role of important hubs. In particular, we analyse the function of research institutions, universities, and regional university systems in guaranteeing network integration and potential long-range knowledge flows.

Based on the evidence gathered, we formulate a series of hypotheses regarding the effects of the Smart Specialisation policy on the structure of research and innovation collaborations and we translate them into network topological properties that can be empirically investigated.

The contribution of this study to the literature is twofold. First, it provides a detailed analysis of the emerging topological characteristics of the inter-organisational collaboration network at a national scale, based on information on the participating organisations, and offers a range of insights on how the emerging network structure shapes knowledge creation and diffusion. Second, it provides a clear empirical counterfactual against which to identify the effects of the Smart Specialisation policy adopted by the European Commission as a guiding principle for investment in research and innovation starting from 2014.

## **How local geography shapes firm geography**

**Dr. Valentina Giannini<sup>1</sup>**, Prof. Donato Iacobucci<sup>1</sup>, Prof. Giulio Cainelli<sup>2</sup>

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G12-O1 Location of Economic Activity

MILC\_Room 309, August 29, 2019, 2:00 PM - 4:00 PM

When growing firms often decide to expand by adding new productions in similar or related sectors. This can be done by setting-up new business units (internal growth) or by acquiring existing firms (external growth). In general, the geographical proximity to the headquarter facilitates the communication and the organization between the established firm and the new units; however, the need to specific knowledge and resources of the proximity to the market may result in choosing a different location for the new unit. Up to now the relation between the location choices and the internal organization of firms has not been fully investigated.

This paper proposes a methodology to define and measure the geography of firms, i.e. the degree of dispersion of their business units, and to investigate the factors influencing such geography.

We expect that the geographical dispersion of productions units depends not only on the strategic choices of firms, such as the degree of diversification, but also from the characteristics of the context in which the leading firm is located.

In the empirical analysis, we associate the business units to the different companies belonging to the same business group. Our sample is composed by a novel dataset of about 16,000 Italian business groups developed by using the BvD Amadeus database containing information on joint stock companies (called head of the group) and their own subsidiaries. The empirical analysis aims to investigate how the structural characteristics of a Local Labour System (LLS) may influence the geographical dispersion of these units. Moreover, we analyse the effects of local productive specialization and diversification on the geography of business groups. We also test this relationship focussing on the role played by the membership to an industrial district and local variety on firm geography.

Our expectation is that the geographical dispersion of firms is influenced by both productive specialization and diversification at local level. This evidence is further confirmed when we consider manufacturing groups. In this case firm geography seems to be affected by the membership to an industrial district and to local variety. This analysis has several policy implications. The most important is related to the role of

diversification as driver of some of the strategic choices made by firms. In fact, interventions associated to the so-called Smart Specialization Strategy (S3) can have positive effects not only on the local development patterns but also on the strategic decisions of many firms.

### **Concentration of address network in Polish rural areas**

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S49-S1 The retail chains development and changes in service patterns in small towns and rural areas  
IUT\_Room 203, August 30, 2019, 2:00 PM - 4:00 PM

Compact character and density of development are especially important among the features of spatial structures of villages and characteristics of rural areas that support development and improvement of living conditions. It is a factor facilitating infrastructural and social integration that often determines availability of village structure to external users. Demographic potential of rural settlement is also important. It economically justifies sustaining its basic service sector and development of public spaces of the centre characteristics, including the elements of the core nature (i.e. clear system of hard-surfaced roads and streets). It is also conducive to emergence of service, industrial and multi-family housing developments in the forms that make existing spatial structures of villages even denser. If we consider the aforementioned features of settlement structures occurring in rural areas, the assessment of the level of development density in various types of communes in Poland and determination of spatial distribution of this phenomenon seems to be a justified objective of the paper. Research of distribution and intensity of this phenomena can be assessed through analysis of proximity of 7.3 m address points in Poland. The assessment of the state and progress of this phenomenon enables indication of areas of various quality of urban settlement structures with respect to activities related to improvement of infrastructure, possibilities of investments location and social activation.

### **In which cities do we like to live? Empirical analysis employees' attitude to the cities**

**Prof. Marina Giltman<sup>1</sup>, Dr. Viktor Pit<sup>2</sup>, Dr. Maria Batyreva<sup>1</sup>, Elena Sumik<sup>1</sup>**

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G04-O10 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 4:30 PM - 6:00 PM

Attracting talented employees to the cities leads to the concentration of high-quality human capital, and thus to their successful economic and social development. Employees are the main taxpayers and stakeholders of social and economic policies pursued in cities, so it is necessary to understand which characteristics of a city are important for attracting and/or retaining talented employees. So far we do not have enough knowledge about what kind of city amenities contribute to a positive attitude among employees towards the city where they live and/or work. Exploring this could be important for the empirical research into the frameworks of the theories of local labor markets and compensating differentials, as well as in the designing of social policies in cities. In our research we applied three theoretical frameworks: Local Labour Market Model (Rosen, 1979; Roback 1982; Moretti, 2011), Concept of Compensating Differentials (Coelho, Ghali, 1971; Greenwood et al., 1991) and the Branding of Places approach (Kavaratzis, 2005; Virgo, de Chernatony, 2006; Baker, Cameron, 2008; Merrilees et al., 2009; Zenker, 2011; etc.). The study presented is based on unique microdata collected by the authors using surveys of the employed population of 20-64 years in the administrative centers of the Ural Federal District (Russia), with a total of 2,520 respondents. We applied ordered logit regression to estimate how the city amenities, the individual

characteristics of the employee and the size of individual wages affect employees' attitudes to the cities. The results showed that both wages and city amenities have a significant impact on the employees' attitudes to the cities. From the city amenities the most significant were those from the group "Urbanity and diversity", such as institutions of art, culture and leisure; effective system of municipal governance; transport infrastructure; health care system; kindergartens and schools. The group "Nature and recreation" (in our case landscapes and climate) had a lower impact but were also significant. Individual wages have a strong and significant impact on employees' attitudes to the cities. Thus it could be assumed that lower satisfaction with the city amenities of an employee could be compensated by higher wages. The obtained results can be explained based on the economic theories approach as well as on the concept of city branding. The results of the empirical research can also be used in the designing and implementation of social policies in cities.

### **Rural Boys, Urban Girls? – Internal Migration and the Gendered Labour Market in Sweden**

Dr. Peter Håkansson<sup>1</sup>, Dr. Peter Karpestam<sup>2</sup>

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S26-S2 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 2:00 PM - 4:00 PM

The labour market in the new 'service and knowledge-oriented society' based on digitalisation is skilled-biased and routine-biased. This means that innovation, as previous innovations, favours skills, but also leads to routine based work to become automatized. In this paper we analyse the new labour market from a gendered labour market perspective. The new jobs arise in the city. Historically, there has been a surplus of women in urban areas and a deficit of women in rural areas in Sweden. The new labour market seems to increase these differences. By using longitudinal data from Statistics Sweden and descriptive statistics, we find that after the turn of the new millennium, women move with a more clear purpose than men: they move to gain career opportunities. Women move more often from unemployment to employment, than men. Furthermore, they move more often than men do to start studying.

### **Spatial effects of digital transformation. An analysis on the example of an automotive R&D network**

Mr Jonas Glaesser<sup>1</sup>, Dr Michael Bentlage<sup>1</sup>, Prof Dr Alain Thierstein<sup>1</sup>

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S02-S1 Digital and spatial transformation: structures and relations in the knowledge economy

IUT\_Room 402, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Green and smart building innovation diffusion on property markets in Europe: An empirical analysis**

Dr. Michal Gluszak<sup>1</sup>, Dr. Agnieszka Malkowska<sup>1</sup>, Dr. Bartlomiej Marona<sup>1</sup>

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G13-O1 Real Estate and Housing Markets, UdL\_Room 106, August 28, 2019, 4:30 PM - 6:00 PM

In recent two decades, several important innovations have emerged and been adopted in the built environment across the world. Amongst the most prolific technological innovations are green (sustainable) and intelligent (smart) buildings design. The adoption of that innovation was particularly visible in the commercial property market. In the case of sustainable design, the process has been facilitated by the emergence of independent third party governance institutions and the development of green building certification systems.

In many cases, the process of innovation diffusion is a spatial phenomenon that manifests as hierarchical/cascade or contagious dispersion of given technological advancements. Since Hägerstrands (1953) seminal work on the mechanisms of spatial diffusion of innovation the problem has been discussed theoretically and investigated empirically in regional science. The diffusion of innovation has also been addressed in business and economic research.

We analyse the spatial diffusion of sustainable innovation across commercial property markets in Europe. Using a panel of major European office markets observed from 2008 to 2018, we trace the diffusion of green/smart building innovation diffusion in Europe, both over space and time. We focus on four major green building certification schemes: LEED developed in the US, BREEAM from UK, French HQE and German DGNB. In the empirical part, we use data from public directories of office buildings registered within given certification schemes and information on major office markets in Europe (mostly office stock). In the research, we address the role of selected economic and institutional variables acting as barriers and drivers for spatial diffusion. We investigate the adoption of new technologies by analysing the fraction of innovative (green/smart) office space in particular office markets.

### **Modeling Spatial Supply Chains**

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S28-S1 Applying a Complex Adaptive Systems Approach to Regional Economics: big data, network analysis, and computational theory

MILC\_Room 310, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Do Urban Redevelopment Incentives Promote Asset Deterioration? A Game-Theoretic Approach**

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G06-R1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 2:00 PM - 4:00 PM

In order to decrease the objection to redevelopment initiatives, policy-makers frequently adopt measures that offer economic incentives—such as additional property rights—to homeowners on the land intended for redevelopment. However, the period between the announcement of the intention to redevelop and the implementation of the new construction often extends over a long time period. This study uses a game-theoretic framework to examine the effect of the incentives to redevelop on the quality of the existing housing stock during the extended pre-implementation period. We show that the option to redevelop may

accelerate deterioration. Moreover, we identify circumstances under which there exists a unique Nash equilibrium where, in order to discourage objections of other homeowners, those who support redevelopment intentionally lead to structure deterioration during the pre-redevelopment period. Our results highlight the need to shorten the time-period between the adoption of a policy intended to encourage redevelopment and the implementation of redevelopment.

## **Typology of Regional Innovation Systems in Poland**

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G21-O3 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 4:30 PM - 6:00 PM

The concept of Regional Innovation Systems (RIS) has developed into a widely used analytical framework which generates empirical base for regional innovation policy. The aim of the paper is to examine RIS in Poland in 2004-2016 and to classify them due to their innovation potential and technical effectiveness. The analysis is based on different data sources: published and unpublished and covers NUTS-3 sub-regions (72 units according to territorial breakdown of 1 January 2015). The unpublished data include following variables: share of enterprises which have incurred outlays for the innovative activities; share of enterprises implementing process or product innovations; share of companies collaborating in the field of innovation and share of new or modernized products in total production sold in industrial companies. It covers industrial enterprises employing more than 49 people. The data is extracted from innovation statements in industry (PNT-02).

The methodology employed in the analysis includes: exploratory factor analysis, cluster analysis and data envelopment analysis (Buesa et al. 2006, 2010). It was assumed that every region has its RIS. Systems with the highest innovation potential and effective at the same time have been recognized as strong RIS. The results show that there have been substantial differences among Polish sub-regions as regards the strength of innovation systems. Low degree of their crystallization poses a challenge for local governments. Lack of cooperation causes fragmentation of Polish RIS.

## **The economic impact of international agreements for GHG mitigation**

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G14-O3 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 4:30 PM - 6:00 PM

This paper analyses which countries need to reduce greenhouse gas (GHG) emissions as part of the overall goal of reducing emissions to the ideal level, as defined by the Intergovernmental Panel on Climate Change - IPCC, and which countries will suffer the largest reduction in gross production value (GPV). To identify these countries, the study uses the input-output (IO) and linear programming (LP) methodologies in multi-regional matrices, modelling scenarios of global GHG emission reduction to simulate different international agreements. The database comes from the WIOD headquarters for the year 2009. The results show the largest reduction in GHG and GPV in India and China. In a more ambitious scenario of reduction, the United States increases its responsibility and Russia becomes the country with the largest emissions reduction. The



economic impact is largest in countries that have the most intense GHG emissions, and in the countries that make up the BRIC. This study allows us to explore the LP-IO methodology, demonstrating the importance of analysing the effect of international agreements and the use of cleaner productive structures.

Keywords: GHG Emissions; International Agreements; Multi-Regional Input-Output; Linear Programming.

## **What drives regional business cycles in Europe?**

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G08-O7 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 9:00 AM - 10:30 AM

The aim of this paper is twofold. First, to identify regional business cycles in Europe, obtaining datings of business cycles that allow us to identify possible groups of regions and to assess how interdependence in European regions has changed over time, paying special attention both to the euro cash changeover and the global financial crisis. Second, to determine the driving forces behind each group of regions, that is, to identify the economic, cultural and social factors that may help explain regional business cycles. We identify five different groups of European regions. Moreover, we find an increase over time in regional business cycle synchronization. We detect that the variables that play the most important role to identify groups of regions are those related to well-being and geography and culture.

## **Unfair Competition: The Illegal Trade Practices in the Western Border of Paraná State and its Impacts on the Brazilian Economy**

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G04-O9 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 2:00 PM - 4:00 PM

Paraná is one of the main states of the Brazilian economy in regards to agricultural and industrial production. In addition to the importance to the country's economy, Paraná has a peculiar characteristic that is the presence of 139 municipalities in the "Western Border Region", establishing limits with Paraguay and Argentina. This peculiarity demands from the Paraná rulers differentiated strategies to promote the growth and development of this Region. One of the problems observed in the municipalities of Paraná close to the border is the illegal entry of goods produced in Paraguay and Argentina, which compete unfairly with the products of companies in the region and throughout the country. Among the main smuggled goods are cigarettes, vehicles, electronics, computer equipment and others. (this research will not address weapons and drugs). According to data from the Brazilian Federal Police, in 2017 about US\$ 172 million in goods were seized, just in Paraná state. In addition, according to data from the Institute for Economic and Social Development of the Border - IDESF, it is estimated that seizures made by the federal police represent between 5% and 10% of the total illegal products entering the country. Then, the total value of illegal border trade can exceed US\$ 1.7 billion. Based on the above considerations, the present study intends to analyze the impact of the smuggling practices on the Paraná Western Border Region economy and the consequent spillover effects on the rest of the country. This impact will be measured using an interregional input-output system built for the 27 Federative Units (68 sectors 128 products). The data regarding illegal entry of products will be made available by the Economic and Social Development Institute of the Border - IDESF and by Federal Police. It is known that products that enter the country illegally through the Paraná Western Border will not be all consumed within Paraná state, so a Gravity Model will be used to predict the value of illegal goods that enter through the Paraná Western Border and go to others Federative Units. It will make possible to identify the spillover effects of the illegal entry of goods by the Paraná Western Border in each Brazilian state.

## **Embeddedness and decoupling dynamics of innovation processes in circular economy: insights from agrofood projects**

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S21-S1 Circularities and proximities: stakeholders, scales, resources  
UdL\_Room 106, August 28, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

Even if it is based on several principals, the main one is that circular economy intends to be non-linear, based on the creation of loops (circularities) in which the wastes produced by some actors become resources for other ones. The building of these circularities implies innovations that can take place within different territorial scales. The main goal of our research is to characterize the innovations on which the building of circularities in the agrofood sector is founded. Our question is thus: What are the scales and dynamics of coordination, resources circulation and even resources production in circular economy initiatives held by agrofood actors, and what are their explaining factors? We undertake a comparative analysis of three types of initiatives. The valuation of biomass thanks to collective methanation projects, the valuation of by-product by distilleries and the creation of feed and food products from new circular cooperations. We conducted semi-structured interviews with the main actors of 8 initiatives, using a mixed method from economic sociology, the quantified narratives method, particularly suited for the analysis of processes of innovation and their dynamic of embeddedness / decoupling. We observe different dynamics according the nature of the circular economy project. Collective methanation is based on knowledge and some coordination that didn't exist before on the territory. They imply organisational innovations structured in the long run around the adoption of technical innovations and the absorption of the knowledge that goes with it and is usually brought by non-local actors. The valuation of by-products by distilleries is a more typical diversification strategy founded on internal resources and the absorptive capacity and will of one or two persons in the firm. The feed and food multi-stakeholder projects seems to be "in the middle" as they hybridise the logics of methanation and distilleries projects. Beyond these differences, common characteristics of the projects can be found: importance of already existing local personal networks, of key individuals that carry out the process and of the sector and regulatory contexts. These processes, whatever their nature, are strongly locally embedded, from a relational and geographical point of view. However, they aren't entrenched in local, as non-local demand and knowledge are essential for them. In other words, the closing of material loops at a local scale remains partial and we can observe local knowledge loops but – rather classically - strongly tied to global pipelines.

## **Post-Suburbanism and Governance in times of cooperation, competition and conflict**

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G06-O7 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 11:00 AM - 1:00 PM

The peripheries of Lisbon, Portugal, were created at an accelerated speed from the fifties of the last century, in a "pull and push" mode, that is, as a necessity and an imperative. An imperative because of the hundreds of thousands of ill-housed families who came to the city to escape the poverty of the countryside and responding to the appeal of a capital in affirmation. It was also a necessity for the Portuguese state,

impotent at that time in resources and organization. This gave rise to the creation of this suburb made up of very unequal housing and infrastructures designed to house the largest number at the lowest cost. The urban growth occurred by spreading existing spaces, by leapfrogging taking advantage of the best opportunities and, more recently, by filling interstitial voids. It was also due to legal, informal and illegal urban planning processes, often carried out by a coalition of interests not always clear. The final result was an unusual, complex and little articulated urban form, conditioning the present and future metropolitan, aggravated by the existence of an extensive estuary that segments the metropolitan area of Lisbon. These dynamics, and even many of the principles and values underlying it, suburbanization as a phenomenon and suburbanism as a form of social appropriation, were not only losing meaning but contradicted the new widely agreed goals in the New Urban Agenda (UN- Habitat, 2016). The challenges that are posed to a suburban territory governance in crisis and transition - post-suburban governance - is what we intend to discuss and illustrate here in Lisbon, using the preliminary results of the MetroGov3C research project and articulating three aspects: Stakeholders, Instruments and Dimensions.

### **Social inclusion of small coffee farmers of Tolima (Colombia) in the Global value chain**

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G08-R1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 11:00 AM - 1:00 PM

The purpose of this research is to analyze the social inclusion schemes for the small farmers of special coffees of the Department of Tolima with particular attention to the case of the municipality of Planadas in the context of their productive insertion efforts within the global value chain during the 2010-2016 period. The case study includes the 23 special coffee associations of the municipality that meet the project criteria and which were reported by the Secretariat of Agricultural Development and Food Production of the Government of Tolima for the year 2017. Likewise, it links other stakeholders in the chain such as coffee growers, international buyers and government institutions. The theoretical framework focuses on the analysis of the global value chain, which is adapted by the authors for the analysis of regional value chains. This incorporates analytical categories proposed by Gereffi and Korzeniewicz (1994) and Kaplinsky (2000), mainly economic structure of the value chain (input-output structure), governance and systemic efficiency. The study is motivated by the spirit of knowing: How do the small and medium producers of special coffees in the municipality of Planadas become linked in the global value chain (GVC)? Competitive strategies are explored to facilitate the participation of small producers of specialty coffees in the generation and distribution of a greater added value in the chain, with emphasis on direct purchasing schemes that reduce the participation of intermediaries and tend towards the formalization of productive activities of small farmers. The National Federation of Coffee Growers of Colombia has traditionally controlled the different links in the coffee value chain from the supply of inputs, sowing, storage and export of coffee and the special coffee segment. However, the present study focuses on associative schemes outside the scheme of the National Federation of Coffee Growers. In development of the project, it is studied the participation of intermediaries that facilitate the link with global purchasing entities in the municipality of Planadas, such as Lohas Beans, Inconexus, Caravela, among others, and their interaction with associations (23) which are made up of 1,338 members distributed in 67 of the 99 villages that make up the rural area of the municipality (Gobernación del Tolima, 2017).

## **The effect of the 2012 Spanish law reform to protect mortgage debtors on regional foreclosures and mortgage loans**

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G13-O1 Real Estate and Housing Markets  
UdL\_Room 106, August 28, 2019, 4:30 PM - 6:00 PM

From 1999 to 2005 the Spanish housing market was characterised by an extraordinary boom, which increases house prices (euros per m<sup>2</sup>) by 117%. This housing bubble had a crucial role on the impact of the international financial crisis beginning in 2008 in the Spanish economy. After 2008, during the Great Recession, house prices dramatically decreased and unemployment increased. At the same time, the number of defaults on the repayment of mortgage loans and foreclosures significantly raised.

In this paper, we examine the effect of the Spanish law reform passed in 2012 to protect mortgage debtors. Under this new regime, low-income debtors that meet some requirements can hardly be evicted and, in case of default, the bank is forced to offer the debtor a restructuring of the debt or even, as a last resort, the debtor can deed the property over to the bank as an alternative to having the lender foreclose on the property.

We consider data from 50 Spanish provinces (NUTS III regions) from 2001 to 2017. By using panel data models with fixed effects, linear and quadratic region-specific time trends and other relevant control variables at the regional level (house prices, inflation and unemployment rates), our results reveal that the reform had a significant effect, reducing the number of foreclosures and new mortgage loans, but this effect was transitory, fading after four years.

## **The Spanish spatial city size distribution**

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G17-O5 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 2:00 PM - 4:00 PM

This paper focuses on the spatial city size distribution in Spain. We apply the new distance-based approach by González-Val (2019) to analyse the influence of distance on the city size distribution parameter, by considering the Pareto and lognormal distributions and using data from the Spanish municipalities in 2011. Considering all possible combinations of cities within a 200-km radius, our results indicate that the Pareto distribution cannot be rejected in most cases regardless of city size. Placebo regressions validate our results, thereby confirming the significant effect of geography on the Pareto exponent. This means that the Pareto distribution fits well city size distribution for cities of all sizes as long as they are located nearby. Thus, we emphasize that the proper statistical function of city size distribution (and the fulfilment of Zipf's law) is a matter of distance, rather than size. On the contrary, the lognormal distribution is only valid for short distances.

## **Territorial quality and the spatial transmission of public expenditure: the effect of firm's legality rating in the Italian procurement market.**

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G04-O1 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 11:00 AM - 1:00 PM

Public procurement represents an important lever of the economic and budgetary policies of the various levels of the public administration. In the Eurozone, the volume of expenditure on goods, works and services carried out by public administrations represents about 16% of GDP and 29% of public spending. A crucial aspect in the public procurement debate, is the selection of firms, which affects the magnitude of public expenditure's growth-enhancing effect via its spatial distribution.

To this regard, a peculiar instrument encompassed by the Italian procurement legislation - i.e. the firm's legality rating - is aimed at promoting and introducing principles of ethical behavior in the business environment.

The rating is part of a more general aim to reduce the information asymmetry that characterizes the relationship between the company and the contracting authority, thus reducing the selection costs for the latter and limiting the incidence of some of the pathological phenomena of the Italian public procurement market (corruption and mafia infiltration).

The purpose of our work is twofold: we identify the role that this rating system has (i) in improving rated firms' performances in terms in terms of volume of awards and in terms of efficiency in the execution phase of the contracts awarded and (ii) in affecting the spatial transmission mechanism of public expenditure favouring the market penetration of well rated firms in territorial areas characterised by a poor social and institutional quality. We resort to a rich dataset of procurement contracts concluded between 2012 and 2017 in Italy and we identify the causal effect of this policy using quasi-experimental methods to select suitable controls among firms which do not have a legality rating. In doing so, we control for pre-treatment differences between treated and controls accounting for several firms' characteristics, including financial and organizational ones.

## **Regional Labour Market Resilience in Romania**

**Prof. Zizi Goschin**<sup>1</sup>

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S40-S3 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 4:30 PM - 6:00 PM

Many of the attempts at empirical analysing regional resilience to economic crises are based on labour market indicators, such as employment and unemployment. Unemployment rates have long stayed relatively low in Romania, even during economic crises, due to large work out-migration, employment in subsistence farming, early retirement, etc. Nevertheless, regional labour market inequalities persisted despite a long-run convergence trend. The economic crisis impacted the counties with different intensity, depending on their specific resilience, thus aggravating pre-existing regional problems and deepening the labour market disparities. In this context, we explored the long run convergence in regional unemployment rates, focusing on the effects of the recent economic crisis. The results at NUTS3 level indicate a significant impact of the crisis through a clear change in the beta convergence speed both during and post-crisis. Although initially the developed counties seemed less resilient, being hit harder by the recession (due to closer links with international commercial and financial flows), they were also the first to recover, exploiting their better economic resources.

## **Confusion of regional representations in the discourses of the Schéma Basse Seine**

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G06-O3 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 9:00 AM - 10:30 AM

By the analysis of a planning project carried out in Normandy during the 1960s, the aim is to show that the use of the term “region” by regional development’s actors refers to a plurality of geographical representations, which has big consequences on territorial policies.

The “Schéma Basse-Seine” (SBS) is a planning document edited in 1969, during the beginning of the French regionalization and shortly after the regional division of 1960 (Circonscriptions d’Action Régionale), which gathered several departments. This institutional division does not fit to the academic conception of the region at this time, led by several figures as Etienne Juillard, Jean Boudeville, or François Perroux, for whom the metropole influence define the regional area. This definition was also used by the DATAR (French delegation of regional planning) in the “métropoles d’équilibre” politics (1963).

This duality can also be found in the discourses of the SBS actors, as the term “region” designs both the institutional space delimited by the regional division (Haute-Normandie region) and the space corresponding to the polarized theory of region (“Bassin parisien”). The word “region” therefore stands for a repertoire of loosely articulated ideas leading to confusions and manipulations from some actors, especially about metropolitan project in Haute-Normandie.

This will be demonstrated using discourse analysis on a corpus including all the strategic documents edited during this planning project. Actor discourses will be classified according to the regional representations to which they relate: institutional or polarized region.

We will conclude on the crucial importance of the words in regional development analysis, inspiring by critical geopolitics and discursive institutionalism works, which highlight the main role of ideas and representations contained by discourses on the construction of space and public policies.

## **The contribution of cultural heritage to circular city-region development**

**Antonia Gravagnuolo<sup>1</sup>, Luigi Fusco Girard<sup>1</sup>, Karima Kourtit<sup>2</sup>, Peter Nijkamp<sup>2</sup>**

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G04-O3 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 2:00 PM - 4:00 PM

The concept of circular city defines a city/territory in which the circular economy (CE) model of sustainable production and consumption is applied, “closing the loops” of urban metabolisms in terms of flows of materials, water, energy and wastes. Circular cities and regions are those in which no wastes and other negative environmental externalities are generated, while productivity is enhanced through wastes reuse, reduction of raw materials extraction, repair, refurbishment, etc. A circular territorial system is that in which urban metabolisms are “closed”, enabling economic growth decoupled from resources consumption. Circular cities are productive cities, reducing costs of materials as well as costs of production processes through synergies, increasing the quality and quantity of outputs, reducing the costs of negative environmental externalities. This enhanced ‘productivity’ should be seen as multidimensional, with relevant impacts on human and ecosystems health, longer-term economic growth (more independent from resources availability and prices volatility).

Cultural heritage (CH) regeneration and adaptive reuse can play a key role for the achievement of a circular city-region. It reduces soil consumption by re-generating existing buildings and sites with new functions, and valorises the embedded energy of constructions. CH can have positive impacts on local economies, jobs and enhancing attractiveness of cities for residents, visitors and enterprises. It also generates positive social impacts enhancing quality of places, and thus quality of life and wellbeing, enhancing place attachment and care through its symbolic values, it contributes to local communities' bonds and civic attitude.

The circularity of economic, social and environmental processes can be enhanced through CH regeneration and adaptive reuse. However, the costs of heritage regeneration are high and careful evaluation is needed to create evidence of net positive impacts of heritage investments and their contribution to sustainable development, in the perspective of CE and 'closed urban metabolisms'.

This work develops a set of criteria and indicators for integrated urban metabolisms assessment that take into account flows of materials, water, energy and wastes, but also social, cultural and economic flows to assess the contribution of cultural heritage regeneration and adaptive reuse to the realization of circular cities and regions. A methodological proposal based on integration of multicriteria analysis and metabolisms assessment is developed to assess the impacts of cultural heritage adaptive reuse for circular urban-regional development.

## **The Contrasting Importance of Quality of Life and Quality of Business for Domestic and International Migrants**

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G17-O5 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 2:00 PM - 4:00 PM

We examine whether bilateral regional migration flows are driven by the Quality of Business (QB) of a city or by the city's Quality of Life (QL). The QB and QL measures correspond to those of Chen and Rosenthal who construct each measure based on (quality-adjusted) rents and wages in each city. Following the insights of Rosen and Roback, a city that has high rents and high wages must have productive amenities that enable firms in that location to afford the high factor costs (thus the city has high QB). A city that has high rents and low wages must have attractive consumption amenities to compensate residents for the low real wages in that location (thus the city has high QL). Our measures are constructed for 31 urban areas in New Zealand using five-yearly census data covering 1986 to 2013.

Having compiled these measures of QL and QB, we use a gravity model of regional migration – augmented by destination and origin QL and QB – to model bilateral flows of working-age migrants (post tertiary education and pre-retirement age). We also model flows between these urban areas and rural areas and flows for the urban areas to and from overseas locations. Thus we bring together two well-grounded models from the urban economics literature within a single modelling framework.

Incorporation of international as well as inter-urban migration flows produces evidence of starkly different attractors for international versus domestic migrants according to the type of city amenity. International migrants are much more attracted to cities that are based on productive amenities whereas domestic migrants are more attracted to places with strong consumption amenities. Thus, in deciding on the type of city amenity to enhance (e.g. a port that facilitates business or a concert hall that facilitates consumption), city officials are implicitly choosing the type of migrant that they attract and hence the type of city that may result.



## **Distributional implications of international clean energy investment : evidence from CDM investment in Brazil**

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G14-O2 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 2:00 PM - 4:00 PM

Since 2004, the Clean Development Mechanism (CDM) of the Kyoto Protocol has facilitated more than US\$ 550 billion of new investment into low and middle income countries, much of which is supporting clean energy infrastructure and related energy projects. An explicit objective of the CDM is to promote 'sustainable development'. Most definitions of sustainable development describe development that prioritizes equality of opportunity in the development process and/or equity in the distribution of the benefits of development. There is growing concern that these equity objectives are being over-ridden by economic efficiency concerns.

This paper examines distributional issues connected to CDM investment flows using new project- and municipality-level data for Brazil. It examines the distribution of CDM investment, projects, and GHG emission reductions across municipality quintiles in terms of municipality economic prosperity and income inequality. The analysis also explores which characteristics of CDM investment projects associate with localisation in relatively poor municipalities and in relatively unequal municipalities. At least in Brazil, CDM investment is flowing disproportionately to more prosperous municipalities and, to a lesser extent, to more unequal municipalities. CDM projects can create significant employment effects, particularly for certain types of projects widespread among CDM projects in Brazil, like biomass energy projects. The equitable distribution of projects is an issue that needs to be addressed better by the national authorities responsible for approvals of the siting of projects. Ongoing and future climate pact negotiations should give greater attention to intra-country distribution issues with CDM and other similar clean energy investment insofar as it is envisioned to play a role in sustainable development.

## **The Impact of Quality of Place on the Locational Choice of Heterogeneous Talents: An Economic Geography Model**

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G17-O5 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 2:00 PM - 4:00 PM

This paper constructs an economic geography model for the new spatial economics, exploring the mechanism of the impact of the quality of place on the location choices of heterogeneous talents. Specifically, we build a heterogeneous, talent location choice model after integrating the environment and climate, non-tradeable public services, non-tradeable private services, and accessibility to consumption into a unified framework. Our simulated results show that: 1) improving the environment, public service, and housing supply can increase the welfare of talents, and thus lead to the influx of talents; 2) when choosing between two regions with the same quality of private services, talents migrate in a one-way pattern and agglomerate in the region with higher variety of services; while with differentiated quality in service, a two-way (i.e., moving out and back) migration mechanism appears with a "turning point" affecting talents to move out or back. The quality and variety of, and the accessibility to the consumption of, non-tradable private service influence the "turning point". Improvements in the variety and intra-regional accessibility to

the consumption will promote the talents' moving back. In addition, improving the inter-regional accessibility to consumption will reduce the migration on both directions.

### **A disaggregate analysis of routing decisions on transport chains: Containerized shipments of French wines and spirits to the US**

**Dr. David Guerrero<sup>1</sup>, Pr. Jean-Claude Thill<sup>2</sup>**

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S30-S1 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

Freight route decisions such port or modal choice are largely pre-constrained by commercial and logistics constraints of shippers and consignees. Policy makers aiming to favor the use of certain transport modes or ports, are often exclusively focused on transport issues and tend to neglect this issue. This paper demonstrates that logistics choices made by shippers and consignees, such the shipment size, the involvement of freight forwarders, or the ways in which different goods are consolidated, largely contribute to subsequent routing decisions. The impacts of these logistics characteristics on the routing behavior are measured for a sample of deep-sea shipments.

A discrete choice model is used to analyze the geographical distribution of maritime shipments of wine and spirits between French shippers, West-European ports and US ports. The routing choice is estimated on the basis of a combination of factors pertaining to transport (i.e. distance to the port, port efficiency...), production (i.e. shipper's size, shipper's main activity) and logistics (size of the shipment, if a freight forwarder is involved or not, if the container contains products from one or several regions...).

To estimate the choice model, we use data that describe shipments of wine and spirits exported from France to the United States in October 2006. The choice of a single type of cargo means that comparisons between flows of different origin-destinations can be reasonably made, avoiding the problem of heterogeneity of shippers. Moreover, the method used helps the identification of actors involved in the supply chain and their locations. Indeed, when analyzing freight flows the problem of shipper's location is an important one, since the HQ of firms or warehouses are often declared as the first origin of final destination of cargo. To overcome this issue, keywords related to the geographical designation of origin (i.e. Cognac, Sancerre) are used to precisely describe the origins of the cargo contained in containers. Our first results indicate that routing decisions of French wines and spirits heavily rely on a few large freight forwarders and shippers. Although the port of Le Havre is largely used by small shippers, Antwerp, Marseilles and Rotterdam play non-negligible roles as well for specific wine regions and shippers. When the shipper is equidistant to different ports, shipper's size, or the ways in which importers or freight forwarders consolidate wines and spirits from different regions affect the choice of the port.

### **Freight rates up and down the urban hierarchy. The case of Japan**

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S30-S2 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 4:30 PM - 6:00 PM

This paper explores the relationships between freight rates and the positions of urban areas (UAs) within an urban hierarchy. Drawing on a survey on freight flows and rates between 45 Japanese prefectures, from 2000 to 2010, it shows that inter-urban freight rates are negatively related to the population sizes of origin

and destination UAs. Shipping cargo from large UA to small UA is significantly more expensive than in the reverse direction. Regional-specific factors, such the incoterms most commonly chosen by firms, seem to play non-negligible roles as well.

### **The role of amenities in the life satisfaction level in Ecuador**

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G04-O7 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 9:00 AM - 10:30 AM

The aim of this study is to determining the role of amenities at the cantonal level in the subjective welfare of the population in Ecuador. In this developing country with an unequal distribution of amenities across its territory, the access to amenities can be crucial for the individual welfare improvement. To estimate the effect of different types of amenities in the level of welfare, a Generalized Ordered Logit model, after verifying the parallel lines assumption, is employed using pooled data for 2014 and 2015 at the individual and cantonal levels. The individual data is obtained from the Survey of Employment and Unemployment (ENEMDU, acronym in spanish) and the cantonal data of amenities is obtained from the Directory of firms and establishments (DIEE, acronym in spanish). Two binary logistic models contrasting categories low level of life satisfaction vs. medium level of life satisfaction and high level of life satisfaction and contrasting categories low level of life satisfaction vs. medium level of life satisfaction and high level of life satisfaction are estimated. For the interpretation, the sign and the magnitude of marginal effects are considered. A positive (negative) sign indicates that an increase in an independent continuous variable positively (negatively) influences in the probability of reporting a given result of satisfaction (high, medium or low level of life satisfaction). The analyzed amenities are recreation, accommodation, industrial trade, retail trade, basic education, higher education, ground and air transport and waste management. In general, the effects corresponding to the amenities are higher in terms of dimension than the effects of the individual characteristics of the people themselves. The positive amenities are those related to recreation, accommodation, industrial trade and basic education. For instance, an increase of 4.5 establishments dedicated to accommodation in an average canton leads to an increment of 49.2% in the likelihood of reporting a high level of satisfaction with life. The negative amenities are those related to retail trade and higher education. For instance, an increase of a one percentage point in the proportion of higher education establishments diminishes the probability of reporting a high level of life satisfaction in 25.8%. This result reflects the effect of inter-personal comparison, that is, as the opportunities of an individual increase at the same pace as those of others, the level of life satisfaction remains constant. Nevertheless, if the opportunities of others are higher than a given individual, his/her welfare level would be lower.

### **The Centenary of Poland's Independence. A Note on Infrastructure Convergence**

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S68-S1 Transport Infrastructures and European Integration in the Framework of the White Paper 2011:  
Evaluation, Benchmark, Perspectives at the Age of Digital Transformation  
IUT\_Room 108, August 30, 2019, 2:00 PM - 4:00 PM

Poland has a long and complex history in the East-Central part of Europe. Between 1795 and 1918, it was split between three countries, Austria-Hungary, Prussia and Russia. In their policies, the occupying empires aimed at the integration of the newly gained Polish lands with their main territories. One of the

manifestations of such policies in the economic dimension was that they invested in new roads and railway lines. In 1918, Poland regained its independence. However, the Great Depression, world wars by which Poland was most severely affected in Europe, and central planning of the communist regime after WW2 slowed down the development and integration of the road and railway networks. Since joining the European Union in 2004, Poland has been a beneficiary of the European Structural and Investment Funds which aim through co-financing on national, regional or local basis at the improvement of the infrastructure, in terms of both quantity and quality.

The analysis of the existing infrastructure was carried out to show what remains from the previously existing discrepancies in the three former regions of partitioned Poland until now? Can we still see any differences between them? Is the convergence in terms of the transport infrastructure to be seen as rather weak or strong? Does it accelerate or not after the accession to the European Union?

Our research revolves around the road and railway network. In the analysis, we will consider the accessibility of main urban centers (travelling time), density of railway lines and highways measured as a length of the railway lines related to a unit of area and per inhabitant. We will also consider the data concerning the European funds to assess whether the European Regional Policy has reduced the level of infrastructure discrepancies in Poland during the last 15 years?

We will look at the interconnection between the three former regions: does the gap in the transport infrastructure still exist? Then the amount of regional funds dedicated to Polish infrastructure programs for both road and railway networks will be analyzed, with a regional mapping of the financial flows towards each voivodeship (administrative subdivision of Poland) in order to observe the reduction of the disparities inherited from the time of the partitions of Poland. Finally, the practice of closing the minor railway lines will be considered as a part of the policy towards the increase of efficiency of the rail network.

The main reason for writing this paper seems obvious: can we verify that the reduction of the discrepancies that we observe now is linked with the closing of tracks, or it is due to the flows from the European Structural Funds or both. What are the relations and proportion between the benefits to the road and railway infrastructure: is the convergence trend characteristic of both networks? To what extent the development of the road network (and closing of some railway tracks) has reduced the disparities inherited from the old partitions of Poland?.

## **Externalities of Urban Agglomerations: An Empirical Study of the Chinese Case**

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G04-O11 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 9:00 AM - 10:30 AM

Benefit from externalities, urban agglomerations are playing more and more important roles in regional economic development, and these externalities can be subdivided into two types according to their disparate action mechanisms, but the literature has failed to pay sufficient attention to their variations. In this paper, we reasonably subdivided urban agglomerations' externalities into the pecuniary externality and the technology externality, and then made comparative theoretical studies of their manifestations, mechanisms, and key factors. After that, we took China's five national key construction urban agglomerations as samples to gain insight into the externalities associated with Chinese urban agglomerations. The results indicated that urban agglomerations' pecuniary externality manifested as inter-urban capital allocation and that its technology externality manifested as inter-urban technology spillover. Currently, the key factor for China's five national key construction urban agglomerations' pecuniary externality is market size, i.e., the pursuit of larger market size was one main motivation in forming Chinese urban agglomerations, but the inter-urban capital allocation did not evince a trend of shifting to cities with higher labor productivity. The key factor for China's five national key construction urban agglomerations'

technical externality was economic density, i.e., the pursuit of higher economic density was another main motivation in forming Chinese urban agglomerations, but both cities' own research and development activities and the spread of the same from other cities failed to improve urban agglomerations' technological levels. Moreover, there was no evidence suggesting that diversification or specialization of industrial structure related to urban agglomerations' pecuniary externality or technology externality. The regressions of dummy variables indicated that there were no significant differences in the pecuniary externality between China's five national key construction urban agglomerations' core cities and surrounding cities; however, their technology externality presented complex differences.

### **“The grass is greener on the other side of the hill”: Relationship between the Brexit referendum results and income inequality**

Dr. Diana Gutiérrez Posada<sup>1</sup>, Prof. Fernando Rubiera Morollón<sup>2</sup>, Dr. Maria Plonikova<sup>3</sup>

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S46-S1 Recent Trends in Regional Socio-Economic Inequalities, IUT\_Room 203, August 30, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Does spatial clustering limit immigrants' wage prospects? – A life cycle perspective**

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G17-R2 Population, Migration and Mobility Behaviour  
IUT\_Room 110, August 28, 2019, 2:00 PM - 4:00 PM

With the knowledge in hand that immigrants' location choices strongly depend upon the presence of other immigrants, we investigate the effect of spatial clustering on immigrants' wage prospects over a 20-year period (1975-2010). We use a quasi-experimental setting of the guest worker programme that ensures exogenous location choices and, thus, validity of results. Following Borjas' model of economic assimilation, the results suggest that similar immigrants in similar firms experience different outcomes depending on job location. From a life course perspective, immigrants, who were regionally allocated close to other immigrant with the same nationality, perform worse than do those immigrants allocated close to natives. The analyses control for structural differences between regions. Moreover, the effect of spatial clustering becomes even more negative with time of residence. Our findings are robust regarding two alternative measurements of spatial concentration (exposure index and relative clustering index) and an IV-estimation (IV: lagged spatial concentration measure).

### **A Socioeconomic Analysis of Ride-Hailing Emergence and Expansion in São Paulo, Brazil**

Prof. Eduardo Haddad<sup>1</sup>, Dr. Renato Vieira<sup>1</sup>, Mr. Miguel Jacob<sup>2</sup>, Dr. Ana Guerrini<sup>2</sup>, Mr. Eduardo Germani<sup>3</sup>, Mr. Fernando Barreto<sup>3</sup>, Dr. Miguel Bucalem<sup>1</sup>, Mr. Pedro Sayon<sup>1</sup>

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G01-R1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 11:00 AM - 1:00 PM

This paper estimates the socioeconomic impacts of the emergence and expansion of e-hailing services in São Paulo, Brazil. Combining data from a major service provider, individual level data from a representative travel diary survey and a structural traffic network simulation, we evaluate the impact of e-hailing on commuters' travel time and accessibility. We then estimate the effect of these changes on workers' productivity. Finally, using a Spatial Computable General Equilibrium (SCGE) model, we estimate the effect of these productivity shocks on broader economic outcomes. Our main results indicate that 83% of current e-hailing trips derived from trips that were previously made by traditional motorized private modes. We also find that the current e-hailing supply has mostly negligible effects on travel times and congestion; however, some individuals experienced important accessibility gains due to the emergence of this alternative mode. We then simulate e-hailing expansion and development scenarios, including the case of larger vehicle occupancy. Total economic activity expands by 1.089% if average vehicle occupancy reaches 3 passengers per trip and all motorized private trips are substituted by e-hailing.

### **Effect of road-traffic related nuisances on the active travel modes. What is the issue?**

Mr Mohamed Mouloud Haddak<sup>1</sup>, Ms. Sarah Mahdjoub<sup>2</sup>

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S56-S1 Transport, health and socio-territorial disparities  
IUT\_Room 108, August 28, 2019, 4:30 PM - 6:00 PM

**Purpose:** Exposure to road traffic nuisance, such as noise, air pollution and traffic accidents, can lead to feelings of annoyance or road insecurity. Annoyance is defined as a feeling of displeasure claimed by an individual or group to be adversely affecting them, diminishing long-term quality of life; road insecurity is recognized as affecting welfare. The aim of this study was to identify the determinants (sociodemographic, socioeconomic, and related to daily mobility) of annoyance by noise and air pollution and of road insecurity. **Methods:** A sample of 720 subjects, aged 18 years and over, living in the Rhone Departement (France) in 2013 was interviewed by questionnaire. Annoyance and feeling of road insecurity were estimated on a 10-point scale from 1 (not annoyed) to 10 (highly annoyed) for each nuisance, with a threshold of 8. **Results:** The main finding was that active travel mode users experienced greater annoyance, whatever the nuisance than motorized users.

**Conclusions:** The least polluting are the most annoyed. These results are very interesting. Active travel mode users help improve air quality, alleviate traffic congestion and minimize the risk of road-accidents, as well as improving their own health. In a context in which active travel modes and public transport are being promoted, active travellers might be protected against such annoyance, liable to hinder the development of such a practice.

### **Impact of brand equity on consumers' purchase intention: Case of Tizi-Ouzou consumers**

Jugurta Akkoul<sup>1</sup>, Dr lamara hadjou<sup>2</sup>

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G24-O2 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 2:00 PM - 4:00 PM

The purpose of this article is to assess the influences of brand equity dimensions on purchase intention. We aim to determine the type of relationship between brand loyalty, brand awareness, brand association, perceived quality, and consumer willingness to buy a brand. A quantitative study was conducted using a questionnaire distributed to a sample of 200 consumers living in Tizi-Ouzou. The latter had to evaluate the biscuit brand "Bimo". Data analysis was performed with statistical data analysis software SPSS v21.. The

results of our research highlight the existence of significant and positive relationships between the four dimensions of the brand and the purchase intention. The prospects of this research will shed more light on the consumption habits of Algerians.

### **The influence of the country of origin on brand equity in the Algerian biscuit market**

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G24-O5 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 2:00 PM - 4:00 PM

**Abstract :** The globalization of trade has had repercussions on consumer buying habits spread across the globe. This has significantly changed their behavior and the way they choose products. Some product attributes such as country of origin and brand have become important variables in the consumer decision process. The article looks at the impact of country of origin on brand equity from the point of view of consumers. The aim of this work was to demonstrate the relationships between the country of origin as well as brand loyalty, brand association, brand awareness and perceived quality. For this purpose, a conceptual model is developed to explain this type of relationship in the sector of biscuits, through the BIMO brand. A field survey was conducted among 200 consumers in the wilaya of Tizi-Ouzou using a pre-established questionnaire to verify the conceptual model adopted in this paper. A linear correlation is performed using the Pearson coefficient to verify the main assumptions made in our research. The result that appears gives us an overview of the evaluation of consumers surveyed of the BIMO biscuit brand manufactured in Algeria. Our work offers various perspectives to economic actors and researchers interested in understanding the behavior of Algerian consumers and their relationship to the brand and country of origin of the products they consume. **Keywords :** country of origin, brand loyalty, brand awareness, brand associations, perceived quality.

### **How to accelerate the diffusion of green technologies?**

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G14-O2 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 2:00 PM - 4:00 PM

Technology transfers are considered essential means to obtain the objectives of greenhouse gas emissions reductions. These transfers generally occur through firms engaging in international trade, foreign direct investment and licensing. In climate policy, multilateral mechanisms have been agreed upon, such as the Technology Mechanism under the United Nations Framework Convention on Climate Change. In empirical analyses, however, green technology transfers tend to be studied in a bilateral perspective, ignoring the influence of indirect connections in the diffusion process. Yet, in markets, firms interact and their network of connections is influenced by both government policy and by multilateral agreements. This paper examines the role of the different incentives in explaining diffusion of green technology from a network perspective. The proposed model combines epidemiological diffusion and network inference models inspired from computer science. Since wind energy is the renewable energy source with the highest growth in capacity after solar photovoltaic technology, the empirical analysis uses data on the diffusion of wind turbines. Moreover, wind energy makes for an interesting case as it is a sufficiently mature technology to observe its diffusion both globally and over a long period of time. The data bring new insights into diffusion

since it measures actual installation of wind turbines since the early 1980s instead of using proxies such as patents or transfers under the Clean Development Mechanism. In addition, the model includes both domestic (e.g. renewable energy policy) as well as bilateral and multilateral determinants of diffusion (e.g. international trade and environmental agreements).

### **Not coming in today - Firm productivity differentials and the epidemiology of influenza**

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S33-S2 Modelling place attractiveness in the era of Big and Open data  
MILC\_Room 310, August 28, 2019, 2:00 PM - 4:00 PM

With over four million cases in Germany every year, influenza and infectious diseases of the respiratory tract (henceforth ARD) have the highest number of reported doctor consultations. Although the direct treatment costs are comparably low, the indirect effects, due to work absence, are far more compelling. In this paper, we estimate the effect of local ARD diseases as an exogenous shock to the production factor labor and thus on levels of firm productivity. To quantify the ARD related shock on the production factor labor, we geocode maps of weekly reported flu emergence in Germany from official influenza surveillance data. Measured by the length of the influenza season in German municipalities, these data exhibit substantial seasonal variation as well as high variance across regions. In our main analysis, we estimate firm-level production functions using data from a comprehensive German firm survey. In our main regression, we analyze total factor productivity differentials and their relationship with the local influenza intensity. First results show sizeable negative effects of the ARD diseases and the flu on firm productivity.

### **Image, Football and Urban Development**

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G04-R1 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

### **Impact of Aid Modality on Growth and Government Expenditure, with Reference to Tanzania**

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G04-YS1 Regional and Urban Development  
IUT\_Room 110, August 29, 2019, 11:00 AM - 1:00 PM

This paper empirically investigates the effectiveness of aid modality, referring to Tanzanian cases. Using a comprehensive panel data covering 124 countries for 11 years (from 2006 to 2016), this study contributes to the aid effectiveness literature by combining the two approaches (adding fiscal response approach to the traditional one with growth rates) with two main aid modalities (project-type intervention and program-



based approach). With respect to growth, both modalities didn't exert a positive significant effect. The fact that both of the aid modalities are not very effective is not actually a surprising finding, as it was already shown by previous studies. In terms of fiscal response - i.e. the effect of aid on recipient government's budget spending behavior, however, both modalities indeed appeared to increase public expenditure in partner countries. This study also examines Tanzanian cases, which is one of the most active countries applying program-based approach to its aid system. As empirical results show, Tanzania's program-based approach, specifically result-based approach as an advanced version of program-based approach, is positively related to government expenditure and this ultimately leads to better quality of life. This article implies that the pathway of change from aid to economic growth is longer and more complex than that of aid to government expenditure.

See extended abstract online.

### **Regional employment effects of MNE offshoring**

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G05-O6 Regional and Urban Labour Markets  
IUT\_Room 210, August 30, 2019, 9:00 AM - 10:30 AM

The employment in Sweden has become more concentrated to the larger cities in Sweden (Stockholm, Göteborg and Malmö). This paper investigates whether Swedish multinational enterprises (MNEs) have contributed to that development. We examine the association between offshoring within Swedish MNEs and changes their parent employment at regional level (in local labor market regions, LA-regions). The relation may vary depending on: (i) the characteristics of the region (large city, regional center or other region) or (ii) the type of labor (skilled or less-skilled) or the type of job (routine or non-routine) in the parent. Our results reveal large spatial heterogeneities in the relationships between MNE offshoring and onshore employment in various regions. The results suggest that MNE offshoring might be a factor contributing to diverging onshore employment among Swedish regions; increased (unchanged) employment in larger cities and unchanged (decreased) employment in regional centers and other regions. Moreover, MNE offshoring seems to contribute to increased localization of skilled activities and non-routine tasks to larger cities. We use enterprise data on employment in the parents and the affiliates overseas in Swedish controlled enterprise groups with affiliates abroad (Swedish MNEs). Parent employment data are available for different regions in Sweden, skilled and less-skilled labor, as well as for various occupations.

### **Why Do Clusters Fail? Transaction Cost over Spillover Effect has a Price**

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G22-O2 Institutions  
IUT\_Room 303, August 29, 2019, 4:30 PM - 6:00 PM

Many cities want to be the 'next Silicon Valley'. Most of them won't get there. This study offers a new approach to deal with thriving or failing of clusters, based on an institutional analysis. I offer to investigate the role of spillover effect and its transaction costs, among actors co-locating in second-tier metropolitan's clusters.

The idea of voluntary sharing of knowledge is the main reason to co-locate knowledgeable people from different sectors in one place. The spillover effect that occurs among them boosts innovation. This assumption presupposes free trade market of ideas - but it avoids dealing with institutional constraints that may increase the transaction costs for individuals. These constraints can occur due to some reasons: a) knowledge workers from different sectors don't usually meet on a professional basis; b) they don't share the same formal roles, norms, and sanctions of people from the same milieu; c) they often use different technical terms, and d) they have different career incentives. When these costs are too high, they avoid sharing knowledge. In an aggregate way, it may lead to failure of the whole cluster.

The research question is: what are the transaction costs involved over spillover effect between cross-sector actors located in the same cluster? This study is based on Coase theorem as the main theoretical framework. I seek to identify these transaction costs, by developing a model that includes: a) group identity, b) network costs, c) social capital among people in the same milieu, d) control variables for individuals (e.g. gender, age) and for the cluster in which they are located (e.g. size, structure). I will deliver questionnaires to actors from different sectors – academy, industry and governmental institutes (e.g. hospitals). Data will be collected from a sample of 750 knowledge workers, divided equally between these three sectors. The data will be analyzed with structural equation models (SEM).

This study has a geographic perspective as well. The main interest is in clusters located in second-tier metropolitans. Innovation, creativity, and entrepreneurship provide an opportunity for regions to compete nationally and globally.

The results will enable to design a public policy that will help to create sustainable and competitive knowledge communities in second-tier metropolitans. I will present at the conference the results of a preliminary qualitative research.

### **Is There Social Capital in Cities? The Role of Urban Form in Social Capital Formation in Metropolitan Cities of Indonesia**

Mrs Irfani Fithria Ummul Muzayanah<sup>1</sup>, Dr. Djoni Hartono<sup>1</sup>, Prof Suahasil Nazara<sup>1</sup>, Dr B Raksaka Mahi<sup>1</sup>

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G24-O3 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 4:30 PM - 6:00 PM

The determination of social capital investment is not only affected by individual's socio – economic characteristics, but also shaped by the characteristics of physical environment. High density urban form also claimed as suitable urban form to enhance social capital. However, the relationship between these two has not been empirically well – explored and competing results emerge in the literatures. Accordingly, this study aims to investigate the role of urban physical arrangement or urban form in the social capital formation using metropolitan cities in Indonesia as case study. This study is claimed as first empirical study to investigate the association between urban form and social capital in Indonesia. Multilevel logistic regression is employed to investigate the association between urban form and four dimensions of social capital : trust, reciprocity, social participation and civic engagement. In addition, this study also distinguishes bonding, bridging and linking as three basic forms of social capital. This study reveals that density have no association with bonding, bridging, linking social capital as well as social participation and political participation. While, density is only positively associated with membership and reciprocity. Furthermore, other urban form elements such as street connectivity and the presence of local destination showed negative association with several dimensions of social capital.

### **Determinant Factors of Urban Housing Preferences among Low Income People in Greater Jakarta**

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G06-O3 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 9:00 AM - 10:30 AM

High number of housing backlog, especially for low-income people in urban area, is one of Indonesia government major concern. The problem is continuously increasing particularly in Jakarta as the capital city of Indonesia, urging government to implement policy and program in order to provide more proper living place. Using data collected through a survey of 1000 households in greater Jakarta, this study aims to identify low income communities' preferences on house status, renting or buying, and house provider, public or private, in Jakarta and surrounding areas. It analyzed low income preference in housing and found that households having fixed employment status, larger number of family members, higher literacy in housing policy, and accessible house location have higher probability to choose to own a house. In addition, education level, knowledge of housing policies, and eviction are major determinant of household to decide occupying public house rather than private house. The findings provide basic input to government development programs in designing housing policy for low-income people.

### **Dresden floods: The impact of unexpected and recurring flood events on housing prices**

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G14-YS1 Energy and Ecological Transition  
IUT\_Room 201, August 29, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Exploring The Effects of Deindustrialization on Workers: From Istanbul to Cerkezkoy**

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G05-O4 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 9:00 AM - 10:30 AM

In line with the changes in the world, two concepts have dominated the political-economic system: Globalization and Neo-liberal Policies. These concepts have caused many changes in social, political, spatial and economic structure of countries and regions. Deindustrialization is one of the outcomes of this process, which has influenced especially the most developed regions in developing countries. The process, which began with the inter-regional relocation of the manufacturing industries, undoubtedly has profound effects on everything, but especially workers; because they face risk to lose their job, home, and family-social ties. However, the main literature and empirical studies on deindustrialization have mainly focused on the decisions of the capital and the factors behind their choices, by neglecting the roles and experiences of labor. The aim of this paper is to examine how labor is affected spatially and socially by deindustrialization

and which factors change the decisions of labor. The research is carried out within the scope of the A Factory, which was relocated from Istanbul Metropolitan Area to Cerkezkoy as contiguous province to Istanbul in mid-2018. In this context; first, the economic and political structure of Turkey was analyzed by using primary and secondary data in order to realize the background of deindustrialization. Then, the in-depth interviews with the workers and other actors- Turkish Metal Union, workers' community, journalists - were conducted to find out their experiences, behaviors, and decisions in the process. The results highlight the labor's decisions depend on the economic and political situation of the country, the structure of the industrial sector, the strategies of the factory and the socio-economic characteristics of labor.

### **Impacts of Highways on Commodity Prices: Evidence from Japan**

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S42-S1 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 11:00 AM - 1:00 PM

In this study, we empirically investigate the effect of highways on retail prices of butter in Japan. In particular, we take into account the relocation of producers through the development of highways. We found that the construction of highways raised the transportation speed while the average transportation time from production site increased by the dramatic increase in transportation distance. The latter occurred because of the concentration of butter factories in a limited number of regions. As a result, on average, the increase in transportation time during 1966-1980 raised the butter price by 3.3%. Out of that, while the rise in speed decreased the price by 2%, the increase in transportation distance raised it by 5.3%. These results imply that at least in the butter market, the reallocation of production site may increase producer surplus while the rise of retail prices will worsen consumer welfare.

### **Multilateral R&D Project Networks in High-Technology Clusters: which teams span structural holes?**

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S14-S2 Collaboration-based innovation policies: theory, empirics and practitioner feedbacks  
UdL\_Room 106, August 30, 2019, 11:00 AM - 1:00 PM

Multilateral R&D project networks are often used as a policy tool to foster diffusion and creation of knowledge in high-tech clusters. In this study, these collaborations are considered as a network of temporary teams among innovation actors, and the origins of "structural holes" (Burt, 1992) are investigated. Structural holes in a network of R&D teams are particular network positions since teams spanning them can access to non-redundant knowledge flows, and modify knowledge diffusion in the cluster and over time by playing brokerage and control roles. To explain the origins of structural holes, the framework proposed by Zaheer and Soda (2009) is taken as a basis. In their framework inherent opportunities and inertial constraints arising from prior network relations are proposed as the two main factors driving structural holes. In this study their framework is applied to the context of cluster collaborations in the light of industrial clusters, innovation systems, and proximity dynamics literature, and by extending the actor heterogeneity dimension. Then, the extended framework is tested using data on multilateral R&D collaborations labeled by the Images & Reseaux Cluster, which is one of the competitiveness clusters that resulted from the French Competitiveness Policy. The anticipated contribution of the study has three dimensions. First, it tries to extend the literature on formation of R&D collaboration networks, which has considered structural holes mainly as by-products of

tie formation and overlooked team level, by providing systematic explanations on their origins in multilateral collaboration networks. Second, it tries to extend the literature on diffusion of knowledge in clusters. In this literature much attention has been accorded on brokerage and control roles played by individual actors between cluster members and extra-cluster actors. Whereas in this study, brokerage and control roles played by teams of innovation actors between past and current knowledge content produced by the cluster are explored. Lastly, the study contributes to the existing empirical literature on the outcomes of the French Competitiveness Policy by studying the Images & Reseaux Cluster for the first time.

### **What is the Place of Retail in Contemporary Small Towns?**

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S49-S1 The retail chains development and changes in service patterns in small towns and rural areas  
IUT\_Room 203, August 30, 2019, 2:00 PM - 4:00 PM

Many researchers indicate that retail sector is increasingly important for the urban centres development. It creates a large resource on the labour market, organizing and impacting urban public space and even establish a new type of social and cultural relations as well as often it becomes a market and marketing symbol of the city and town. Small towns and other local centres in European rural areas so far fulfilling housing functions (commuting) but local trade and retail are systematically losing importance for commercial service of residents. The main change is connected to disappearance of traditional economic bases of small towns, including the former trade-services functions carried out towards rural areas in the surroundings zones. Interesting are the components of retail change in urban centres, in particular possible explanation of changing patterns of retailing. Important for urban structural change is the locational shift in retailing. Other aspects of location question are that of accessibility and the shift outward.

The interactions between trade and retail activities and urban economic resilience with a primary focus on the former socialist countries in Central and Eastern Europe. Quick and intensive increase of large-scale retail outlets and its impact to the social and economic aspects of existing retail in local, regional and national urban systems have been extensively discussed in the literature. The answer to the question: What is the future of the traditional retail in urban centres? Is it very up to date because the question of survival of retail facilities in a competitive and dynamic urban structure has been discussed less? The problem of functioning of retail in small towns became extremely important - the adjustment of traditional city-centre retail function disappears and depreciates at a fast pace resulting in numerous deserted high streets in many urban centres. It is connected to uncontrolled influx of new forms of shopping venues in outer (hypermarkets) and inner (shopping malls) zones of traditional urban centres.

The status of retail and commerce show the position of an urban centre in the settlement system hierarchy and to give each place of the city its own special character, in particular the physical appearance of the high streets and types of retailing. Important is the answer to the question why exactly such a set of retail stores and services get together in some cities and towns and how it is change over the longue duree.

### **Employment suburbanization in the 21st century: A comparison of German and US city regions.**

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<sup>1</sup>*Ils - Research Institute For Regional And Urban Development, Dortmund, Germany*

G12-O1 Location of Economic Activity  
MILC\_Room 309, August 29, 2019, 2:00 PM - 4:00 PM

This paper addresses the question on the evolution of metropolitan employment distribution by scrutinizing two relatively large and representative samples of German and US American city regions between 2003 to 2015. In general, US metropolitan areas are far more decentralized and deconcentrated than their German counterparts. While the trajectory of American metropolitan employment dispersal was relatively dynamic with periods of de- and re-concentration, the development trend for German city regions has been remarkably stable. Further, in both countries the tendency of deconcentration and decentralization has been the strongest within the manufacturing sector, while knowledge intensive service industries remained relatively centralized and concentrated. Tendencies for a re-concentration and re-centralization of economic activity were particularly strong in the largest metropolitan areas, in city regions in the north-eastern census region of the US as well as in East Germany. However, within both countries we find a relatively great variety of trajectories, involving the coexistence of reinforced monocentricity, polycentricity, and dispersal. In summary, the overall picture of intra-metropolitan employment distribution seems to be strongly fragmented with diverging trajectories that cannot solely be explained by national or regional patterns.

### **The role of international migration for regional disparities in population development in Germany (2007-2017)**

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G17-R2 Population, Migration and Mobility Behaviour  
IUT\_Room 110, August 28, 2019, 2:00 PM - 4:00 PM

This paper examines the impact of foreign migration on regional disparities in population development in Germany by analysing recent spatial patterns and determinants at the county level. A counterfactual analysis shows that international migration has significantly contributed to counteract population shrinkage in German regions. However, immigration was mainly directed towards large cities and highly urbanized areas and has therefore reinforced the existing spatial disparities in population development. Our spatial regression models nonetheless reveal that international migrants are not per se attracted to large agglomerations. Controlling for a broad set of further variables, including the existence of ethnic peer groups, labour market characteristics, amenities and accessibility, we estimate that indicators of urbanization are not significantly or even negatively correlated to the net migration rates of international migrants. Moreover, the results strongly differ between the external and internal spatial migration patterns of foreigners as well between certain subgroups of migrants.

### **The effect of the EMU on the high-technology manufacturing trade**

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G09-O1 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 11:00 AM - 1:00 PM

The HT (high tech) trade is proposed to be of importance for growth and dissimilation of information. A common currency has been reported to have similar impacts (Rose 2001). This paper investigates the impacts of the common currency (EMU) to high-tech manufacturing trade (exports and imports) and HT exports especially. An unanimous positive effect of the EMU on trade could not be found. Along the older studies of the euro's trade effects our results demonstrate overall positive effects of the EMU on HT trade are positive if country-pair effects and time-effects are not included. Whenever the fixed and time effects

are concerned or the multilateral resistance is taken into account in the PPML estimates EMU membership becomes insignificant for HT trade and HT exports. Moreover, our findings indicate that the EMU's effect on HT trade (exports + imports) and HT exports is country-specific, which lends support to a non-homogenous knowledge transfer and country related knowledge-based economic development within the EMU.

Keywords: Trade, exports, EMU, high technology, knowledge

### **Nowcasting East German GDP Growth: A MIDAS Approach**

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G24-O3 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 4:30 PM - 6:00 PM

This paper presents a mixed-data sampling (MIDAS) model to nowcast regional real GDP growth based on a newly constructed quarterly series measuring East German economic activity. More specifically, our model takes into account past quarterly East German real GDP growth, contemporaneous and past quarterly German real GDP growth and various monthly business cycle indicators available for East Germany. Our approach also includes a forecast for current quarter German real GDP growth. By applying this setting, individual MIDAS models are able to outperform conventional autoregressive (AR) and several autoregressive distributed lag (ARDL) models. Evidence based on single indicator models suggests that survey data on the situation in the construction sector and the expectations in the wholesale trade sector are among the most useful to monitor short-term economic activity in East Germany. Averaging forecasts from the MIDAS models further improve our results.

### **The factors of location of logistics facilities: new perspectives for the Paris Metro Area**

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S30-S2 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 4:30 PM - 6:00 PM

This paper aims to analyze the location's choice of logistics facilities in the Paris Region. Many works have already looked at these location's choice factors, our study aims to provide new perspectives on this location regarding spatial distribution and freight flows. From an urban planning and geography perspective, research on urban logistics have mainly focused on the proximity of logistics facilities to the consumers. To deliver goods the most efficiently, carriers and shippers look for facilities and available land to close to city center, in dense part of the metro area. Urban logistics focus on deliveries and last miles and takes little account of the entire network in which the warehouse is part. On the other side, researches on freight and logistics in the field of supply chain management, which are not focused on the "last mile", explained the location of logistics facilities by the transport costs. Both of those two perspectives have contributed to explain the location of logistics facilities. In this paper, we propose a holistic approach in order to combine short and long distance perspectives to explain the location of logistics facilities. By examined the case of the Paris region, we propose to explain the location of the logistics facilities at different scale regarding freight flows (from suppliers to consumers).

## **“The Logistics Metropolis”, planning urban freight and logistics in the Paris Metropolitan Area: urban structure and public policies**

**Dr. Adeline Heitz**<sup>1</sup>

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S57-S1 Freight mobility and urban forms  
IUT\_Room 108, August 30, 2019, 9:00 AM - 10:30 AM

The recent growth of logistics activities including warehousing has increased their importance in metropolitan areas (Bowen 2008). Logistics activities are sprawling outwards and warehouses are leaving dense areas and relocating in peripheral ones. Logistics sprawl is the subject of a growing volume of research (Cidell 2010; Dablanc, Rakotonarivo 2010, Dablanc, Ross 2012; Dablanc and al. 2013; Raimbault 2014; Woudsma and al. 2015; Heitz and Dablanc, 2015; Sakai and al. 2016; De Oliveira and al. 2016; Aljohania and al. 2016; Dablanc and al. 2017). This suburban logistics amplifies negative externalities linked with transport operations and raises new issues for public action in charge of urban planning (Masson and Petiot, 2013).

In the case of the Paris metropolitan area, some authors (Dablanc, Raimbault, 2015) underline the impact of the lack of planning and public regulation of the development of suburban logistics between 1980 and 2000, contributing to logistics sprawl. The introduction of sustainable objectives in urban planning documents in the 2000s, pushed public authorities to fight urban sprawl and promote the "compact city" (Reigner and al. 2013). Like urban sprawl, logistics sprawl is part of this metropolitan expansion (Heitz, Dablanc, 2015). The recent public awareness of the contribution of freight and logistics to urban sprawl has triggered an effort to integrate the mobility of goods in regional and urban planning. Public action focuses on the "last mile" a public policy to compensate logistics sprawl. Through the integration of "urban logistics" within traditional policy frameworks (Taniguchi, Thompson, & Yamada, 1999; Dablanc, 2007; Allen, Thorne, & Browne, 2007) public authorities intend to optimize the transport of goods in the city through regulation and the development of a logistics real estate and property market specific to metropolitan city centers, in addition to the regular logistics real estate market, which is mainly located in the peripheral areas. Urban logistics appear as a new leverage for logistics development in metro areas that focuses on city centers, rather than margins. The concept of "Logistics Metropolis" (Dablanc, Frémont, 2015) reflects the rise of urban governance for logistics in the Paris metropolitan area.

## **The use of serious game as a shared urban foresight tool: research methodology and issues**

**Mr Pol Henry**<sup>1</sup>, Mr. Olivier Klein<sup>1</sup>

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S58-S1 Serious Games and Urban Studies  
IUT\_Room 108, August 29, 2019, 9:00 AM - 10:30 AM

In tomorrow's cities, the new forms and technical solutions of mobility will have a key role in the urban reshuffle. Autonomous vehicles will bring real modifications in our approach of urban forms or urban infrastructures, but especially in our mobility uses. In this context, LAET3 made of autonomous vehicles uses a significant issue in his research. For that, the lab wants to put sideways technical and technological issues to carry out foresight studies on societal issues of the arrival of autonomous vehicles in our cities. Consequently, the lab led the construction and experimentation of an serious game named « RoboSpectif ». Produced by students of higher education, this serious game is a board game that was engineered as a research tool able to achieve an foresight study of autonomous vehicles uses in tomorrow's cities. The initiative to develop an experimental research tool like this allows to debate of methods and potential of



serious games in urban research. With the experience that we have of construction and deployment of RoboSpectif, we can discuss of serious game's contributions and boundaries in urban research.

### **Integrated management of water resources and regionalization in Morocco, what symbiosis is used in search of water equity?**

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S12-S1 Socio-spatial equity in the light of post-industrial restructuring, modeling exercises in Africa and Asia  
IUT\_Room 205, August 30, 2019, 2:00 PM - 4:00 PM

Territorial equity refers to the spatial dimension of social justice. It expresses a territorial configuration that provides all citizens with the same conditions of access to different resources and opportunities (employment, electricity, water, etc.). In this context, equitable and sustainable access to water has become a priority for all decision makers as it is believed to be one of the pillars of sustainable development. In Morocco, water potential has long been considered sufficient in comparison with the country's population growth. However, the kingdom still faces inequalities in terms of access to this vital resource. The National Plan for Watershed Management (PNABV) has come - since 1996 - to reduce these disparities, and improve the socio-spatial equity of access to water (EL Mokaddem and Benchekroun, 2016). This strategy has enabled the creation of nine watershed agencies and aims to promote socio-spatial justice and a localized, integrated and concerted approach to water resources management (IWRM). The feedback from the implementation of this policy shows that the efforts made in terms of management and management of water resources are globally recognized, but it also revealed the strong inequalities of the distribution of water. These disparities constitute real constraints for the country's development (Houdret, 2012).

Later, the strategic work of advanced regionalization comes to regulate dysfunctions and socio-spatial imbalances where the fight against inequalities remains a fundamental component. It is based on the principle of administrative reorganization of territories in the sense of greater spatial equity (El Maguiri et al., 2018).

The overall objective of this communication is to answer essentially three questions: What about socio-spatial inequalities in access to water resources in Morocco? Is there a coherence between the new administrative division of twelve regions and the division by watershed? And what solutions do the state policies have for managing water resources to reduce inequalities in access to water?

To achieve the goal of our research, we have opted for an exploratory approach using a vast body of literature including national surveys of water resources, academic work, official reports and those of specialized NGOs ... etc. The use of national, regional and local statistics will illustrate our remarks in symbiosis with maps, graphs and models relating different logics of division (regions, municipalities, watershed agencies) to reflect the experience of the kingdom's access to water as a vital commodity and as a vehicle for socio-economic development.

### **Albacete's natural areas network**

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G19-O1 Health and Environmental Issues  
MILC\_Room 409, August 29, 2019, 9:00 AM - 10:30 AM

Spain is one of the first countries in the world in having a natural area. In fact, the first national park was created in 1918. Nowadays, Spain has many natural areas, not only national parks. There are different categories, depending on the type of nature protection: national parks, natural parks, natural reserves, natural monuments, protected landscape, and Natura 2000 areas Network.

Natural areas concerned with Autonomous Communities. Thus, Castilla-La Mancha is the responsible for natural areas policy.

Albacete is one the five provinces in Castilla-La Mancha. Albacete has some natural areas declared: two natural parks, four natural reserves, once micro-reserves and two natural monuments.

Visitor services are quite important in the most of the natural areas. Natural parks are the natural areas more concerned about visitor issues. These are a type of natural areas that have in the same level sustainable development, tourism and natural resource protection.

We try to analyze visitor field. In fact, trails are really popular. Also, the number of visitors is essential to guarantee the future of natural areas and the importance of services in the area.

Albacete is a province with a great amount of natural resources that will be essential to provide a good experience for visitors.

### **Impact of the main road risk indicators on the number of accidents that occur in Algeria**

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S60-S1 Road Safety Management in Developing Countries: the case of Africa

IUT\_Room 108, August 29, 2019, 4:30 PM - 6:00 PM

The object of our thesis is to determine the impact and degree of influence of the main road risk indicators on the number of accidents that occur each year in Algeria.

At first, based on a quantitative multi-variate modeling, we measured, for both rural and urban areas, the impact of the indicators related to the user's behavior, the vehicle as well as the road environment on the occurrence of traffic accidents. The results show that traffic accidents occurred in urban areas were not influenced by the same variables than those occurred in rural areas, except for variables related to non-compliance with regulatory speed limit and dangerous overtaking.

In addition, a binary variable modelling was developed to determine the impact of the indicator related to the enforcement of statutory and regulatory bills on reducing the number of accidents. The expected impact in enforcing the various bills, further strengthening the functioning of the road safety system is reached in the short term but, the medium term results prove to be unsatisfactory on the ground.

All the more, in order to determine the impact of some factors related to the road user's behavior, the traffic police and the various parties involved in training in driving-schools, our study was completed by a field survey of drivers in the county of Bejaia. The results of the survey confirm that: drivers who have never been subject to a driving offense are less likely to be at risk of an accident; the majority of offenders are not firmly repressed; the danger in mixed traffic is mostly generated by pedestrians, semi-trailers and motorcyclists. Thus, based on a logistic modelling, we confirmed that: the average distance covered is a risk factor for road accidents; negligence-linked recidivism becomes a high risk factor and long experience in driving does not spare the occurrence of an accident.

### **A New Space Emerges: — Intraregional and International Mobility in the ASEAN Region and Japan**

Dr. Eriko Hiraiwa<sup>1</sup>

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This study explores the extent to which Japan's new visa policy that has introduced a category for unskilled workers has affected the movement of labor in Asia. We compare Asia's geographical space with other regions such as the EU that have already established a free movement framework. Amidst the rapid global development of economic integration in trade and investment, international and intraregional labor movement has also expanded within Asia, especially in the Association of Southeast Asian Nations (ASEAN), where the practices and regulatory systems are very different from each other. However, its diversity might make ASEAN a new actor in the world migration regulatory system and within the ASEAN Economic Community. We examine the changes in Japanese immigration policy and practices as well as their links to ASEAN countries and compare them with those in other geographical regions such as EU and MERCOSUR. In summary, we focus on the geographical space of Asia, which has the potential to provide a new perspective in the map of international migration.

### **The drivers of territorial anchorage of food**

Dr. Marie Houdart<sup>1</sup>, Dr Baritoux Virginie, Iceri Vanessa, Pr Lardon Sylvie, Dr Le Bel Pierre-Mathieu, Dr Loudiyi Salma

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S21-S2 Circularities and proximities : stakeholders, scales, ressources  
UdL\_Room 106, August 28, 2019, 2:00 PM - 4:00 PM

The territorial anchorage of food can be seen as the reconnection of agriculture and food with territories. It takes the form of various initiatives, presented as alternatives to the dominant, concentrated and globalized agri-food system. These initiatives are supported by a diversity of actors (market, civil society and/or public) and concern various scales. Our question concerns the drivers of the territorial anchorage of food: are there commonalities between the different food anchorage processes, whatever the type of actor carrying the initiative and its scale of action?

The results presented in this communication are based on the cross-analysis of fifteen case studies conducted in the PSDR4 INVENTER project. These cases examine the role of different types of actors in food governance and food initiatives at different scales. First, the cross-analysis shows that food territorial anchorage is based on the combination of both territorial and extra-territorial resources, regardless of the type of actors or the scale of action. Second, the case studies highlight that food territorial anchorage is often based on bringing together actors with different models. This reconciliation can be achieved through the implementation of a participatory approach or through specific modalities of coordination of actors (formal and informal). Third, territorial anchorage of food is based on the specific contributions of key actors, whether collective or individual. These contributions may consist in mobilizing certain resources, bringing together and coordinating stakeholders, integrating and/or assimilating different models or spreading values and practices from one place to another.

In conclusion, the cross-analysis of our studies highlights several points: territorial anchorage of food is carried out according to a great diversity of processes (setting up institutional projects or collective action for example); it is based on the mobilization and creation of resources that can be of different natures but also of different scales; it often involves bringing together different food system models. Research perspectives are proposed on the mechanisms for implementing the specific contributions of some actors.

## **Persistence of commuting Habits: Context effects in Germany**

**Ms Ramona Hübner**<sup>1</sup>

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S07-S2 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers  
IUT\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

Based on the geo-referenced data, I analyze the commuting behavior of employees in Germany. In terms of urbanization and the demographic change, the importance of commuting is continuously growing. With the help of a behavioral economic approach, which is based on the investigation of Simonsohn (2006) for the US, I can show that it is not only the wage and the individual heterogeneity that shape commuting decisions. Instead, the commuting behavior depends on the context individuals observe in the past. In particular, I demonstrate that commuting preferences and thus the commuting decision of individuals are influenced by past-observed commuting options: Workers choose longer commuting times in a region they just moved to, the longer the average commute was in the region they moved away. My results indicate that this effect is especially driven by past-observed commuting options and less by individual heterogeneity, habits and selectivity. Regarding the socio-demographic factor of age, the influence of past-observed commuting options on the individually selected commuting time is the strongest for older workers. In addition, I demonstrate if individuals stay in the new region, the effect of the previous region disappears. This is consistent with behavioral economic prediction, but not with habit formation and stable taste preferences.

## **Evolution of Spatial Industrial Clusters: Agent-Based Model**

Dr. Martin Zoričák<sup>1</sup>, Prof Vladimír Gazda<sup>1</sup>, Dr. Denis Horváth<sup>2</sup>, **Prof Oto Hudec**<sup>1</sup>

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S27-S1 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?  
MILC\_Room 309, August 28, 2019, 11:00 AM - 1:00 PM

Several theoretical concepts (e.g. the Marshallian district theory, New Economic Geography) effort to explain why the firms from the same industry have a tendency to locate close to each other and to constitute a population of firms forming an industrial district. The productivity in the industrial districts is enabled by the collective learning in the emerged industrial clusters thanks to the proximity of the economic agents through innovation and imitation. A firm often starts with not only one industry and several activities. Its location is backed by looking for a free location near other firms in the same industry but working in different - complementary activities to maximise the market position.

A simulation model of historical industrial evolution based on Agent-Based modelling and Cellular automata is inspired by the Bak-Sneppen model of biological evolution. The two-dimensional cellular automata (two-dimensional periodic lattice equivalent to the two-dimensional torus) predesignated to demonstrate real-world spatial cooperation and competition among the firms are proposed. As the evolution of industries is modelled, the ancient time (initial conditions) is set in the firm profile by a random initial assignment of the single industry. Later on, the producers gradually began to recognise the advantages of specialisation and cooperation.

Performance of a firm is considered as dependent on the fitness of its industries and activities with its neighbourhood. In the course of evolutionary simulation, the least fitted firms are repeatedly forced to adapt to the changing environment by partial mutations of their profiles. The mechanism of evolution in the critical state can be thought of as an exploratory search for local better fitness, which is rarely successful,

but sometimes has enormous effect on the ecosystem. As achieving the self-organised criticality, even a small change in an industrial profile can cause massive waves of firm restructuring resulting in a new spatial pattern reorganisation.

In the long-term, new industrial profiles emerge and firms become self-organised in spatial clusters evolving towards Zipf's rank-size distribution. The proposed simulation model demonstrates its ability to explain appropriately the long-term evolution of industrial economic structures in both time and space. Moreover, spatial modelling, starting from the basic division of labour to the present, discovers what combination of the number of industries and activities is the most advantageous for a firm to survive and to increasing its fitness.

### **Building resilience: incorporating age-friendly environments into an integrated assessment of resilience to climate-related hazards in metropolitan land-use management**

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G20-O1 Social Innovation for Resilient Regions  
IUT\_Room 203, August 29, 2019, 4:30 PM - 6:00 PM

#### 1. Background

Major portions of metropolitan areas in Asia are highly exposed and vulnerable to devastating climate-related hazards due to rapid urbanization and over-development in hazard-prone areas. By 2020, as United Nations' warning, many Asian countries will also become 'super-aged societies', such as Taiwan. However, local authorities rarely employ resilience approaches to build age-friendly environments and to support disaster risk and land-use management. Therefore, a challenge arisen for decision-makers is how to enhance the resilience of metropolitan areas within the context of age-friendliness and disaster risk reduction. This study aims to propose a novel methodology that encourages stakeholder participation and incorporate age-friendly concept into assessing hazard resilience, examining determinants of resilience as well as communicate to policy-makers in shaping metropolitan land-use policies.

#### 2. Methods and data

Using Taipei Metropolis, Taiwan as a study area, we created a resilience metric called the Indicators of Resilience to Climate-Related Hazards for the Local Elderly (IRCHLE) that can serve as a proxy for communities' various capacities contributing to resilience and age-friendly environments. Then, this metric combined focus group meeting with multicriteria decision analysis to measure and map resilience. We further incorporated a participatory geographic information system (GIS)-based spatial statistical technique with cluster analysis to examine the extent to which resilience was spatially autocorrelated throughout the metropolitan areas, and explain why the clustering of low resilient areas occurs in specific locations. To illustrate the proposed methodology, the study collected data on the resilience, age-friendly attributes and disaster risk characteristics. The data were offered by the National Science and Technology Center for Disaster Reduction, National Land-Use Investigation as well as official census statistics.

#### 3. Results

Integrating cluster with GIS-based spatial statistical analysis, the resilience of Taipei Metropolis was divided into three groups of distribution patterns. This helps identify the core and hotspot areas for policy-makers to improve land-use planning, age-friendliness and promote resilience. Results show that the least resilient areas were mostly distributed in the downtown cores and some historic districts. Moreover, we applied a multivariate regression analysis to examine how the land-use planning and infrastructure factors connected with resilience. Results of regression analysis disclose that the major factors influence resilience, including the levels of exposure to hazards, infrastructure investments and land-use types. Finally, our findings provide stakeholders and policy-makers with better adaptive options to design and synthesize patchworks

of planning measures for various types of resilience areas to enhance their age-friendliness and reduce disaster risk.

## **What is “connectivity”? Measuring the regional collaboration potential within the Smart Specialisation Strategy**

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S54-S2 Evaluating Smart Specialisation: early evidence on policy implementation and economic transformation

IUT\_Room 304, August 29, 2019, 2:00 PM - 4:00 PM

The concept of connectivity proposed by the European Commission in the guide to S3 implementation foresees a strong interaction between European regions in sharing and exchanging research and innovation. This basically implies looking for somehow related specialisation patterns beyond the regional administrative boundaries which have the potential to be combined with regional ones.

Up to now, very few regions have considered connectivity in the design of their S3 strategy. In fact, the lack of data and the absence of a clear methodology discouraged regions from attempting to analyse and measure any potential connection with potential European partners, neither within national boundaries.

Using patent data to categorize technological domains in each region, the aim of our work is to explore and empirically assess different measures of connectivity. In particular, we look both at measures of similarity and complementarity between European regions. Similarity refers to the degree of resemblance in terms of relative specialisation in technological domains between regions. Complementarity is related to the combinatorial potential of the technological domains of pairs of regions and it is based on the aforementioned concept of relatedness. In order to understand whether these two dimensions of connectivity are related to the actual collaboration behaviour of EU regions, we look at past EU funded project that preceded the implementation of Smart Specialisation Strategy, namely those under the Seventh Framework Programme.

Using the pairs of regions as observations, we look at the probability that two regions collaborate in EU projects (namely a standardized measure of co-occurrence) is related to the similarity and the complementarity between the technological domains in which they are specialised.

Controlling for a number of characteristics of regions, we find that distance has a negative effect on collaboration and being in the same country or in the same NUTS1 are positively related. Our measures of connectivity seem to play a significant role in affecting the probability of collaboration, but while the degree of similarity is positively associated to the collaboration between region the degree of complementarity has the opposite effect. These findings suggest that regions tend to establish collaborations when they are technologically similar to each others but not when their technological specialisations show high relatedness, and supposedly high combinatorial potential. From a policy perspective, these results raise questions about both the rationale and the implementation of connectivity strategies as suggested by S3 guidelines.

## **Outward Foreign Direct Investment and the Skill Composition in Mexican Regions.**

Mr Eduardo Ibarra-Olivo<sup>1</sup>

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Despite the growing body of literature devoted to studying the employment effects of outward FDI (OFDI) on the home economy, evidence on the effects is still inconclusive, with the main focus being developed economies. Domestic firms invest at home and abroad, implying both negative and positive employment effects. Net effects will depend on a variety of factors; type of industry, investment motives and competitive context of host economies, as well as labour market and macroeconomic conditions. In the case of developed countries, although evidence is not conclusive, in general OFDI has been found to increase, at least marginally, overall levels of domestic employment, accompanied by changes in the skills composition. OFDI has been generally thought of a consequence of economic development. Thus, very little attention has been paid to the contribution which OFDI makes to the development of home countries when the investing multinationals are from less advanced economies. The early 2000s saw significant changes in the patterns of cross-border investments as more companies from developing and emerging economies increased their participation in the world's total foreign direct investment. Despite the significant rise of emerging country multinationals in the global investment landscape, evidence on OFDI effects on employment and skills in home emerging economies is relatively scant. Furthermore, whether the particular destination country of OFDI matters for the employment in the industry-region of the firm, very much remains an empirical question, especially in the context of emerging economies. Against this background, Mexico represents a good case to study the home-effects of outward FDI for two main reasons. First, as an emerging economy it is still an important recipient of inward FDI, while at the same time many Mexican firms are becoming important investors abroad. Second, despite these trends, Mexican labour markets are still very fragmented, and the skill distribution remains highly skewed towards the lower end. This paper addresses three questions in turn. First, we investigate the extent to which OFDI is associated with changes in employment in Mexican industry-regions. In other words, whether investing abroad leads to decreases in the aggregate demand for labour in the relevant labour markets. Second, we enquire if increasing FDI outflows are associated with changes in the skill composition of local labour markets by shifting the demand for certain skills. Lastly, we ask whether the effects on labour demand for different skills vary according to the country of OFDI destination.

### **Romanian entrepreneurial resilience from the quality of life perspectives**

**Dr. Raluca Ignat<sup>1</sup>**

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S40-S5 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 29, 2019, 2:00 PM - 4:00 PM

**Purpose:** The main purpose of this paper is to emphasize the correlation between some quality of life indicators and Romanian entrepreneurial manifestation, especially for the younger in the most vulnerable age period, 15-30 years. Based on the correlation, proposals for policy makers and public programmers are discussed and opportunities for future research are outlined.

**Methodology:** The research question of the paper is how much does influence the quality of life in Romania the entrepreneurial resilience? In order to reach the answer, a statistic analysis of secondary data from the National Trade Register Office in Romania regarding the number of the incorporation of private limited companies for debutantes and such others is being run together with some national indicators from the quality of life perspectives, such income level and unemployment rate, number of fiscal taxes. Than an analysis on the correlation between few quality of life indicators and number of new created/registered companies in Romania is run.

Findings: The paper identifies the conceptual junction between entrepreneurship and resilience, and the connectivity of these two concepts and quality of life. Resilience is a modern concept, although it was first used in engineering in the middle of the last century. The evolution of the concept is interesting, because this concept has gone through an obvious and notable multi-discipline.

In the last three decades, Romania was the scene of important social, political and economic exchanges, more likely shocks. In the same time, young citizens resilience was tested by unexpected and major shocks, such as revolution, changes of the economic framework, transition from centralized economy to market economy, impact of IT on the main Romanian industries and their real reorganization, the continuous urban-rural development gap, the brain-drain and labor migration towards more developed countries, the impact of the structural, European and national funds. Yet, Romania succeeded in showing resilient companies and, resilient entrepreneurs. What are the causes of all these and which will be the most important ingredient for their success represent important questions for economic and business resilience in general, and for Romanians especially.

Paper type: literature review, statistical analysis, comparative analysis.

### **Definition, scale and impact of proximity in a community-based primary care system : a study of São Paulo.**

**Ms Pauline Iosti<sup>1</sup>**

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S06-S1 Changes in health care provision, spatial mobility and access to care,  
IUT\_Room 103, August 28, 2019, 11:00 AM - 1:00 PM

Since the Alma-Ata conference in 1978, primary health care has been determined to be the main organizational principle of all health care provision systems, because it allows a greater equity and accessibility to health care. Community-based primary health care are organized on a proximity basis, that allows health professionals to identify and specifically respond to local health needs. Based on this assumption, Brazil created in 1994 the Estrategia de Saúde da Família (Family Health Strategy - FHS). This program is organized on a territorial basis, which means that multidisciplinary medical teams are responsible for a population of about 1500 families, according to their place of residence. This program and its impact on health has been widely studied since its creation. Nevertheless, little has been said on the precise definition of proximity used in the FHS or on its impact on the users' accessibility to health care and satisfaction. The goal of this contribution will be to question the definition, the extent and the benefits of proximity as an organizational principle of community-based primary care in Brazil.

The data was collected in São Paulo between October 2017 and May 2018, using a qualitative methodology (observations, interviews with about 20 administrative and health care professionals and 80 users). Two FHS facilities have been studied, with various territorial and social profile.

The results show that the use of proximity as an organizational principle of primary care refers in reality to three different types of proximity: a geographical, an organized and a relational one. Each of these definitions involve different actors and scales of action. Their impact on declared access to health care depends on the individual, social and health profile of the population. Proximity appears as a benefit mostly to elderly people or to people with a chronic disease, who need a regular and continuous care. For the rest of the population, the results are nuanced: if relational proximity is valued, territorialisation of health care was reported by some interviewees as a factor of dissatisfaction.

As a conclusion, these results do not question proximity itself as an organizing principle of primary care and as a potential benefit for populations' health and access to health care, but it does question the choice of a territorial approach of this proximity.



## **The sustainability of a community nurses programme in mountain areas: a Directional Distance Function approach.**

Prof. Roberto Ippoliti<sup>1</sup>, Dr. Greta Falavigna<sup>2</sup>

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G06-O1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 11:00 AM - 1:00 PM

This manuscript focuses on the sustainability of a European Union project, funded by the Alpine Space Programme. This project aims to develop an innovative care model based on community nurses to support municipalities in promoting active and healthy ageing. Adopting the Directional Distance Function, our work sets out to propose a specific score able to identify all those municipalities that are inefficient in supporting the ageing process. According to the estimated scores, policy makers can make more rational use of the available resources, implementing the innovative treatments where it is most necessary. In this way, the achievements of this European Union project can be maintained for the sake of the next generation, avoiding its collapse as soon as funding shifts to new programmes.

## **Influence of location factors activated by economic policy on industrial park**

Dr. Toshiharu Ishikawa<sup>1</sup>

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G12-O3 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

## **Economic impact analysis of regional policy using an interregional input-output model considering interregional commuting and consuming regions**

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G06-O4 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 2:00 PM - 4:00 PM

Various types of policies related to economic promotion and population growth have been implemented for regional revival. The economic effects of these policies are generally estimated using an intra-regional input-output model, and these policies are evaluated by indexes such as production, value added, and labor income. However, one major issue with the intra-regional model commonly used is how to endogenize private household consumption that can be linked to labor income. Labor income estimated by the conventional model is not the net regional income, but rather, the gross regional income. That is, the gross regional income is distributed to the other region due to interregional commuting, and some part of the consumption demand of households living in a region is allocated to the other region. Therefore, the conventional model may overestimate the economic effects of the own region.

In this study, we developed an interregional input-output model with interregional commuting and consuming regions and considered a new method for analyzing the economic effects of such promotion policies for a small region. As an example, we analyzed the effects of some regional policies for some cities using this model and found that analysis using the conventional model overestimates the economic effects of regional policy.

## **Spatial economic impacts of highway network completion in Greater Tokyo Area**

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S32-S1 Spatial CGE, land use and transport modeling  
IUT\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

Full paper is available online.

## **Regional Location and the Question of Technological and Non-Technological Innovation**

Dr. Emil Israel<sup>1</sup>, Dr. Eyal Salinger<sup>2</sup>

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G08-O5 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 2:00 PM - 4:00 PM

Innovation is a diffusional process, according to much research in geography. In this process, saturation in economic cores of national and international markets increases the probability of an innovation trickling out and affecting other regions. Economic cores provide the best prospects for innovation in comparison to lagging regions. Economic cores, which are usually metropolitan regions, are characterized by an innovative 'milieu' with ample and appropriate resources to stimulate innovation, particularly technological advances, that stems from R&D investments and introduction of new products. Conversely, lagging regions lacking significant urban agglomerations suffer from structural inferiority due to, among other things, lack of an appropriate milieu. These shortages include lack of a skilled labor force, infrastructural inferiority, absence of training facilities, and social and organizational culture that does not encourage (technological) innovation. To contend with this inferiority, contemporary regional policies emphasize new aspects of innovation. These endeavors advance non-technological forms of innovation, which do not necessarily require significant investments in R&D. It is believed that such a shift could stimulate regional innovation, and thus promote economic growth of lagging regions. This study explores different forms of regional innovation by looking at an empirical case study that concentrates on a comparison between a core region and periphery in Israel. The current inquiry utilizes the innovation surveys of the Central Bureau of Statistics of Israel conducted in the years 2006-2008 and 2010-2012. These surveys sampled more than 4,000 firms in different economic sectors, within different parts of the country, enabling the distinction between technological and non-technological innovation outcomes (for example innovative products and processes) that these firms introduced in different geographical areas. The study uses logistic regression models to test for the probability that firms introduce an innovative output, as function of their location, investments in R&D, economic sectors to which they belong to, technological characteristics, as well as their size, degree of multi-nationality and their seniority in the market. The results show that overall, differences in the probability of a firm to technologically innovate are not necessarily the outcome of their spatial location. However, the location of firms in the periphery decreases the probability that a firm will non-technologically innovate in comparison to location in Israel's main metropolitan region. The findings also indicate that firms in the periphery will conduct more non-technological innovation if they were in core regions. The results have policy implications for the promotion of regional economic growth.

## **Understanding Social Considerations on Carpooling in the Autonomous Vehicle Era**

Mr Fabian Israel<sup>1</sup>, Ms Pnina Plaut<sup>1</sup>

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For the past few years, there has been a growing interest in autonomous vehicles (AV) due to their revolutionary potential both for vehicle technology, and more importantly for their far-reaching expected impacts on urban mobility. One of the main questions emerging from AV research is whether AV can be an agent for a new socio-urban mobility system. AVs might pave the way for more creative and innovative ways of sharing mobility models. It is widely accepted that the main benefits that AV may bring to our urban mobility, is conditioned by the form in which the new technology will be adopted and used. If AV will be adopted in a sharing form it could be very beneficial for our urban life, if not, the new technology will only worsen the already damaged urban environment.

In this work we explore how AV could be adopted under a sharing usage modality by user's perception, in particular we refer to tripsharing in the AV era. In this direction we want to understand people's perceptions and desires about possible travel behavior forms related to group configurations for travel, based on socio-demographic characteristics, lifestyles, activity and travel needs, preferences, values and common interest. Focus groups are conducted in order to explore and reveal the principal dimensions/parameters that are relevant to individuals when they think about AV and specifically shared AV usage including: travel behavior changes, subjective considerations about the possibilities that AVs offer, and the construction of future scenarios and usage models. The main goal is to identify key parameters regarding the preferences and concerns of users for the potential SAVs usage. Understanding and predicting sharing models for AV usage are important elements for the future development of transport infrastructure, business models, regulations and new public-private partnership schemes.

### **Urban accessibility by public transport, what particularity for the new city Ali Mendjeli (Constantine)?**

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G16-O6 Transport, Land Use and Accessibility  
IUT\_Room 110, August 30, 2019, 11:00 AM - 1:00 PM

In the contemporary city, transport systems are clearly identified objects that are subject to multiple constraints (consumption of space and energy), accused of generating nuisances (both locally and globally), but which are also subject to multiple expectations (serve all areas of the city, accessible to all social groups and especially effective).

Created to solve the problems of the mother city Constantine where the first projects began in 1993, the new city Ali Mendjeli today has exceeded the expectations of its designers, marked by its fluctuating urban dynamics, whose accessibility is one of its major areas.

Our presentation is part of a thesis project on modeling tools for urban accessibility by public transport, it takes a reading of current urban mobility focusing on the public transport network and the interaction logic between public and private operators in order to evaluate the quality of the offer and redefine the demand through the intermediary of modeling tools in particular GIS.

The measurement of accessibility is a privileged tool for analyzing the spatial performance of transport networks according to temporal variables (frequency, regularity, speed, adaptation to urban rhythms), GIS represents an advanced technique of monitoring, adjustment or intervention where our approach leads to the design of a system integrating all public transport networks (tramway & bus), it is based on the simulation of the new network states which leads to reduce the dysfunctions and translate its stakes into its spatial dimension.

## **Does emerging middle class support democracy? A comparative analysis of China, countries with authoritarian political regimes and recent post-socialist democracies.**

**Dr. Artjoms Ivlevs**<sup>1</sup>

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S24-S1 Neo-Weberian Approaches to China: Cultural Attitudes and Economic Development  
IUT\_Room 415, August 29, 2019, 4:30 PM - 6:00 PM

This paper aims to assess the political attitudes, actions and preferences of the middle class people in China, as well as in other countries characterised by authoritarian political regimes/tendencies (Russia, Turkey, Iran, Egypt, Vietnam, Azerbaijan) and post-socialist countries that have recently established democratic regimes (Poland, Hungary, Romania, Slovakia, Estonia), with a broader objective of identifying the role that the middle class might play in contributing to and sustaining democratic and institutional change. Conceptually, the study draws on the modernisation and critical junctures theories of economic growth and political development. The empirical analysis is based on the two rounds (2005-09 and 2010-14) of the Worlds Values Survey. Very preliminary results suggest that, in China, people in the upper half of the income distribution or those identifying themselves as middle class are not more likely to support democracy or be engaged in political activities than poorer people. This casts doubt on whether the middle class in China will be driving political and institutional change. Comparisons with other countries are currently underway.

## **Urban regeneration in Poland: a review of theoretical aspects and an analysis of experiences from practice**

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G06-O2 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 4:30 PM - 6:00 PM

Urban regeneration/renewal is an inner-city process that began in the 1950s in Western Europe and the USA aimed at regenerating degraded residential environments and since the 1970s – at improving the attractiveness of places (market objectives – generating an increase in the value of property). In Poland, until 1990, during the period of real socialism, city centres were underinvested, but one can distinguish certain, gradually more and more original processes implemented in these areas: reconstruction, neo-integration, and later, retroversion.

The urban renewal method, known in Western Europe and North America as urban regeneration/renewal, was more widely popularized in Poland as "revitalisation" around 2004, after Poland's accession to the EU. The Regional Operational Programmes co-financed by the EU provided funds for "revitalisation" as an important instrument of urban renewal.

Following detailed research of the projects implemented as part of "revitalisation" projects, it was found that in practice "revitalisation" in Poland was a specific process, only partly referring to the experience of urban regeneration/renewal. Three groups of activities are collectively referred to as revitalisation:

1. Transformation of post-industrial and degraded areas and their adaptation to new functions
2. Renewal/aestheticisation of city centres (and in recent years also of rural areas)
3. Implementation of other projects important for local communities

The vast majority of the "revitalisation" projects focused on the renewal of centres, which at the same time were constantly losing their functions. Revitalisation was not able to stop this process. However, it was found that local communities needed city centres to build their (territorial) identity and were willing to allocate public funds to them, even if they do not currently use these areas.

The research is a part of the NewUrbPact project co-financed by the National Centre for Research and Development within the Strategic Programme of Scientific Research and Development Works "Social and economic development of Poland in the conditions of globalizing markets" – GOSPOSTRATEG.

### **Developing Economic – Environmental Hybrid IO-CGE model for the Danish municipalities**

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S34-S1 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 11:00 AM - 1:00 PM

There are ongoing political and scientific debates regarding pollution from the economic activities and its consequences on nature and society in the global terms. The climate change seems inevitable and the natural resources keep depleting. One of the reasons can be because we lack understanding how to treat the resources and how to decrease pollution without creating economic disasters, hunger and further conflicts. Another reason can also be the fact that we look the environmental issues mainly globally with the national political checklist of solutions, however, we fail to understand that the pollution and utilisation of the resources are result of the locally bounded economic activities and therefore, solutions for the global environmental issues should be studied and solved locally. The aim of this paper is to develop methodological approaches for integrating environmental data to the local economic data and construct multiregional IO and CGE model bottom-up, for small geographical units, such as municipalities in Denmark. The research is based on the Danish Interregional economic model SAM-K/LINE for Danish municipalities. In this mode, the interregional SAM is built on two-by-two-by-two approach, involving two sets of actors (production units and institutions / households), two types of markets (commodities and factors) and two locations (origin and destination). While LINE is based on the Leontief and Miyazawa formulations of the Interrelational Income Multiplier Model that incorporates SAM data input and the two-by-two-by-two approach.

This paper describes the methodology that we use to hybridize the economic cycle of LINE with the emission cycle at the product (commodity) and the municipality (NUTS3) level.

In this paper we explain how we intend to extend SAM-K/LINE model by creating environmental-economic accounting for production and final demand by commodity and geography. This will allow us to study both producer and consumer actions and test how changes in the production at one side and the consumption on the other side can support the reduction of carbon footprint, by maintaining economic growth. Linking the demand-side approach to supply-side approach and developing the economic-environmental hybrid IO-CGE at the local (municipality) level will contribute to the previous similar attempts, which should create better understanding of how to solve environmental issues at the local level in order to save the planet globally.

### **Performance and Implications of Public Deliberation on Urban Metro Project -The Case of Gwangju in South Korea**

Prof. Bonghyun Jeong<sup>1</sup>

Gwangju Metro Line 2 Project (GMP) is an essential urban transportation infrastructure project to mitigate traffic congestion in GMC, improve the traffic environment and promote urban development. The basic plan for GMP was decided in 2002, but controversy has continued conflict over the route, changes in construction method and heavy budget burden over the past 16 years. As a result, the project was not finalized. This has resulted in problems such as aggravated traffic congestion in Gwangju Metropolitan City (GMC), increase in construction cost, deterioration of the urban environment, a declined urban economy, inconsistency of urban transport policy, and conflicts in civil society. GMP is an enlarged circulation type line, with a total length of 41.9 km and a total construction cost of 2.57 trillion won, which will be built in three stages during the 2019 ~ 2025 period.

The 7th Mayor of GMC, who was elected in June 2018, attempted to decide whether to implement the GMP through a public deliberation (PD). As a result of the PD, the project was finalized. Therefore, the purpose of this paper is to analyze the achievements and limitations of GMP and to present policy implications comprehensively. The main contents of this study include an introduction, an outline of public deliberation for transportation projects, a case study of public deliberation on GMP, the performance and implications of public deliberation on GMP, and conclusions. This study will be conducted by a theoretical review of related literature, an analysis of existing research and statistical data, participatory observation, and field survey. The results of this paper will contribute to the establishment of theories on public transportation investment, improvement of urban traffic problems, securing consistency and accountability of urban transport policies, and attracting public investment.

### **A Study on the Correlation between Mobile E-Government Use Satisfaction and Political Efficacy in South Korea's 2030 Generation**

Ms Juhee Jeong<sup>1</sup>, Mr James Jeong<sup>2</sup>, Mr Jumong Na<sup>3</sup>

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According to the Ministry of Science and ICT's 2017 Internet Usage Survey, 90.3% South Koreans over 3 years of age use the internet. In particular, the usage rate of smartphones in the 2030 generation reaches 99.8%, making it easier to access the Internet through mobile. Based on these trends, many scholars recently note that the Internet has transformed the younger generation into a political participant with a new mode of activity. In addition, the transition to e-government centered on citizen participation is taking place. Therefore, e-government is changing from 'provision' of civil service to 'role as window' where opinions can be presented if the internet is available. The purpose of this study is to confirm the descriptive statistics of the e-government use satisfaction of 2030 Generation households based on the survey of actual conditions of e-government service utilization conducted by the National Information Society Agency. This study subsequently gives an insight into the e-government services that have influenced the political efficacy of the 2030 Generation. Based on these insights, I will present development directions to reinforce Korea's status as a world leader in e-government. Through this study, it is expected that the citizens' political participation will be expanded in the future and the directions to better realize e-democracy will be presented.

## **Regionalizing Social Accounting Matrices through input-output updating methods: an empirical comparison analysis**

**Ms Sofía Jiménez<sup>1</sup>**, Alfredo Mainar<sup>2</sup>

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S34-S1 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 11:00 AM - 1:00 PM

The analysis of the functioning of the regional economies is fundamental to understand basic aspects in the economic development. Knowing the specific behavioural mechanisms of regional economies is key, both for the individual study of each region in particular, and for the analysis of interactions in a global economy, due to the mechanisms of translation of the effects between economies that operate in the same context. To capture the full economic impact, a significant amount of data is necessary, especially to use multisectoral models, which fit in a particularly suitable way to the regional analysis (use of linear multipliers or computable general equilibrium models (CGE), for example). But the application of these tools requires the use of Input-output frames or, whenever possible, the construction of Social Accounting Matrices (SAM). Therefore, one of the biggest problems when carrying out regional economic analysis is the absence of adequate databases for the empirical study of the theoretical models proposed or for the ex-ante evaluation of regional economic policy proposals.

The objective of this paper is to get some more insight about the different methods available for regionalizing SAMs. In order to do that, we apply some existing methods in the literature for the updating and temporal projection of Input output tables, but adapted here to Social Accounting matrices (SAMs) and to a spatial projection or extrapolation. For this application, a European Union SAM will be used and its systematic regionalization will be applied to each of the 28 member states.

The methods that we have chosen are going to test are the following: EURO (Eurostat, 2008c; Beutel and Rueda-Cantuche, 2012), RAS (Günlük-Senesen and Bates, 1988; McDougall, 1999), Cross Entropy Method - CEM- (Robinson et al., 2001) and Flegg's location quotient (Flegg and Tohmo, 2013). The EU28 SAM will be regionalized for each member state, using all methods indicated and making a subsequent comparison with the single country SAM directly estimated from its national data.

For further information.

See extended abstract online.

### **Economic growth and the impact of territorial and economic closeness.**

**Ms Sofía Jiménez<sup>1</sup>**, Ms Rosa Duarte<sup>1</sup>, Mr Julio Sánchez-Chóliz<sup>1</sup>, Mr Alfredo Mainar<sup>2</sup>, Ms Patricia Fuentes<sup>3</sup>

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G08-O3 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 4:30 PM - 6:00 PM

Nowadays new debate about economic growth and its drivers can be found in economic literature. Besides, with the start of globalization process regional patterns and its effects over development have been on the forefront of discussions.

With technological improvements that led to lower transportation costs and better communication among countries and regions, territorial and geographical aspects seem to be replaced in a second place. However, as Crevoisier (2004) claim development and economic growth cannot be understood separately of the

spatial context. Besides, some recent works show the importance of spatial issues in order to do a country/region more attractive than another for capturing new investments, trade partners, etc. However, we have to note that not only does matter spatial actors but also social and economic ones are important. In other words, economic growth is explained by a combination of economic, social and geographical drivers. In this context, the main aim of this study is to get more insight about these issues analyzing to what extent these different dimensions (economic, social and geographical) have affected economic growth in the last two decades.

In order to do that we are going to make use of a panel data analysis where GDPpc will be our dependent variable and the analysis is going to be done in an international context at country level. We will basically explore the role of four variables that are geographical distance, economic similarity, social and cultural similarity and trade closeness that will be calculated by the application of nearest neighbor method. For the construction of most part of variables, mainly economic similarity and trade closeness, we will work in an input-output framework because of its capacity to capture linkages among countries. MRIO framework is a useful tool to study these kind of issues as this let us capture issues such as technological and spatial spillovers or technological regional patterns (see Capello (2013)). As a main database we will use EORA that covers 190 countries and the period 1990-2015 (see Lenzen et al. (2013)). The rest of variables will be built with data from the World Bank following the most common indicators used in economic literature (for instance, linguistic distance). We expected as a results to be all of them significant although economic similarity and trade closeness with higher coefficient and increasing trend of its effects.

## **Territorial Project at Reunion Island around savoir-vivre, proximity relations and culture as commons**

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S20-S3 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

In Reunion Island, a French overseas department in the south-west Indian Ocean, spared since now 5 to 10 years, different initiatives and alternatives to defend the the island's commons. From biodiversity to landscapes or from musical culture to architectural heritage, take place the Reunion's living-together, as the pillars of the sustainable development of the island. Referring to the Reunion living-together as a common, a set of actors from a multidisciplinary panel and multiple decision-making spheres, rise to build the project of a societal model change for the territory. This common good, around which a diversity of identity, points of view, and speeches can be built, poses the problem of a common project capable of making one in this diversity. This ambition encourages to meet actors for whom the tools of a common work must be drawn and redraw in an iterative process, from the edition to launching project. This project, is the study case on which this communication proposes to return. How do we do to pass from a common speech on the links between science and society to a common action carried by a group of engaged citizens. Will see that the definition of this common, question the actors in place and encourage a restructuring territorial action.

## **Not so Smart? The City and the Digital Economy**



**Prof. Calvin Jones**<sup>1</sup>

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S11-S1 The regional socio-economic impact of the 4th industrial revolution  
UdL\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

There has been extensive and detailed discussion of the impact of digital technologies on productive and distribution systems, and especially the role of humans within them. Analysis has focussed on which tasks, occupations and industries might be most or most quickly affected, and what ameliorative actions might be taken to reduce or mitigate negative impacts. There has, however, been far less attention on the spatial implications of technological incursion, with such analysis so far only drawing on patterns of industrial distribution or extant automation to draw conclusions. We consider more widely the role of cities in an automating world and suggest that the impact of technology on production and consumption will combine with ownership patterns in technology sectors and the existing distribution of globalised production to significantly reduce the ability of cities in most places, and hence of most countries, to generate economic value. In particular the reduction in labour returns relative to capital, the concentrated ownership of critical technological intellectual property and mediating platforms, together with the concentration of many cities on tech-vulnerable activities are important issues. The ultimate 'resting place' of value added will be critical at a time when governments at various scales will be called upon to intervene to help people respond to the socio-economic impacts of artificial intelligence and automation .

### **Productivity effects of decentralization: fragmentation, local authority and quality of governance**

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G22-YS1 Institutions  
IUT\_Room 205, August 29, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Business Innovation in Peripheral European Regions**

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G21-O1 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 9:00 AM - 10:30 AM

A key motivation and explanation for spatial concentration of economic activity is the potential for knowledge spillovers. However, there is only a recent (though growing) interest in how these factors work in peripheral locations. The analysis presented here seeks to shed light on the impact of peripherality on the effectiveness of R&D and cooperation on innovation. This analysis questions whether R&D and cooperation for business innovation in businesses is conditioned by the degree of geographic peripherality. The analysis uses data on innovation outputs and activity from the European Regional Innovation Scorecard and regional-level human capital and demographic data from Eurostat Regional Data. Peripherality is measured

by constructing construct an index which takes into account geographic distance and economic weight. A value is created for each region which is the weighted average of the GDP of all surrounding regions with the weighting decreasing as distance increases.

The paper analyses the impact of R&D and cooperation on innovation at a regional level and assesses the impact of being in the core versus the periphery on innovation at a regional level. The econometric model is estimated using a random effects panel estimation technique. Once the model is estimated we obtain the marginal effects of the impact of R&D and cooperation on innovation conditional upon the peripherality index. We then obtain two further impacts, the marginal effects of R&D on innovation conditional upon the centrality index and cooperation, and the marginal effects of cooperation on innovation conditional upon the centrality index and R&D.

The analysis finds that the effectiveness of R&D for innovation diminishes as regions become more peripheral, but remains positive for all regions. The effectiveness of cooperation for innovation diminishes as regions become more peripheral and is negative for approximately 30% of the most peripheral regions. R&D is most effective in central regions, particularly in regions with higher levels of cooperation. R&D is least effective in peripheral regions which also exhibit high levels of cooperation. Cooperation for innovation is most effective in core regions with high levels of R&D and in peripheral regions that exhibit relatively lower levels of R&D. Cooperation for innovation is least effective in peripheral regions that exhibit relatively higher levels of R&D. The analysis suggests that in central regions R&D and cooperation are complements for innovation, while in peripheral regions R&D and cooperation are substitutes.

### **Wages of foreign and native employees in Germany: New light on an old issue**

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S41-S6 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 29, 2019, 4:30 PM - 6:00 PM

Our paper puts new light on the decomposition of the wage gap between foreign and native employees in Germany. A general problem of such analyses is the chosen reference or comparison group. We overcome this problem by choosing an unbiased reference group that is neither discriminated nor preferred within a firm: German employees who work in firms that solely employ Germans. Our results show higher wages for foreign workers than for natives given their observable factors. We compare our findings to the results of the orthodox reference group in this context: German employees working in firms employing Germans and foreigners. Doing this, we find that observable factors explain almost the whole wage gap. To illustrate the economic implication of our findings we convert the effects of the observed factors on the wage gap into actual Euro amounts. Our results lead us to the conclusion that discrimination is negligible from an economic point of view. In addition, we can confirm some findings from previous studies: In particular, low-skilled foreign employees earn significantly higher wages than low-skilled German workers. In order to take a closer look at this circumstance and to increase the validity of our results, we take particular account of potential selectivity as well as a possible overqualification of foreign workers.

### **Regional inequalities in the EU countries: Utilizing the median**

Fueling the relative academic debate and providing insight to the evaluation of the relative policies, the evolution of regional inequalities is an issue of utmost importance. Hence, the study of regional inequalities - in particular, the study of regional convergence / divergence - is at the heart of regional science. From the policy viewpoint, the study of regional convergence / divergence may interpret as a sign with respect to the evaluation of the effectiveness and the efficiency of the implemented regional policy mix. From the theory viewpoint, the study of regional convergence / divergence may serve as an empirical exercise with respect to the affirmation of regional development theories.

Referring to the diachronic decrease of the overall dispersion of a (regional) dataset,  $\sigma$ -convergence is a dominant concept in the empirical regional convergence / divergence literature.  $\Sigma$ -convergence may, usually, apprehend through the coefficient of variation (CV) and the weighted coefficient of variation (wCV) measures. CV is a standardized (relative) measure of dispersion and may express as the ratio of the standard deviation of a (regional) dataset to the corresponding mean, at a given date. Including a weighting factor in the CV formula, so as to account for the corresponding relative (regional) size in the treatment of the (regional) dataset, allows for the compilation of the wCV formula, the weighted CV counterpart. The paper revisits the  $\sigma$ -convergence concept, on the, purely, statistical rationale that the mean is a central tendency measure highly sensitive to the presence of outliers. To this end, the paper specifies the conventional CV and wCV measures against the backdrop of the median, proposing the corresponding CV<sub>md</sub> and wCV<sub>md</sub> measures. Supported from an illustrative empirical analysis of regional inequalities in the EU countries (NUTS III spatial level), the paper indicates that different expressions of the  $\sigma$ -convergence concept may lead to different inferences with respect to regional inequalities. Such an indication, besides its scientific importance per se, provides important policy implications given that different expressions of the  $\sigma$ -convergence concept may mask the magnitude of the actual regional problem.

### **Firm performance, R&D government spending, and regional innovation: evidence from Greece**

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S55-S2 The EU Cohesion Policy after 2020 – How to achieve faster and more impactful spending where it is needed the most?

IUT\_Room 303, August 30, 2019, 11:00 AM - 1:00 PM

A driving force for regional economic growth is the high rate of innovation as it could be linked to regional competitiveness and increased welfare. Investment in research and development (R&D) is critical for fostering a successful innovation level. In the context of supporting innovative firms, governments promote R&D activities through a variety of instruments such as fiscal incentives and direct grants. The effectiveness of such policies is crucial for achieving sustainability, especially in times of economic rigidity, and needs careful examination.

Investment in R&D in Greece has increased significantly during the last decade, and reached 1.14% of the GDP in 2017. The role of government spending in R&D has been prominent, and even during the crisis the absolute numbers rose from 648 million in 2011 to 885 million in 2017. Regional differences in innovative performance demonstrate the necessity to evaluate the impact of such policies in promoting innovation and in turn, economic growth. We specifically utilize the National Strategic Reference Framework funding

program for the 2007-2013 period, and focus on the thematic priorities targeting to reinforce R&D activities in the country. Greek Regional Authorities administered the regional funds following a consultation process through a consortium of local partners that aimed to utilise local capabilities, skills and comparative advantages of each region, and shaped appropriate policies.

Our analysis examines the impact of Greek R&D government spending and regional innovation on individual firm performance, employing various econometric techniques, while controlling for both firm and regional characteristics, such as capital and labour, as well as, human capital, social-economic factors, corporate and market characteristics. To the best of our knowledge, this kind of evaluation takes place for the first time for Greece.

For the firm performance analysis, we utilise a rich source of business data, the National General Commercial Registry (G.E.MI.), where all legal forms of businesses in Greece are obliged to be registered. For the innovation part, we use newly collected and processed data from the Greek Patent Office (Hellenic Industrial Property Organization- OBI), in order to frame and analyze the innovative performance for Greek regions for the period of 1988-2016. Innovative performance is measured by both quantity and quality patent indicators.

Our study provides interesting results relating to R&D government spending effectiveness in promoting enhanced firm performance and innovation in micro level and demonstrates the role of other regional characteristics in this direction, as well.

### **Local food, as destination attribute for travel motivation, satisfaction and stimulus for tourism development**

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G18-O5 Tourism and Culture

IUT\_Room 104, August 30, 2019, 2:00 PM - 4:00 PM

Tourism has become an important global economic and leisure activity and food is a crucial element in destination branding and experience. Numerous promotional activities, including food experience are engaged in order to attract more tourists and improve their satisfaction. If a destination manages to identify and satisfy the needs and wants of tourists, these tourists will probably make repeat visits and spread positive word of mouth publicity. Food is a powerful tool that involves all human senses and can assist to tourists' satisfaction at a destination. Measuring tourist satisfaction plays an important role in marketing tourism products and services. In recent years, researchers have discussed the close relationships among the psychological variables, such as motivation, attitude, perception, and satisfaction. Therefore, it is worthwhile to use these variables to study about tourists' behavior. Specifically; perception is the process by which the sensations are selected, organized, and interpreted. Robbins (2005) defines perception as a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment. The tourists perceive the taste, quality, and nature through their five senses and perception may be different from tourist to tourist. Furthermore, sensation refers to the immediate response of the human sensory receptors, i.e. eyes, ears, nose, mouth, and skin to basic stimuli such as sights, sounds, smells, taste, and feelings. When visitors consume products, such as local food and services, associatively they compare the actual situation with their buying expectation. Consequently, the perceived service quality may directly affect tourists' satisfaction. Based on tourists' attitudes and perception on what they have seen, consumed, and experienced, they develop their satisfaction or dissatisfaction about their holiday spending, which is crucial for the future economic and leisure activity of a tourism destination. The purpose of this paper is a twofold. First, to examine the relationship between, food, destination attribute importance & performance, travel motivation and satisfaction, as potential influences to tourism

development. Second, an attempt to compare some of the major measurements of satisfaction research models and frameworks (instruments) that have been developed to identify and measure tourists' satisfaction, related to a destination and its food.

KEYWORDS: Food Tourism, Perception, Motivation, Customer Satisfaction, Tourism Development

### **Electoral politics and spatial variation of well-being in Turkey**

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G06-O4 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 2:00 PM - 4:00 PM

Subjective well-being has been extensively discussed at country level. While, some of these studies use micro level data in order to understand within country differences, others use aggregate data for exploring the cross country variation. These studies find out that subjective well-being is prone to significant amount of variability at individual and country level. That said, regional dimension of subjective well-being has not central to these studies. More interestingly, literature explaining the variation of subjective well-being points out the importance of factors such as unemployment, education, standard of living, poverty, health outcomes and income disparities. Even though these factors are crucial, a possible neglected dimension is the existence of political factors. For instance, one can expect that individuals' political decisions and outcome of the elections at local level can shape the geographical distribution of well-being. We discuss that, individuals residing in regions that are close to government's ideological stance can realize better subjective well-being. Therefore, an institutional network can exist among the individuals and central government which in turn shapes the level of regional well-being. Evolving around discussions on spatial and political dimension of well-being, this study aims to explore how political factors influence spatial variation of well-being among the NUTS III level Turkish regions. Using province level data and controlling for a host of determinants that are likely to influence regional well-being, findings pin-point that ideological fractionalization and distance to ideological stance of the government both matters for understanding the spatial variation of regional well-being in Turkey. Moreover, our findings highlight that spatial dimension matters as well. First, spatial variation of regional well-being is not random. Rather there is significant spatial auto-correlation for well-being at local level. That is, level of well-being in a region is not independent from its spatial proximity. Finally, we find out that spatial heterogeneity is also crucial. These results from spatial analysis point out that impact of political factors on regional well-being has a non-random geographical pattern, albeit this link is spatially heterogeneous. This reminds that one size does not fit all in terms of local impact of political factors.

### **Mapping Agricultural R&D and Innovation Systems in Turkey: Opportunities and Strengths**

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G23-O3 Rural Issues  
MILC\_Room 410, August 30, 2019, 11:00 AM - 1:00 PM

Agriculture is crucial in terms of supplying safe food, contributing to the national income and ensuring the ecological balance. Agricultural innovation and agricultural R & D have gained importance in increasing productivity and efficiency in agriculture due to unproductivity and inadequate agricultural land. Agricultural innovation is expressed as a dynamic system that contributes to the development, dissemination, and exploitation of new technologies related to agriculture, which directly or indirectly

affects the technological process, and which includes a wide range of stakeholders. Agricultural research and development aims to produce new information and transmit this information to its users. As agriculture is the sign for independency of a country, agricultural innovation system and R&D process have been started by public authorities but today, the actors are diverse. The change of actors actually brings up the question of whether they are also benefitting from the agricultural potentials and assets or agricultural innovation and R&D is an independent process. In order to answer this question, we focused on Turkey's agricultural R&D and Innovation systems. First, we identified the characteristics of the actors of these systems and then, we also visualized their spatial distribution. Turkey, has a significant agricultural potential with its fertile lands, water resources, climate and ecological values. The method of the study is based on the literature review and visualization. In this study, first agricultural R & D and agricultural innovation are explained, then Turkey's agricultural R & D and innovation system has been described and actors within the process were examined in four different time-periods. In this context, unit location choices of actors of the process which are public institutions, private sector and universities, starting dates of R&D and innovation activities, the size of agricultural areas and amount of agricultural production of the regions have been used as a dataset. ArcMap 10.3 program was used to map data compiled in SPSS. The lack of such a study in Turkey and how the country assesses the agricultural potential of the country are the original aspect of the study. The expected results of the study are that the actors involved in the non-public actors during the process and the spatial distribution of the actors take place in line with the country's agricultural potentials.

### **Regional Science: exhortations for thoughts**

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S01-S2 Regional Science Footprints of Walter Isard  
IUT\_Room Amphi 10, August 29, 2019, 4:30 PM - 6:00 PM

It is not surprising about what and how concerning space occupied spiritual minds for decades, nor the fact that the questions concerning space are often philosophical questions with economic and geographic endings. The answer for decoding of space inconsistencies was given by the Walter Isard, who saw total space as not undifferentiated or homogeneous, pointing out that neither are patterns of activity spatially chaotic. By directing efforts to construct macro-geographic measures of spatial structure, through spatial statistics, he initiated regional science in order to identify and analyze the problems of regions and suggest solutions.

Reflecting on its formal origins, evolution, approach and focus, regional science focused on the concept of region and regional structure. However, the organization and configuration of data from exploring social and economic phenomena based on the development of new theories and models in order to clarify spatial components are not sufficient to ensure the continuity of the idem numero of regional science. The extremely abstract assumptions, the mathematical complexity and the vague perceptions of space and behavior have created the first doubts about the ability of regional science to offer particular truths than universal ones.

Irrespective of intense vitriolic attacks, the tangible example of the EU suggests that, in addition to its strong emphasis on modeling and mathematical correlation, regional science strengthens its essence as being identical to reality, following social and political commitment, exploration of causality and defense of efficiency.

This paper is an intellectual debate over the foundations, directions and priorities of regional science. It discusses the formal structure of regional science including the type of analytic propositions and conceptual primitives, which characterize its scientific structure. We turn our attention to the research areas that have been successfully explored, outlining the essential content and boundaries of the field; thereby, we

illustrate its relationship with the other neighboring disciplines in order to find out how the unique perception of the science transform it as an imperative for Spatial planning. We will highlight how regional science may merge to EU spirit and will discern the europeanisation of regional science through regional policy. In conclusion, we will try to conclude if the science of regions is feasible and probable or utopian as a science of history.

See extended abstract online.

### **Optimal FDI Policy in the Economy with Infrastructure Goods**

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S42-S2 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

### **Asylum Flows and European Integration: The socioeconomic challenge**

Dr. Dimitrios Karkanis<sup>1</sup>, Dr. Evgenia Anastasiou<sup>1</sup>, Mrs. Konstantina Ragazou<sup>1</sup>, Prof. Marie Noëlle Duquenne<sup>1</sup>

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G17-O2 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 4:30 PM - 6:00 PM

The cohesion of the European Union has undeniably been challenged by the recent global financial crisis, highlighting the slowing down of its integration model as well as the various dissensions between the member countries. At the same time, the EU is facing an additional challenge concerning the massive influx of migrants and more particularly refugees mainly due to the conflicts in the Middle East and Africa. This relatively recent situation inevitably raises the question of their reception and integration in destination countries. The proper understanding of the present diversification of refugee flows during the two last decades – a kind of human flow that significantly differs from economic migration flows both in terms of intensity and migratory route - could potentially contribute to develop more appropriate policies into the spatially changing European Union.

In this context, the objective of the present study is, through the implementation of an augmented gravity model, to identify the spatial, sociopolitical and institutional factors lying behind the asylum flows inside the EU27 area during the 2000-2017 period. The data relative to the numbers of refugees and asylum seekers by country of origin and destination are provided by the UNHCR. In comparison with other official sources as Eurostat and Frontex, the UNHCR database is obviously the most detailed one, covering also a longer period of time. This is fundamental in order to detect the main changes during the period 2000-2017 as regards not only the countries of origin and destination but also the migratory routes.

The empirical findings reveal the discouraging role of the economic crisis towards the asylum flows inside the EU. However, the improving interconnectivity between the European countries, through the gradual integration process, seems to positively contribute towards asylum assignment, demonstrating that the migration process is reshaped by the contemporary spatialities. Once again, space is not neutral: landlocked countries act as nodes to attract asylum flows, while island countries often serve as host poles for asylum seekers due to a) their relative geographic proximity to the conflict zones of the Middle East or b) their economic development levels. Finally, the demographic factor remains crucial: the population of registered refugees among the EU countries acts as an “attraction mass”, in terms of natural sciences, of new asylum

applications, showing that human flows moving away from conflict zones are generally directed to countries where there exists a greater chance of asylum application approvals.

### **Municipalities amalgamation and the housing prices**

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G09-O3 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 4:30 PM - 6:00 PM

This paper examines the change of local housing prices following municipal amalgamations. Interregional migrations are mostly triggered by differentials in household utilities and local economic conditions, amenities and the like. Thus, it is reasonable to believe that if an amalgamation of municipalities that leads to a better service or lower local taxes in a community would improve the economic and even social welfare of present inhabitants and possibly attract new ones - as suggested by Tiebout (1956). It would reflect in the housing prices as suggested in the theory regarding the bid-rent curve, that are based on theory of von-Thunen (1826). In this paper, I examine the municipalities amalgamations in Iceland and whether it influences local house prices, in order to confirm their success. Due to consumer preference for access over amenity value, there is a spatial disparity of housing prices and it reflects the value of locations. The bid-rent curve is a framework frequently used to capture this spatial structure of housing prices and local amenities and other hard detachable values (Case & Mayer, 1996; Kiel & Zabel, 1996). The economic impact of municipalities amalgamation has not been investigated, as in this paper. I will examine whether this relationship exists. A macro panel data from Iceland will be used. It represents several essential variables of the house market for 79 municipalities in Iceland during the period from 1981 through 2006.

### **Quality of life and staying in farming and non-farming rural communities in Iceland**

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G17-O3 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 9:00 AM - 10:30 AM

Number of children have been reduced fast (Vífill Karlsson, 2015) and young farmers been likely to abandon farming than middle aged farmers (Vífill Karlsson, 2018). Employment share of agriculture in Iceland has moved from 86% of the total employment in 1870 to 3% in 2017. Moreover, a recent development in Icelandic farmers communities suggest that the less than 50% of the inhabitants work in the agriculture and in 2016 and 2017 they were close to 1/3. So, the number of inhabitants in the farmers communities that work in the agriculture have been decreasing relatively to the inhabitants working in other industries. Therefore, the study will compare the preference regarding the factors of the quality of life between the inhabitants of the farmers community that work in the agriculture and those who work in other industries. The analysis will be based on a new survey where more than 6.000 respondents from many of Icelandic rural regions of Iceland answered, where 1.200 lives in farmers communities and the rest in small urban communities of Iceland. 40 factors regarding quality of life were investigated.



## **Territorial land use governance for conservation of aquatic biodiversity: emerging collective action in favor of an integrated land governance.**

**Ms Nathalie Bertrand<sup>1</sup>, Ms Grace Kassis<sup>1</sup>**

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S23-S1 Territorial and place-based governance, (new) processes for local coordination  
IUT\_Room 303, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online .

## **Measuring efficiency of Nepal's dairy producing firms and its inter-regional gap**

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G08-O4 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 9:00 AM - 10:30 AM

The dairy sector in Nepal has a strong backward linkage in the rural household sector which improves the utilization of local resources and reduces the poverty. Given the vital economic role, the government of Nepal has implemented several dairy development policies for decades. In 1969, it established the public dairy enterprise to promote the industrial development in Nepal's dairy sector and the dairy production spread across the country. At present, many non-governmental firms operate dairy productions. We use Data Envelopment Analysis (DEA) to measure the relative efficiencies of Nepal's dairy firms in the operational performance by location, ownership, and size. We utilize the output-oriented DEA models that employs multiple variables of inputs (physical assets, labour costs, and intermediate input values,) and outputs (total sales and revenues) from National Census of Manufacturing Establishments 2011-2012. Our preliminary study found that majority of the firms performs far below the efficient managerial performance and operation scale. Classifying all firms by Urban-Rural location, the firms in Kathmandu Valley (Urban) operate show the far higher operation efficiency than non- Kathmandu Valley (Rural). The firms located along the border provinces with India also shows the relatively higher operation efficiency than average. The non-public firms operate more efficiently in managerial performance than the public firms, on average. All public (non-public) firms operate more efficiently by decreasing (increasing) the operation size. Moreover, our inequality decomposition analysis showed that the interfirm inequality in overall technical efficiency is influenced more by the managerial factors than the scale factors. The promotion of the technical and managerial assistance can be a major policy directions to reduce the interfirm inefficiency gap in operation.

## **The impact of robots on employment– evidence from seven European countries during 1993-2015**

**Dr. Merja Kauhanen<sup>1</sup>**

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G05-O2 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 2:00 PM - 4:00 PM

Rapid technological change including robotisation, digitalization and artificial intelligence is transforming labour markets and the structure of employment. As regards labour markets this development has also raised concern about its impact on employment and technological unemployment. The estimates given by

different experts and evaluations differ as to how many jobs are threatened by this development in the future (see Brynjolfson and McAfee 2014; Frey and Osborne 2013 & 2016; Autor 2015). There is relatively much earlier research on the impact of ICT on employment and its structure, but still much less research on the impact of robots on employment.

The aim of this paper is to provide new empirical evidence on the impact of an increased robot usage on employment in seven European countries between 1993-2015 and thus contribute to the developing literature on the labour market impacts of robotisation.

The analysis utilises robot data on industrial robots (and later on data on service robots) combined with employment and other relevant data from EUKLEMS. The seven European countries that are (so far) used in the analysis are Germany, France, UK, Italy, Spain, Finland and Sweden. These are countries for which there is data available for all the years between 1993-2015. We analyse the employment effects of robotisation for the whole period but also separately for the subperiods 1993-2007 and 2008-2015 of which the latter also includes the financial crisis years of 2008-2009 and the recovery period after that. We utilise OLS and IV regressions in the empirical analyses.

The preliminary results suggest that there is a negative impact of industrial robots on hours during the period 1993-2015 for the seven countries used in the estimation when controlling for the country fixed effects and initial wages and capital-labour ratio. The impact is negative and statistically significant but very small. The corresponding OLS estimates by the skill level suggest that the impact of increased robotisation has a statistically significant negative impact only for the low-skilled workers' working hours.

### **New model of smart entrepreneurship for Russian Resource Region**

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G07-O2 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 9:00 AM - 10:30 AM

Extraction and processing of natural resources is a sphere where the violation of the natural environment is most active. The greatest burden is experienced by the so-called resource territories and regions in which large extraterritorial mining companies operate. They negatively affect the natural environment, form a destructive and unstable trajectory of development. This negative trend is particularly bright in emerging markets, including Russia. The way out of this state is associated with the transition of resource regions to the circular economy. The key actor of this model should be special Entrepreneur-Gatherer, based on supply chains of a new type. An important element of such circular economy is an active, mutually beneficial partnership between science, business and the state. Today there are no such ready-made entrepreneurs in the Russian resource regions, but there are little sprouts of the circular economy, in the field of industrial waste processing.

The purpose of this report is to show the problems and prospects for introducing the principles and elements of the circular economy in Russia. The research is based on the concepts of Triple Helix. Siberian acted as an object of analysis.

The report shows the features of replication of resource regions, describes a special Entrepreneur-Gatherer model, shows its functions and possible forms. The example of four cases involving large, medium and small companies, as well as research organizations and representatives of regional and local authorities describes the achievements and barriers to its implementation in practice. In each of the cases a description of the

project is given, strengths and weaknesses are shown. Particular attention is paid to the stages of the formation of new branched supply chains, the analysis of their influence on the formation of industries processing of waste from enterprises of various industries, and the creation of a network of local small industries. The real and potential abilities of large companies, small companies, special engineering firms and special regional and local authorities to act as project coordinators are assessed. A reasonable conclusion is drawn that small engineering business companies are the most successful in coping with the tasks of implementing such projects.

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## **An assessment of the relationships between R&D, eco-innovation and productivity: Evidence from French firms**

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S61-S1 Energy Transition and Eco Innovation  
MILC\_Room 409, August 28, 2019, 4:30 PM - 6:00 PM

Since the 1990s, environmental issues have become a major concern for policy makers. To tackle climate change, the development of new technologies compatible with sustainability issues must play a key role. A specific feature of environmental innovation is that, in addition to generating knowledge spillover, it also generates environmental spillover. Rennings (2000) called this specificity of eco-innovation “the double externality problem” and pointed out that this problem diminishes the incentives of firms to innovate. The purpose of this article is to explore both determinants and productivity effects of environmental innovation using an extended CDM model (Crépon, Duguet and Mairesse, 1998). First, we distinguish two types of R&D: environmental and non-environmental. Second, we introduce environmental regulation variables at the firm level as drivers of environmental innovation. Combining both of patents data extracted from REGPAT and HAN OECD databases with financial firm data collected from DIANE database and the firm research and development (R&D) survey, the empirical analysis is carried out for an unbalanced panel of French firms over the period 2003–2015. Preliminary result show that private economic returns in terms of productivity are lower for environmental innovation than for non-environmental innovation. This validates the hypothesis according to which market incentives alone are not sufficient to allow the environmental innovation of firms to increase considerably. More efforts in terms of green promotion and environmental regulation are important for the flourishing of such innovations.

## **(When) Does migration of displaced workers pay off?**

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G15–YS1 Population, Migration and Mobility Behaviour  
IUT\_Room 108, August 29, 2019, 11:00 AM - 1:00 PM

One of the empirical regularities in the literature is that displaced workers experience permanent drops in earnings. Loss of specific human capital is often identified as a mechanism to why this is the case. The purpose of this paper is to identify whether the variation in the career paths of displaced workers through changes in location, industry, or occupation, affects their future earnings. Using a multinomial endogenous

treatment model to control for the selection bias in migration and industry/occupation change, we compare displaced stayers with displaced movers. Preliminary results show that the only cases when movers are better off than stayers is when they get a job in a related industry and occupation or if their new employment is in a related industry but not occupation, suggesting that migration could be a reaction to mismatches in the labor market.

## **Policy discussions over the roles of local actors for developing creative economy in small Turkish cities**

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G06-O7 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 11:00 AM - 1:00 PM

Creativity and economic development have become key features of urban politics and creative industries and creativity-based business models have a great potential in building the new economic landscape. This assumption is promoting a re-view of local development strategies in cities (Rivas, 2011). Policy-making in relation to the creative economy is not confined to a single ministry or government department; rather, but involves a number of different policy fields. Within a forward-looking perspective, the ways to manage cities a multiplicity of involvement across the public sector, the corporate sector, the non-profit sector and civil society for attracting jobs and designing economic activities. This raises questions about the appropriate capacities lies in the 'local'. A better understanding of the local dynamics needs an improved understanding of local policy-making culture and organizations within cities for sustainable economic growth and a forward-looking vision on urban development reinforcing hubs of creativity and centers of job creation. Understanding the local dynamics is not only a gap in social science knowledge and academic word, but also a political limitation and implementation. The latest trend of cities as an entrepreneurs/hubs of creativity and innovation opens a window of opportunity for many well-positioned small and medium-sized cities (Rivas, 2011; URBACT, 2010). Considering real ground dynamics should be involved in the complete process from policy to implementation for the development of creativity in cities, emphasis will be more desirable in urban development. From this perspective, the main objective of the study is to gain a better understanding of the importance of local policies over the roles of local actors for developing creativity by discussing on small cities, named Ayvalik, Bodrum, Urla with differentiated local dynamics from Turkey. This paper is aiming to make contribution to understand importance of local capacities and awareness and local-based policies in particular small cities both in theoretical and practice. These cases, as an opportunity to enlarge the research across Turkey, to improve knowledge and awareness to all relevant actors is important for giving results, which are expected to lead for future policies of the creative cities, practitioners and policy makers in particular local governments. By aiming to contribute policy debates and practices, this paper will make contribution to social capital and local capacities in literature both in theoretical and practice.

## **Development of Russian IT sector: state, problems and opportunities**

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Information technologies are extremely vital for modern economy; they are in the core of the sixth wave of innovations. None of the other high tech sectors has such an impact on all the spheres of economic activity. In this paper, we discuss the development of Russian IT sector.

One of the characteristics of Russian economy is high dependence on governmental economic discussions and the directions of governmental economic policy. The creation of digital economy is widely argued in Russia lately. Even though the meaning of the term “digital economy” concerning Russian case is disputed a lot, and even though state programs and documents leave much to be desired and a lot of work still needs to be done, including these questions in modern economic agenda means new opportunities for Russian IT companies. In this paper, we try to estimate whether IT companies can successfully accept this challenge today and what should be their role in digital economy.

Although information technologies are one of the leading sector in high tech business in the world economy, only 12% of Russian high tech companies work in IT sector. Nevertheless, there are a number of success stories of Russian IT companies, which are leaders in their niches and recognized worldwide. Using company data (obtained from SPARK database) we analyze regional differences in IT sector development. In terms of representation of various territories and inclusiveness of various regions in the sector development, it is shown that gap between regions is extremely wide, with Moscow being absolute leader. We also assess factors influencing the growth of IT companies in Russia; we include in the analysis both companies’ characteristics and indicators of the regional environment. Another question is to reveal barriers for the development of IT companies. Data on national level show that employment in IT sector is decreasing which indicates serious problems. In this regard turning to the company level is necessary to understand the nature of these problems.

Our dataset is micro level data and covers 2013-2016 time period, which allows us to use econometric analysis (including correlation analysis, regression analysis and panel data analysis) to confirm and substantiate our conclusions.

### **Efficiency of PES on preservation of farmland in the age of Climate Change – Case study of Japan**

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G23-O2 Rural Issues  
MILC\_Room 410, August 29, 2019, 4:30 PM - 6:00 PM

Payment for Ecosystem Services (PES) is the payment for externality of ecosystems including farmland and preservation activity that has characteristics of public goods. One of the most important functions of farmland is prevention of flooding by the land holding appropriate water supply. However, farmland abandonment is accelerating and damage of flooding is getting serious especially in most of rural areas in Japan. These areas also are experiencing rapid aging and depopulation along with more visible effect from recent climate change. The experience with PES in Japan is not mature enough compare to US and EU countries, however the Japanese government provides various types of subsidies such as direct payment for the prevention of farmland abandonment and for the activities of preservation of community land in rural

area. Consideration of the efficiency of the payment is crucial to sustain preservative activities and to have long-term effects. Theoretical framework of this study is based on PES and its efficiency on preventing farmland abandonment. With the limited study on the efficiency of such payment in Japan, we aim to clarify the efficiency of related subsidy and also estimate the damage cost of flooding based on RCP8.5 scenario to predict the necessity of farmland preservation in the future. In addition, we investigate the factors of efficient subsidy use through analysis so that we could indicate effective use of PES to other countries where they may face the similar problems in near future due to depopulation in rural areas. We collected the data on flooding damage cost at the municipality level to determine the efficiency of payment for avoiding farmland abandonment. Panel data analysis on rate of farmland abandonment, rate of farmland rent, rate of farmland borrow and rate of contract farming as an indicator of result of farmland conservation were conducted to estimate their relation with flooding damage cost. Moreover, the effects of the precipitation, characteristics of local communities and the land ownership on the flooding damage cost were analyzed. The findings from this study provide policy implications to be considered for the conservation of farmland by means of PES in the rural areas.

### **Spatial Economic Linkages of Economic Growth with Air Pollution: Developing a PM2.5-Multinational CGE Model of China, Japan and Korea**

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G14-O3 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 4:30 PM - 6:00 PM

This paper identifies influences of national economic growth on emissions, trades and social costs of three nations of China, Japan and South Korea in Northeast Asian nations, developing a PM2.5-Multinational Computable General Equilibrium (PMCGE) model. The production of air pollutants are analyzed in terms of production-based emission by producers in supply process and consumption-based emission by consumers in demand process. The PMCGE model integrates a module of emission of PM2.5 and premature mortality with the economic equilibrium approach in a consolidated structure. The economy-wide effects on the emission could be quantified into changes in premature mortality and Value of a Statistical Life. The paper shows that Chinese economic growth by 1% could have the largest impacts of the GDP on the production and consumption based emissions by 0.996% and 1.002% respectively. The lowest one would be Japanese economy to achieve 0.771% of elasticity of the GDP with respect to production-based emission and 0.763% of that with respect to consumption-based emission. In addition, the industrial structure of Japan would be relatively effective to mitigate air pollution in three nations under the economic growth path: 1% of the GDP growth rate would result in negative change in the premature mortality and reduction in the emissions embodied in trade by 0.058% in spite of increasing the total trading volumes by 0.138%. This approach can provide public agents and stockholders with strategic insights into the efficiency, effectiveness and priority of the air pollution policies, contributing to establishing a cooperative framework with numerical targets of emission reductions and to developing a comprehensive policy package to address the various concerns and environmental costs shared by three nations.

### **Spatial Characteristics of the Impact Area on the Accessibility of Public Transportation of Gwangju Metropolitan City in Korea**

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Most cities are pursuing a variety of policies to better support urban life. In a typical urban city, traffic remains to be one of the biggest contributing factors stifling modern living, as congestion poses a huge problem for accessibility. Public transportation plays a big role in suppressing traffic congestion and more importantly, air pollution. Alternative modes of transportation such as railways also play a role in creating more efficient flows of movement within urban cities.

In six of the largest cities in Korea, urban railways are already operating. In order to make better connections between these major cities, city buses and city railway companies are adopting a policy to reduce the cost of transit by introducing a transfer system. Gwangju Metropolitan City is a local city with 1.48million residents and has operated the Urban Railway Line 1 since 2008. In addition, a second line will be constructed and will be operational starting 2023. This study will investigate how accessibility to urban railways can be improved to better manage traffic congestion and create better flows of transportation between cities overall.

The time range of this study is from 2012 to 2018, which is the period of securing the number of passengers by city railway stations. The spatial range is 20 urban railway stations in Gwangju Metropolitan City. The content area is a spatial characteristic that affects the traffic occurrence of the users approaching the urban railway stations. The purpose of this study is to analyze the spatial characteristics of the transit area and the changes in the number of subway stations. The purpose of this study is to investigate the spatial characteristics that affect the accessibility of urban railway stations through research and to draw implications for the decision of location of additional routes.

### **A Study on the Appropriateness of a Management Evaluation Indicator System for Urban Railway Operators**

Mr Seonggeun Kim<sup>1</sup>

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A purpose of a management evaluation of the operating organization of an urban railway is to achieve the organization 's goal and improve the performance. Urban railways are operated to facilitate communication of urban traffic. An urban railway is operated by an entity which has obtained a license for the urban railway operation business based on relevant laws. The Urban Railway Corporation, established by the local government, operates an urban railway to promote local autonomy and improve residents' welfare.

Feasibility assessments are introduced and carried out at the planning stage of an urban railway project. At the operational stage, performance is evaluated through management evaluation. However, the management evaluation of the Urban Railway Corporation lacks the adequacy of the indicator system. Specifically, improvement of the indicator system in the public aspect is required.

The purpose of this study is to understand the management evaluation index of the Urban Railway Corporation and evaluate the appropriateness of it. The main contents of the study are introduction, theoretical review, and the adequacy analysis of evaluation index. The application of an improved management evaluation index system will have the effect of improving the passengers' convenience and increasing the utilization rate.

### **Research on the factors, Priority Determination of urban regeneration in local small and medium cities, drawn by the place memory**

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G04-O5 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 4:30 PM - 6:00 PM

It is true that many local small and medium cities in Korea have lost their vitality due to the progress of aging, economic decline in urban areas, the lack of new growth engines, and the declining population. Also, the memories of the locals living there and the place engraved on it are in danger of disappearing quickly for any reason. Despite such situation, the profitability is not likely to be secured, considering the urban regeneration projects in Korea that have been carried out by the privately-led economy. Under the recognition of such problems, individual self-governing have made efforts to preserve the city by seeking meaning and value of urban regeneration under the name of reviving our neighborhood or village creation projects, etc. in order to revitalize local small and medium cities. Nevertheless, such projects still isolate the 'local residents,' leading us to wonder 'for what and for whom' the projects exist.

Thus, urban regeneration projects in small and medium cities should focus not on the improvement in the physical environment but on the areas' 'local residents' and 'their projects.' However, Korea's urban regeneration projects has often been result-oriented so it is also likely to happen when producing projects on areas with local small and medium cities. Solving these problems first requires us to reflect on the direction of detailed projects plan more seriously.

To select the contents to be utilized in urban regeneration, it is judged that gathering opinions of local residents is more important than any other thing. To solve this problem, the meaning and value of place memory obtained through the survey of local residents were considered in the humanities. In addition, it sought to find elements that could remind the place memory of Sun-Cheon City, and to explore the possibility of a plan to utilize Sun-Cheon City's sustainable urban regeneration and place memory as a detailed projects plan.

The purpose of this study is to find and study the active elements of the residents' locality in cultural urban regeneration projects, to examine the traditional parts that the space site should inherit and the areas that should evolve in the future, and to derive the relationship between elements that should be a research background in the regeneration into new urban spaces. Accordingly, this study intends to present positive outcome for the purpose of the revitalization of local small and medium cities.

### **Studying on Economic Recovery after Natural Disasters : Applying a Regional Input-Output Model**

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G24-O5 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 2:00 PM - 4:00 PM

The breakdown of one sector triggered by natural disaster will produce a negative influence on the total economic system through inter-industry relationships (Miller and Blair, 2009). This highlights the importance of evaluating inter-industry effects under natural disaster events, however, unlike the other climate change induced effects, the inter-industry effects were rarely considered in climate change framework. In particular, extreme flood event could jeopardizes regional infrastructure facilities, this causes indirect economic cost within the flood occurrence region and neighboring regions which has strong inter-industry relationship. Along with inter-industry aspects, investigating climate change at the regional level is required given that climate change shows regional heterogeneity effects and economic resilience is different across regions. If we assume the necessity of climate change adaptation reaches an agreement,



uncertainty and inter-industry effects of climate change need to be considered at the regional level in establishing adaptation measures for natural disaster.

Being consistent with this argument, the purpose of this paper is to evaluate the economic recovery of natural disaster at regional level in Korea. Predicting the recovery pathway and time of an economy after disaster (e.g., flood) can be viewed as valuable information in establishing disaster related adaptation policies.

This paper utilizes a regional input-output analysis model to quantify the indirect economic impact of natural disaster under imbalances of post-catastrophe economies (Steenge et al., 2007; Hallegatte, 2008; 2014, Koks et al., 2015; Shibusawa et al., 2018). In this paper, the regional input-output table of the year 2013 is used (the bank of Korea). This regional input-output table includes 16 regions of Korea, and this table divided industries into 161 sub industries. In particular, economic recovery time and path were evaluated associated with bottleneck effect, this sheds some light on the dependence of inter-industry effects across regions. Along with above statement, the dynamic aspects of economic recovery appears to be empirical contribution of this paper, since estimated inter or intra-trade effects are different across bottleneck simulation scenario and recovery time.

In the estimation results, we found the difference of economic recovery across region, and the difference dramatically increase when bottleneck effects pass certain threshold level. Regional estimates indicate that the coastal regions show severe intra-trade damage due to high probability of natural disasters. However, the inter-trade damage estimates in inland area are higher than coastal area reflecting inland area is a center of logistic distribution.

## **A Study on the Connection Network Characteristics and Activation Plan of Social Economic Organization Ecosystem : Focusing on Gwangju City**

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G06-O1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 11:00 AM - 1:00 PM

The social economic organization can define the concept of a voluntary group or organization that is organized as a means to pursue public interest and creating profit for the enterprises at the same time and to realize social purpose through solving various problems in the community.

The Korean social and economic organization has been rapidly quantitative growing since the enactment of the "Social Enterprise Promotion Act" in 2007. Typical forms include social enterprises, cooperatives, village enterprises, and self-help companies. As of the end of December 2018, 19,536 social economic organizations are operating nationwide.

The government established the Korea Social Enterprise Agency in 2011 as an intermediate support organization to support social economic organizations and designated various forms of intermediate support organizations for each region.

Although network formation between social economic organization and intermediary support organization is very important factor for growth of social economic organization, but, network analysis through industrial classification is hard to find.

The purpose of this study is to analyze the connection network activities with the intermediate support organization and to search the direction of the social economic ecosystem in Gwangju Metropolitan City by differentiating the industrial classification into the social service part and the other part. Based on theories and previous studies on network activities, research hypotheses and models are set up through questionnaires.

First, the analysis direction is to dynamically analyze the interconnection network activity of ecosystem of social economy organization. Second, it seeks to grasp the characteristics of exchanges such as voluntary

cooperation with social economic organization and intermediary support organization that are differentiated by industrial classification.

Through this study, we analyze the connection network of social economic organization ecosystem in Gwangju Metropolitan City, and propose a way for intermediate support organization to contribute to the activation of social economic organization.

### **Determinant Factors of On-farm Processing in Japanese Farm Business: Focusing on Regional Differences in Natural and Socioeconomic Conditions and Entrepreneurship**

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G23-O2 Rural Issues

MILC\_Room 410, August 29, 2019, 4:30 PM - 6:00 PM

Among the diversification of farm business, on-farm processing (OFP) is expected not only to improve the profitability of farm business through the production of high value-added products but also to create employment in the rural area and to revitalize the rural economy. However, in recent years in Japan, the number of farm business engaged in OFP is decreasing. Meanwhile, it is believed that besides of entrepreneurship in the rural sector there are many factors affecting the diversification of farm business such as local natural conditions, socioeconomic conditions, etc., although it has generally been caught as one of the consequences caused by entrepreneurship in previous studies. Therefore, it can be considered that the ratio of farm business engaged in on-farm processing (ROFP) depends not only on the size, products, entrepreneurship but also on regional factors. In other words, the level of ROFP in the region can be generally explained by the natural and socioeconomic conditions including the agricultural structure of the region, and the residues of the region's ROFP can be regarded as a level of entrepreneurship. The purpose of this study is to clarify the determinant factors of on-farm processing in Japanese farm business and estimate the level of entrepreneurship in the region. The main data used for analysis is municipal panel data on Japanese agricultural censuses and related socioeconomic statistics in 2010 and 2015. Based on the results of the analysis, we derive policy implications that contribute to promoting farm business and the rural economy.

### **Impacts of Multi-functionality of Urban Agriculture on the Creative Classes in Japan: Focusing on Niigata City**

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G04-O10 Regional and Urban Development

IUT\_Room 207, August 29, 2019, 4:30 PM - 6:00 PM

Although, most of people agree that a sustainable city should meet the needs of the present without sacrificing the ability of future generations to meet their own needs, there remains no completely agreed upon definition for what a sustainable city should be or completely agreed upon paradigm for what components should be included. Furthermore, it is thought to be important to form a community that people can enjoy the various functions produced by urban agriculture and people called creative classes (CCs) especially those who are thinking creatively (TC) with high productivity are attracted in such high amenity areas that can bring a further development for the city.

The purpose of this paper is to build a model of sustainable development of city focusing on the impacts of multi-functionality of urban agriculture (MFUA) on the creative classes (CCs) through examining Niigata City

in Japan. Multi-method approach will be introduced in the research for verifying our three hypotheses. These are “The CCs prefer multi-functionality of agriculture (MFA) than non-CCs as well as the TC more than non-TC”(H1), “The CCs have a high level of social capital”(H2) and “The CCs prefer diversified lifestyles” (H3). Specifically, econometrics analysis by using published statistical data, structural equation modeling (SEM) by using authors’ original questionnaire survey data targeting at the residents, and case studies from the good practices improving the amenity of urban agriculture in Niigata City will be undertaken for hypothesis verification.

Based on the results of analysis, the conditions for urban creativity and sustainable development through improving the amenity of urban agriculture will be clarified and the challenges for social implementation will be derived as well.

### **Organisational strategies for Data-driven Innovation: Mapping the university knowledge production and hybrid knowledge spaces in the City Region Deal**

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S17-S2 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 2:00 PM - 4:00 PM

Our study aims to broaden theoretical horizons by bringing together two broad streams of literature: the governance of city regions, and organisational studies of higher education institutions (HEIs). In particular, we introduce the concept of “hybrid spaces” where different institutional logics coexist and interact. Empirically, we present the case of a City Region Deal in Scotland, more specifically, the Edinburgh and South East Scotland City Region Deal (ESES-CRD). Our focus is on the Data Driven Innovation (DDI) Programme, which is part of the City Region Deal aiming to “help establish the region as the data capital of Europe”, by drawing in inward investment, fuelling entrepreneurship and delivering inclusive economic growth. It attempts to realise its goals by helping organisations and individuals to connect to research and development in the generation, storage, analysis and use of various forms of data. In addition, the programme aims to improve digital skills through working with schools, further and higher education, employers, and training providers, and to stimulate entrepreneurship.

In this paper, we ask the following key questions:

- How can we understand the influence of the City Deal’s focus on data-driven innovation on the profile of the University of Edinburgh?
- How does the university position itself in the evolving local institutional constellations of a City Region Deal?
- How is inter-sectoral and inter-organisational collaboration encouraged and orchestrated, and inhibited in the context of the University of Edinburgh and the City Region Deal?

### **Difference in Productivity between Water-Sewerage Integrated Systems and Separated Systems: Evidence from Japan**

Dr. Tomohiro Kitamura<sup>1</sup>

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Water and sewerage industries are operated by local public companies in Japan. There are companies that operate water only, sewerage only, and both water and sewerage. In Japan, it is said that water-operate companies and sewerage-operate companies will face more difficult financial situations stemming from reduction in population and increase in cost of aged facilities' renewal. To improve their operational situation, government has promoted vertical integration of water and sewerage systems. The vertical integration means that one local public company operates both water and sewerage systems. In 2016, more than 70% of the companies operate both water and sewerage. If we reveal that operating water and sewerage systems jointly improves the companies' performance, we can give a policy implication of promoting integration of water and sewerage systems.

This study empirically examines whether the productivity of water-sewerage integrated systems is higher than that of separated systems. We compute labor productivity and total factor productivity (TFP) of the companies by adopting the cross-sectional data of Japanese water-operate and sewerage-operate companies in 2016. Then we examine whether there is the difference in the productivity between water-sewerage integrated systems and separated systems.

The empirical results show that the productivity of water-sewerage integrated systems is not significantly higher than that of separated systems. This indicates that increasing the productivity of companies by integration of water and sewerage may be difficult. Hence, other ways such as consolidation of facilities should be promoted to improve performance of water and sewerage companies under the difficult financial situations.

### **Mediating distributive politics: political alignment and electoral business cycle effects on municipality financing in Greece.**

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S22-S1 The politics of local and regional development  
IUT\_Room 303, August 28, 2019, 11:00 AM - 1:00 PM

Electoral politics and clientelism are not new notions. Yet, the, often suspected, pork barrelling activity has been difficult to identify until recently. A relatively recent trend involves studies utilising publicly available data on resource allocation and electoral results and being able to econometrically derive evidence of clientelistic relationships between the national government and voters. However, distributive politics are often mediated by factors such as multi-level governance systems and the political business cycle. These mediators have only recently being explored in the literature.

This paper examines the role of political partisanship and the electoral cycle in the allocation of funding from the central to local government in Greece between 2003 and 2010. A panel dataset that combines data from the Greek local and national elections and municipalities' budgets for the period 2003-2010 is used to test whether the political alignment between local and national government as well as the stage of the political business cycle impact on municipality financing.

The findings suggest that aligned municipalities receive more grants in the run-up to national elections. This is evidence of pork barrelling, stronger vertical network dependency and the political business cycle considerations in the allocation of resources. The results call for greater fiscal decentralisation in order to reduce the dependency and eradicate the use of intergovernmental transfers for political gain.

## **Balance of Financial Flows between the Center and Regions in Russia: Alternative Estimations**

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G06-O1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 11:00 AM - 1:00 PM

The method of calculating the balance of financial flows between the Federal and regional budgets should be the basis of the system of Federal monitoring, analysis and forecasting of the situation in regions. The balance of financial flows by region is characterized by some indicators, e.g. the ratio of revenues collected in a region for Federal budget, on the one hand, and Federal budget expenditures, including grants, in the territory of this region, on the other hand. In accordance with Russia's budget legislation, the regions which receive unmatched grants are named as donors. Last five years, not more than 15 Russia's regions were among those who did not receive such grants. At the same time, according to the data obtained in the study, the number of regions by the percentage of return on the balance of financial flows, as well as according to the balance of financial flows, considering the direct expenses of the Federal budget, reached 20 or even more.

In addition to direct spending, the Federal budget provides regions with grants. In 2016, their share in the total amount of Federal expenditures by territories ranged from 6 per cent in Moscow to 57 per cent in the Republics of Altai and Dagestan. The percentage of return on the balance sheet of financial flows was 77 per cent on average and ranged from 3 per cent in Khanty-Mansiysk Autonomous Region to about 5,000 per cent in the Republic of Ingushetia.

The informal rules in the decision-making regarding the regulation of financial flows from the Federal budget to the regional ones indicates the need for further improvement of intergovernmental relations in Russia. In this regard, the described method of calculating the total balance of financial flows for each region can become the basis for making certain individual decisions in relation to a region when providing, for example, targeted subsidies. Such measures will become one of the tools for the introduction of new principles of a differentiated approach in the regulation of regional development.

## **Regional Resilience: the case of Russia**

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S40-S3 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 4:30 PM - 6:00 PM

In this research supported by the Russian Foundation for Basic Research (project No. 18-010-00771), we determined the nature and degree of resilience for different types of Russia's regions to the impact of geopolitical, economic, social, technological, and other internal and external factors in the face of global challenges. Based on the analysis of panel data for 75 regions from 2007 to 2016, there are significant differences in the dynamics of indicators. In general, the degree of exposure to the negative effects of crises is higher in non-resilient regions than in resilient ones.

To conduct the study, a database was compiled of 17 indicators reflecting the complex socio-economic development of Russia's regions. Part of the indicators was selected based on the concept of the Resilience Index (Resilience Capacity Index) developed by K. Foster (2007) and adapted to many studies of regional resilience (Pendall et al., 2008; Simmie, Martin, 2010; Szitasiova et al., 2018). In addition, such indicators as entrepreneurial activity and unemployment rate (Boschma, 2015), innovative activity of organizations (Clark et al., 2010) and others are analyzed.

In general, the results of a number of foreign studies also link the stability of the regions with their ability to adapt and withstand crises. For example, such conclusions were obtained using a similar methodology in studying the resilience of Slovakia's regions, which, despite a small number, are characterized by a rather high degree of socio-economic differentiation (Szitasiova et al., 2018).

In further studies of the sustainability and resilience of Russia's regions, a more global adaptation of the existing Western methodologies and the development of a new methodology that would fully take into account the much higher interregional socio-economic differentiation than in developed countries and use the cost ratios in various fields of activity.

### **Green Infrastructure and Ecological Framework in the Largest Cities in Russia**

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G14-O1 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 11:00 AM - 1:00 PM

General planning as a procedure designed to ensure the development of promising areas for the development of agglomerations, including in terms of a comfortable urban environment needs significant methodological updating. We studied green infrastructure of the 15 largest cities of Russia. General features of the ecological framework are analyzed on the base of statistical and remote sensing data, the main problems of its territorial planning are identified and possible mechanisms for their solution are proposed. The key indicators of the structure evaluation of the framework are proposed and calculated, the protection status of its elements is estimated, based on which the cities with unfavorable conditions for its preservation are identified.

In the largest cities, the share of a tree cover from the city square fluctuates from 16 per cent in Volgograd to 61 per cent in Perm. Less than 1 per cent of the area of a tree cover is protected in Omsk, Yekaterinburg and Krasnoyarsk. The mapping models of framework for each of the cities are presented and three typical configurations are identified. The obtained results are compared with various international and domestic regulatory indicators of greening, which leads to the conclusion about the individual features of the structure of the ecological framework of each city.

The current configuration of the ecological framework as a set of undeveloped and unsealed green areas providing ecosystem services is the most important factor that determines the prospects for further development of the country's largest urban agglomerations. The real boundaries of agglomerations and significant differences in the initial physical and geographical conditions have generated a variety of modern urban situations, expressed primarily in the dispersion, dimension and layout of the elements of green infrastructure in big cities, which allows us to distinguish different types of environmental frameworks with different problems of their further development.

### **Border regions, economic integration and growth - The case of Austria**

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The common belief of a general positive relationship between economic integration and welfare has been shattered recently. Even though there is clear empirical evidence of an overall welfare gain when borders fall, it seems to become more obvious that remote regions might benefit to a smaller extent. This might especially apply to border regions as they are mostly poorer, insufficiently connected and more sparsely populated than central regions. It is unclear whether they benefit at all from an open border. Also, there is no consensus about the symmetry, i. e. whether border regions in the poorer country benefit more when they move closer to their richer neighbours or vice versa.

In this paper, we investigate the case of European integration in the context of Austria as it provides an interesting laboratory: Austria experienced the fall of the iron curtain that surrounded almost half of the country, leading to more open borders to the east. The western borders virtually vanished when Austria joined the already existing EU in 1993. The eastern expansion in 2004 again focussed on the integration of its eastern neighbours.

We make use of population as well as night-time light data and deploy causal inference techniques in order to investigate the impact of border regime changes on economic parameters of remote regions in Austria and its neighbours. We suppose that the three mentioned historic events have shifted the distribution of economic activity inside Austria. The increased market potential for regions on both sides of the border should have resulted in collective welfare gains. Given classic convergence arguments, however, one would expect the joining regions to benefit to a larger extent.

### **Influence of metropolitan areas on housing market (case of Russia)**

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G04-O12 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 11:00 AM - 1:00 PM

Metropolitan areas are considered as poles of growth in the recent political discussions in Russia. However an influence of large cities on the neighboring territories is ambiguous and depends on how successfully the impulses and quality of growth are transmitted from the center to the periphery. The paper presents empirical estimates of the influence of the urban agglomerations on the value of residential real estate. The housing market is considered as an indicator of the population's incomes and perspectives of the territorial development. The tested hypothesis is that in cities belonging to metropolitan area, housing prices are higher than in settlements beyond its borders. In the regression, where the dependent variable is the average cost per square meter of housing, along with the fact of belonging to the metropolitan areas, we control for the distance to the center of the area, the distance to Moscow and the population density in the city. The estimates showed that in the cities of the metropolitan areas housing prices are significantly higher than in the cities outside the areas. This result is an indirect confirmation of the positive effects of the agglomeration process in the Russian urban system. Practical recommendation of the paper is to provide an institutional environment aimed at the effective governance of the development of urban agglomerations

and at the realization of their potential. It is important also to use resources of federalism and decentralization.

### **Restriction Policies to lower quality foreign workers: in case of co-existing legal immigration and two types of illegal immigration**

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S42-S2 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 2:00 PM - 4:00 PM

We consider two types of illegal migrants to a developed country based on the expected lifetime income: low-risk entrance with high-risk of detection during their stay (type A) and high-risk entrance with low-risk of detection (type B). Also following new immigration policy introduced by Japan's government in 2019, we consider two types of legal unskilled immigrants, limited staying period without their families (specific skills #1) and permitted permanent stay with their families (specific skills #2). We consider three possible cases co-existing those various types of migrants as the results of each individual's choice. If all of four types of immigrants exist, paradoxically, we found that policies encouraging introduction of type B illegal immigrants will be the most preferable restriction policies for the host country which intends to improve both foreign workers' quality and economic welfare of domestic residents.

### **Spatial interactions between business and residential urban location. Quantitative methods of verification in evolutionary framework**

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S33-S2 Modelling place attractiveness in the era of Big and Open data  
MILC\_Room 310, August 28, 2019, 2:00 PM - 4:00 PM

Immensely reach menu of theories and empirical evidence in regional and urban studies is still missing a link between business and residential location within city, with special insight into firms profitability and housing valuation. Existing theories of location of both business and housing, together with their inherent agglomeration and spatial externalities effects, have in fact the same drivers and deserve for being considered jointly. Common for both starting point is the decision process, where to live and where to locate the firm, as well as what are the factors which determine this location. Independently of the adopted research perspective and internal motivations of the decision-takers, one observes its final consequences as the densities of business and housing, as well as its economic performance – prices of real estate and profitability of business.

The intersection of both streams, the business and housing location and valuation, lies in the similar determinants and the consequences of both processes, where one can indicate clustering, density, agglomeration externalities, Central Business District location, rural vs. urban sites, accessibility, proximity to important neighbours, quality and usefulness of neighbourhood, absolute and relative locations, local and global perspective, spatial segregation etc. Both processes are also inter-connected. Overview of existing literature on location models for housing and business does not offer the explanation to patterns and interactions observed in nature. Assumptions and analytical framework in neoclassical New Economic Geography and Institutional Economic Geography are to fail: both rational utility/profit maximizing agents as well as "rules & communication" driven agents. An attractive theoretical framework



for this problem is co-evolutionary economic geography, which may serve as integrating umbrella cross over the agents and mechanisms involved.

This paper compares the theories of business and housing location and performance with special insight into spatial externalities to show what elements are common. Neither of old models is out-of-date, while its joint application may shed some new light into interactions which appear.

This builds the fundamentals for statistical analysis of those two processes, till now treated in general separately. We compare the existing models and studies in both streams and check empirically if spatial distributions of companies and their profits are linked to spatial distributions of the flats and their observed prices. We hypothesise that there exists visible links and spatial interactions between both. In an empirical illustration we use geo-located point big data for firms and flats in Warsaw, Poland in 2016.

### **Detection of urban system in India: Urban hierarchy revisited**

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G24-O1 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 11:00 AM - 1:00 PM

This paper uses concepts and measures from the central place theory to describe and analyze the urban settlement hierarchy in the northwestern part of India including mega-cities Delhi and Mumbai. A particular focus is on the functional importance of settlements based on the amenities provision. This approach is contrasted with the population-centered approach currently used in regional planning in India. GIS-based analysis is used to visualize the development gaps. In addition, this paper investigates the factors leading to population growth in different-size settlements. The empirical findings are used to infer on the potential effects of a large investment project – the Delhi-Mumbai Industrial Corridor – on different-size settlements. The empirical analysis reveals deficits in amenity provision in particular in large and medium-size urban settlements. In contrast, the majority of smaller urban centers are currently well-equipped to sustain additional population growth. With respect to dynamics over time, urban centers in more backward states in the study area displayed stronger improvements in the amenities provision.

The important determinants of urban growth identified in this research are the proximity to large urban centers, population density, employment structure, as well as natural amenities. The findings confirm that spatial disparities might be exacerbated by large investment projects in the absence of regional planning. The paper argues for a strong institutional structure and advocates for place-based policies in order to facilitate implementation of large-scale cross-border infrastructure projects and to harness the potential of smaller urban centers. The policy recommendations could be of direct relevance for India and other countries of the Global South.

### **The role of R&D-intensive clusters in regional competition and employment development**

Prof. Dr. Reinhold Kosfeld<sup>1</sup>, Prof. Dr. Timo Mitze<sup>2</sup>

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G08-O7 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 9:00 AM - 10:30 AM

Modern cluster theory provides reasons for positive external effects that may accrue from interaction in a group of proximate enterprises operating in common and related fields. Especially Porter externalities attribute competitive advantages to innovative clusters that are characterized by favourable demand and

factor conditions, rivalry and the presence of related and supporting industries. While Porters diamond model substantiates a close link of regional competition to productivity growth, the effect on employment development are less clear-cut.

There is a lot of empirical research to reveal cluster effects on economic performance. Recently, the papers of Delgado, Porter and Stern (2014) and Slaper, Harmon and Rubin (2018) address this issue from different points of view. Delgado, et al. (2014) evaluate the role of clusters on regional industry performance in the interplay between dispersion and agglomerating forces, whereas Slaper et al. (2018) differentiate between effects of cluster strength and diversity on regional performance without regard to potential countervailing forces. While the former paper focuses on growth of employment and innovation, the latter investigates cluster impacts on productivity, production, compensation and income growth. Both approaches identify regional clusters with the aid of traditional instruments like input-output analysis and the location quotient. The studies exploit data from the US Cluster Mapping Project.

The present paper focusses on impacts of R&D-intensive industry clusters on regional competition and employment development. To account for both dispersion and agglomeration forces we draw on the convergence model of regional growth (Islam 1995; Sala-I-Martin 1996). Within this model we differentiate between effects of cluster strength and diversity as counterparts of related and unrelated variety hypothesized by Frenken et al. (2007) at the industry level. The identification of R&D clusters is based on an hybrid approach of qualitative input-output analysis and spatial scanning (Kosfeld and Titze 2017).

The cluster impact analysis is conducted for a panel of German NUTS-3 regions in the period 2002 -2012. In line with Porter's diamond model (Porter 2000), competition is operationalized by productivity growth. Controlling for regional characteristics, a significant cluster strength effect is found in conjunction with conditional convergence. When both cluster variables strength and diversity enter the panel model the isolated diversification effect vanishes. In a more detailed analysis it is shown that productivity growth is strongly related to pharmaceutical clusters and electrical machinery clusters. This corroborates the attribution of growth effects to special types of clusters found by Maine, Shapiro and Vining (2008).

## **Only the lonely. Regional patterns in solo self-employment in the Netherlands**

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S19-S2 Regional Entrepreneurship Policy  
UdL\_Room 103, August 30, 2019, 2:00 PM - 4:00 PM

Since the 1990s, self-employment has increased rapidly in the Netherlands. Currently, over 15% of the labour force population is registered as self-employed. The growth in self-employment can be almost fully attributed to the rise of solo self-employment, firms with only one person involved. In fact, the number of employing firms has remained stable since the 1990s. Even though the solo self-employed represent a large, and growing group, they remain an understudied phenomenon. Similarly, solo self-employed typically do not have a well-developed position in economic policies, perhaps as a result of the large heterogeneity within the group. In addition, solo self-employed, by definition have little direct effect on employment generation. That having said, the sheer size of the group in the Netherlands make them a relevant topic of research. Also, they may collectively improve regional economic performance, for example through improving flexibility to larger firms. In a more general sense, understanding solo self-employment in the

Netherlands may inform the broader trend of flexible work contracts that underlie the platform economy, for example.

As such, it is relevant to understand the characteristics and the economic role of solo self-employed. This study then explores the regional patterns in solo self-employment in the Netherlands and it addresses the heterogeneity in the group as well as the regional differences of different types of solo self-employment. This informs local policy making towards solo self-employment. In more general terms, it contributes to our understanding of the spatially diverse effects of flexible labour market arrangements.

### **Local engagement for the common good project : the case of neighborhood preservation and functioning of Jazdów in Warsaw**

**Ms Joanna Koszewska<sup>1</sup>**

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S20-S2 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

**BACKGROUND :** In Warsaw, in the context of a rapid urban growth and neoliberal planning regulations, conflicts appeared and gave rise to bottom-up processes, resisting fast changes. Jazdów is an example of a historic green zone where strategic planning failed. Since 2005, the Municipality has not managed to make the Master Plan binding, and, instead, a group of social protesters has been negotiating the program for Jazdów with the City representatives.

**SCOPE :** The aim of this article is to examine the evolution of this pioneering project and its outcomes. This contribution is concentrated on empirical results of the research.

**METHOD :** The process-orientated research of the project was conducted through qualitative interviews with local actors, participatory observation, site visits, literature and planning documents review.

**STATEMENT :** A regular planning procedure failed due to protests against the reorganization plan. This subversive act led to the formation of a civic partnership between the activists and the Municipality, which agreed to work collaboratively on a new plan. Even though statutory planning is difficult to change, the partnership managed to preserve this plot and protect its natural heritage and built monuments by sectorial actions of a small scale.

**CONCLUSIONS :** A soft way of influencing policies can be achieved by undertaking pilot projects, temporary use, or enriching local territorial governance. A mixed governing style might improve the quality of urban vision. The structured collaboration in urban planning between the public and civic sector as one of participation forms might improve practices in the preparation of master plans and their execution.

**DISCUSSION :** The chosen case represents a specific type of governance in the process of urban transformation. The questions to be addressed touch upon the common features of such governance as well as its specifics, depending on the social capital of the activists involved and the perennity of collaborative urban planning.

### **Do Commuting Women Have Fewer Children?**

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G17-R1 Population, Migration and Mobility Behaviour  
IUT\_Room 110, August 28, 2019, 11:00 AM - 1:00 PM

Commuting is linked to fertility through demographic, social, and economic mechanisms. There are expected direct and indirect effects of commuting on fertility. An indirect response to labour mobility is assumed to affect both commuters and non-commuters. It is caused by the changes in the gender structure in the marriage market, by a spatial distribution of welfare, and by a spatial diffusion of family norms, in particular, the demand for children. Commuting women experience both direct and indirect changes in their preferences and attitudes towards children. They are hypothetically able to compare lifestyles and values in places of residence and work. In addition, daily transportation costs affect a commuter's budget constraint, which, in turn, affects the demand for children. Therefore, the relationship between commuting and fertility is measured by a set of parameters that facilitate separation and isolation of the effects. As commuting and family life are expected to affect one another mutually, a bivariate probit model is applied to account for the endogeneity of commuting. Empirical evidence of the effect of commuting on fertility is based on age-specific regressions and testing the influence of commuting on first-birth rates (FBR) of women 21-32 years old residing in the Stockholm area in Sweden during 1993-2006. It is shown that commuting generates both positive and negative externalities for the demand for children. Average differences in first-birth rates of young, working women are estimated by a bivariate model with endogenous commuting. Empirical evidence based on administrative data (Sweden) reveals that commuting women have a lower probability of a first birth between 21-28 years of age and a higher probability between 29-32 years. Therefore, commuting women likely postpone their first child. Additional direct and spillover effects of commuting on fertility appear in income cross-municipal flows, diffusion of fertility norms across space, and changes in gender structure of the population of fertile age. A positive effect on relative income and social norms and a negative sex ratio effect are found significant both for commuting women and those who work in the municipality of their residence. Marginal effects for commuters are greater in magnitude.

### **Impact of Modern Information and Communication Tools on International Migration**

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G03-R1 Big Data and Regional Science  
IUT\_Room 404, August 28, 2019, 2:00 PM - 4:00 PM

Observing the dramatic increase in the flow of migrants since the 2000s, one can hypothesise that emergent access to the Internet and mobile communications has contributed to it. Indeed, modern information and communication technologies (ICTs) help potential migrants overcome the strongest barrier to migration – incomplete information. Studies have found that ICTs assist migration decision-making and support people with information when crossing borders. An alternative view suggests that ICTs enhance capacities to maintain working and family life across long distances and act as a substitute for movement. This is due to the role of ICTs in the growth of independence from a fixed place of work, lessening information, emotional and social losses of migration, strengthening the cultural identity of migrants, and facilitating remittances to non-migrated family members. Empirical evidence for 191 countries for the period 1995–2015 supports this latter suggestion of a negative link between ICT development and migration flows. The model is specified as a dynamic panel data model that allows estimation of the medium- and long-term effects of ICTs on migration. A system generalised method of moments estimator and bias-correction for the FE estimator are

employed to account for potential endogeneity of ICT development to countries' socio-economic conditions.

### **Attractions of Historic Cities and Online Presence based on User Generated Content**

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S04-S1 The digital transformation of tourism in the city  
IUT\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

Historic attractions are one of the core components of urban tourism destinations, supplemented by contemporary and everyday sights and services. This study examines United Nations Educational, Scientific, and Cultural Organization (UNESCO) listed historic cities and the representation of their attractions through User Generated Content (UGC) of TripAdvisor, currently considered the largest travel web site globally. Attractions presented in the new format introduced in 2019 by TripAdvisor, are further categorized and analyzed based on their historic attributes and online evaluation by tourists. The study aims to provide answers regarding the extent and intensity of the linking between the official historic city designation and the online presence of the respective attractions. The study examines the potential effect of specific attributes of the historic cities and it seeks to identify prevailing patterns and trends. The objective is to provide a useful guide for urban tourism planners and destination managers to identify existing destination e-image differentiation related to the online presentation of historic components.

See extended abstract online.

### **Integrating actor dynamics with land use cellular automata for modelling climate and environmental policy implementation at regional level**

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S34-S1 Regional Modelling: New Approaches and Data  
MILC\_Room 308, August 30, 2019, 11:00 AM - 1:00 PM

Successful implementation of environmental policies, including climate adaptation and mitigation policies, requires careful consideration of regional and local conditions. Consequently, there is growing understanding that regional models are needed to support climate and environmental policy making. Such models need to take into account the dynamics of geographical space as well as historic and expected future land use change patterns. One relevant geographical modelling approach is based on cellular automata (CA) which has a prominent track record of successful application to a diverse range of geographical problems. Traditionally, CA models are calibrated to reproduce the footprint of actor decision-making manifested in historical land use dynamics, and then projected forward to explore the effect of the observed dynamics on future periods. However, this is a poor representation of the way the world actually works, since policy decisions reflect current needs and priorities, not historic ones. Such a model cannot help us understand how decision-making actors might respond spontaneously to emerging land use outcomes. For these reasons, we believe there is considerable scope for existing CA-based geographical models to be improved by introducing realistic representations of the dynamic behaviour of decision-making actors. We present a modelling approach which retains the well-attested benefits of CA land use models, but which allows greater flexibility in modelling the dynamic behaviour of actors for particular

“policy driven” land uses. To implement our approach, we integrate the APoLUS model (APoLUS stands for Actor, Policy and Land Use Simulator) – an open-source, multi-platform model based on geographical CA – with a system dynamics (SD) model describing the actor dynamics. The SD model is tailored to reproduce the dynamics of interaction (and possible conflicting interests) of a number of aggregate actors that might influence regional development in general and might affect (either in positive or in negative way) the implementation of policy under study in particular. In the present paper, we describe new developments in the actor dynamics model family, progressing beyond earlier work in three key ways: (i) incorporating the possible ‘regime shifts’ that might be related, in particular, to election cycles; (ii) describing in more detail the economic drivers of actor dynamics; (iii) introducing the stochasticity in a SD model.

## **Modelling the Demand for Weather Index-Based Insurance Products in Regions Prone to Agricultural Droughts**

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G19-O2 Health and Environmental Issues  
MILC\_Room 409, August 29, 2019, 4:30 PM - 6:00 PM

Weather index-based insurance is a promising insurance scheme that might be particularly relevant for the agricultural sector in many developing countries. In particular, it might be efficient in regions prone to agricultural droughts. Weather index-based insurance policies might be more affordable to farmers, as the payouts in these insurance schemes are based on weather indices objectively determined for the specific agricultural regions, and therefore the costly individual loss assessment is not necessary. We develop a stochastic model to simulate the demand for insurance policies in a drought-prone region. For the proposed modelling approach, it is essential that weather and climate services provide forecasts of the weather index on which the insurance scheme is based, as tailored products for regions vulnerable to droughts. In such a case, among other factors, the demand for the insurance policy might depend on the skill of available seasonal weather forecast, from which the weather index forecast is derived. We compare different strategies of individual farmers regarding weather index-based insurance products. One of the findings of this modelling study is that decisions based on a forecast for the coming season with very low skill might provide less economically successful strategies for the farmers than the decisions made when the forecast is ignored or is unavailable. Therefore, presented modelling results suggest that both strategies of individual farmers and the dynamics of aggregate demand for insurance policies might be sensitive to the skill of available regional forecast.

## **Socio-spatial effects of coworking spaces for knowledge flow and innovation capacity: the case of Istanbul**

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S08-S1 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 11:00 AM - 1:00 PM

Space and economics have evolved with the change in the information- communication technologies. In this change process, sharing economy has become crucial for sustainable growth and economic development. From this framework; co-working spaces are the new model of workplaces which is based on sharing and collaborative economy and works with different groups as a community. The aim of the research is to identify to what extent and how co-working spaces provide an environment for the flow of knowledge and development of entrepreneurship - innovation capacity with networking opportunities in Istanbul. Semi-

structured interviews will be conducted with the users from different sectors and founders of spaces to identify the capacity of innovation- entrepreneurship and creation of knowledge.

### **Regional Convergence at the County Level: The Role of Commuters**

**Prof. Melanie Krause**<sup>1</sup>, Dr. Sebastian Kripfganz<sup>2</sup>

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S29-S1 Mapping flows, movements and cities networks at a European level

MILC\_Room 309, August 28, 2019, 4:30 PM - 6:00 PM

Commuters spend a substantial portion of their income in a different place from where they earn it, thereby constituting an important channel for cross-regional economic dependencies. In this paper, we analyze their role for economic convergence. Commuter flows are inherently asymmetric which implies a stronger shock propagation from large economic centers to rural regions than in the opposite direction. This is in contrast to the symmetric network structure implied by the conventional geographic weights in spatial econometric models that are based on contiguity or geographical distance measures. Motivated on the grounds of the neoclassical growth model, extended for spatial spillover effects, we use German county-level data from 2002 to 2014 to estimate a panel data model that is dynamic both across time and space. We find that the speed of convergence is substantially overestimated when ignoring spatial spillover effects, irrespective of the choice of the spatial weights matrix. The estimates of the spillover effects themselves are smaller using commuter weights than geographical measures due to the restricted feedback to large economic centers.

## **Land and regional development: opportunities and limits to decouple economic change from land consumption**

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G04-O12 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 11:00 AM - 1:00 PM

Regional economic and spatial development is explained with agglomeration economies, accessibility and land prices. However, the role of natural resources for regional development is somewhat missing. Whereas natural resources have been used to explain initial location choices resulting in city emergence, they have been largely neglected in further regional development processes. This finding especially pertains to land as a natural and spare resource.

Land is indirectly considered in terms of transportation costs in studies about spatial reconfiguration processes, whereas it is directly addressed in discussions about urban sprawl or growth management to preserve open spaces. But established spatial economic models and related empirical work simply premise that sufficient land is available for urban economic progress. Likewise, these models postulate that (new) land consumption essentially follows economic development.

Thus, starting from current regional spatial and economic development processes, it is necessary to perceive economy and ecology as two sides of a coin. This is partially done in the so-called decoupling debate. It addresses the relationship between GDP growth and environmental degradation while focusing on the potentials of decoupling these two to achieve a sustainable economic development. However, the natural resource land is neglected there, too, although current political and environmental goals advocate a reduction of land consumption while maintaining decent regional economic development.

This situation establishes this paper's stating point. The paper addresses the role of land in regional economic development by means of two questions: how do different types of economic development—both regional and sectoral—affect land in terms of use and consumption? Do different types of land contribute differently to the regional economic and spatial development?

These questions are answered using spatial regression analyses conducted on several spatial scales to acknowledge both local and regional relationships as well as their interaction. The data basis consists of administrative data on several socioeconomic variables and data on several aspects of land use and open space provided by the IOER-Monitor. Additionally, a number of controls is included.

The paper contributes a deeper understanding of the relationship between socioeconomics and land on different spatial scales. It furthermore outlines the opportunities and limits of decoupling economic development and land consumption. Finally, it is discussed if decoupling is certainly desirable from an economic and/or environmental perspective.

## **Persistence and Change of Regional Entrepreneurship and Innovation Activities in Germany**

**Ms Maria Kristalova**<sup>1,2</sup>, Prof. Dr. Michael Fritsch<sup>1,3</sup>, Prof. Dr. Michael Wyrwich<sup>1,4</sup>

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S25-S1 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 9:00 AM - 10:30 AM



We study inter-regional persistence and change of entrepreneurship and innovation activities in Germany in the 1907-2015 period. We employ a unique data set on self-employment and start-up rates as well as historical patents at a regional level throughout the last century and beyond. Preliminary results are ambiguous and underpin a stability hypothesis on the one hand, and a change hypothesis on the other hand. We observe a strong path dependency of regional levels of new business formation in some regions, whereas there is pronounced rank mobility of others. We also exploit the division of Germany into two different states after World War II and the re-unification more than 40 years later as a natural experiment and investigate the impact of the different political regimes on persistence and change in the levels of regional entrepreneurship and innovation. Using a regional League Table (LT) and a difference-in-difference (DiD) approach, we are also able to quantify the long-run role of the socialist legacy in today's divergence of the regional economic performance.

Our results show that the socialism treatment effect is not as significant as the public debate often suggests. Instead, we find that the share of manufacturing employment, physical proximity to centers of and R&D activities prior to World War II are more effective in the long run and socialism may just have fell on the fruitful ground. The results help to a better understanding of why some regions nowadays fall so strongly behind others.

### **A Bayesian spatial autoregressive logit specification with an empirical application to European regional FDI flows**

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<sup>1</sup>*International Institute for Applied Systems Analysis, Laxenburg, Austria,* <sup>2</sup>*Austrian Institute of Economic Research, Vienna, Austria.*

S35-S1 Recent Advances in Spatial Econometrics and Big Data  
MILC\_Room 310, August 29, 2019, 9:00 AM - 10:30 AM

In this paper we propose a Bayesian estimation approach for a spatial autoregressive logit specification. While estimation for spatial autoregressive probit models are already well documented, the involved computational problems renders estimation of spatial logit specifications particularly difficult. Our proposed approach uses recent advances in Bayesian computing, making use of Pólya-Gamma sampling for Bayesian Markov-chain Monte Carlo algorithms. Specifically, the proposed specification assumes that the involved log-odds of the model specification follows a spatial autoregressive process. The use of Pólya-Gamma sampling involves a computationally efficient treatment of spatial autoregressive logit models, allowing to extend existing specification in an elegant and straightforward way. In a Monte Carlo study we show that our proposed approach significantly outperforms existing spatial autoregressive probit specifications both in estimation precision and computation time. The paper moreover uses European regional data on foreign direct investment (FDI) activities to illustrate the performance of the proposed Bayesian spatial autoregressive logit specification. In the empirical application we use information on FDI press announcements from the fdiMarkets data base, which is maintained by a specialist division of Financial Times Ltd. Specifically, we aim at modelling the occurrence of greenfield FDI announcements in host regions in Europe by explicitly accounting for spatial autoregressive log-odds and regional neighbourhood characteristics.

## **Chinese provincial convergence, disparity, and mobility: An intra-distributional comparative study**

**Ms Archana Kumari**<sup>1</sup>

<sup>1</sup>*University of the West of England, Bristol, United Kingdom*

S24-S1 Neo-Weberian Approaches to China: Cultural Attitudes and Economic Development  
IUT\_Room 415, August 29, 2019, 4:30 PM - 6:00 PM

The study examines the regional dynamics of convergence, divergence, mobility, persistence, and polarisation for 31 Chinese provinces from 1993 to 2016. The growth paths widely diverge for 21 poor inland provinces and 10 rich coastal provinces. With regard to convergence, the study finds that convergence started to predominate from 2005 to 2014 and there is a larger influence of within coastal-coastal provincial equality to the overall national convergence. Our findings suggest importance of group-culture for economic growth since we find a positive relationship between a province converging without switching, indifferent if its 'club' is the winners or losers in relative economic growth.

## **Applied econometrics to measure the economic performance for a country**

**Mr Marcell Kupi**<sup>1</sup>, Mr Ferenc Bakó<sup>1</sup>

<sup>1</sup>*SZE RGDI, Hungary*

S26-S1 Comparing local and regional development within and between countries – what information and data is needed?  
IUT\_Room 202, August 30, 2019, 11:00 AM - 1:00 PM

There has been much debate as to which measure is best when studying economic development of a nation. In our study economic development is represented by GDP. Our longitudinal study compares annual GDP in regressions with seven explanatory variables (interest rate, inflation, unemployment, export, general government debt, foreign direct investment and government expenditure). These variables have more variance contribution of themselves as compare to other variables in system. The data has been taken from World Bank database. The data has been collected for a period of 17 years from 2000 to 2017. This research is limited to only a few selected counties in Europe, namely Poland, Czech Republic, Slovak Republic and Hungary.

## **An empirical study on domestic tourism in Japan**

Prof. Tatsuaki Kuroda<sup>2</sup>, **Mr. Kaifan Chen**<sup>1</sup>

<sup>1</sup>*Sugiyama Jogakuen University, Nagoya, Japan*, <sup>2</sup>*Nagoya University, Nagoya, Japan*

G18-O4 Tourism and Culture  
IUT\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

This paper analyzes the situation in which the citizens of the regions have opportunities to travel domestically across the border of the other regions. It is an extension of our former theoretical work where the governments are assumed to serve as the source of funding for the improvements to the infrastructure of international tourism, including the areas of public facilities, natural areas, and artificial scenic construction. We examined the international competition in tourism, based on the concept of Nash equilibrium in the game theory. As an application of that, in this paper, we investigate the correlation between the regional tourism factors among the prefectures of Japan, by empirical analysis. We attempt to verify several hypotheses by the time series data verification. For example, without political and language factors in this case, small regions would be more likely to develop tourism. To some extent, in addition, we

would confirm the attractive factors based on the concept of a gravity model. The number of visitors as well as consumption are analyzed by the model. For those small regions, our question is whether the impact of government spending for tourism should be larger or not. Also, we examine whether the differences in the growth rates of visitors across regions might be smaller and converged over time.

### **Digital Personalized Travel Planning (PTP) for Car Drivers unready For Modal Shift**

Ms Florence Labarre<sup>1</sup>

<sup>1</sup>LAET, Vaulx-en-velin, France, <sup>2</sup>RATP Smart Systems, Noisy le Grand, France

G01-R1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 11:00 AM - 1:00 PM

This presentation shows the impact of personalized travel planning (PTP) applied to journey planner apps on car drivers who are not ready for modal shift.

Modal shift is often considered as a one-step process for switching from car to other modes, which leads to measures focusing only on incentives to use alternative modes. However, these measures are only effective for car drivers who already question their mobility behavior and contemplate changing. Modal shift is about mobility behavior change. According to psychology models, behavioral changes involve a series of stages (transtheoretical model), several of which occur prior to the action stage. Our study focuses on those preliminary stages to bring an extension tool to modal shift policies.

The experiment we present intended to encourage car drivers to question their habits and ideas about alternative mobility solutions. Usually, mass communication campaigns (posters, flyers...) are used, but the impact is always limited. PTP aims to generate an interest in alternative transport offers through soft measures (communication, information, coaching, education ...) and personalized measures. This PTP method is used mainly to guide people to take action with the help of a mobility coach. Given the good results of this method (average reduction of 10% of car mileage), we have conducted our experiment following this paradigm. Targeted and contextualized messages were sent to car drivers. To avoid certain limitations of PTP (high cost, time-consuming temporary process) and to enable targeting, messages were sent using a journey-planner app. The experiment, which was conducted with 120 car drivers, lasted 10 months in Bordeaux Métropole.

### **Local currencies in France: a spatial representation**

Mr Csaba Lakócai<sup>1</sup>

<sup>1</sup>University Of Pécs, Doctoral School in Regional Policy and Economics, Pécs, Hungary, <sup>2</sup>Hungarian Academy of Sciences, Institute for Regional Studies, Pécs, Hungary

G20-O2 Social Innovation for Resilient Regions  
IUT\_Room 203, August 30, 2019, 9:00 AM - 10:30 AM

In France, the latest financial crisis gave boost to the creation of local currencies - a form of socioeconomic innovation and direct local scale response to the failure of the formal financial and monetary systems. The first scheme of the country-wide local complementary and community currency network (in French "le réseau des monnaies locales complémentaires citoyennes", or "réseau des MLCC"), was put into circulation in 2008. Currently, there are more than sixty existing projects (some further currencies exist beyond the network too) and more than seventy future projects will be implemented in the upcoming years. These numbers are remarkable, however the process of creation and implementation is not spatially even. The statistical overview and spatial presentation of the local currency schemes have been mainly omitted by the relevant literature so far. In the presentation, I deal with the spatial features of the territorial distribution of

the local currencies in France in a NUTS-3 regional breakdown by applying descriptive statistics and regression analyses.

The results are based on our joint research with Jérôme Blanc, full professor in Economics at Sciences Po Lyon.

### **The impact of the French sensitive urban zones ZUS on the location choice of economic activities—Lyon Urban Area study case**

Dr Louafi Bouzouina<sup>1</sup>, Ms Ayana Lamatkhanova<sup>1</sup>, M Ioannis Baraklianos<sup>1</sup>

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G12-O3 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 11:00 AM - 1:00 PM

In this paper, we study the impact of a French sensitive urban zones—the “Zones Urbaines Sensibles” (ZUS)—on economic activities’ location decisions. The low income level and insufficient motorisation rate of residents reduce the accessibility to jobs, to public equipments and to retail stores. The reputation of a disadvantaged neighbourhood may provoke some economic sectors to avoid those districts during the location choice while the incentive program aiming the sensitive urban zones may attract other activities to install and to maintain some of the existing ones in sensitive urban zones. Our empirical analysis is based on a micro-geographic data set which provides exhaustive information on the location of establishments in France for the 2018 year at the census block level. We use a discrete choice modelling approach using a multinomial logit to estimate the location choice of an establishment conditioning to different explanatory variables. The fine area unit IRIS (‘aggregated units for statistical information’) is used to this analysis where we distinguish the IRIS unit with ZUS, IRIS unit without ZUS and IRIS areas surrounding ZUS. We also bring the attention to the distinction for the type of activity in order to underline the differences between back-office and front-office establishments. These establishments do not have the same requirements for their location during the decision making process as they search.

### **What does the relationship between aging and housing prices tell about local decline and wealth reshaping?**

Raphael Languillon<sup>1</sup>, Dr. Yasmine Essafi

<sup>1</sup>*University Of Geneva, Geneva, Switzerland*

S37-S1 Geography of the real estate stock wealth and of its evolutions  
IUT\_Room 201, August 30, 2019, 9:00 AM - 10:30 AM

Assuming a life cycle economy perspective and using the link between demography and house prices, this article proposes a methodology to analyze the spatial reshaping of housing wealth caused by the elder-boom. The modification in housing wealth circulation across generations is also a spatial modification that carries consequences for local territories. While the losses are amplified for some departments, others benefit from this reorganization. Metropolization is insurance against important wealth losses, whereas for the nonmetropolitan departments, a combination of second-order factors is required to avoid housing wealth decline. Our results suggest that these evolutions are mainly structural and that the cyclical variables are of secondary importance. Compensation, by positive cyclical trend, for structural decline is not a circumstance that currently obtains in French case. Gentrification also appears to be strongly related to this change, in which various macrostructural inequalities are reinforced. As for the unemployment rate, this indicator poorly reflects the shift and can be misleading.

## Referrals and Self-employment

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G05-YS1 Regional and Urban Labour Markets (EPAINOS)

IUT\_Room 304, August 29, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

## Assessing the average cost of hospitalization in medical and surgical units for slight and serious injuries resulting from road crashes

Mr Maxime Large<sup>1</sup>, Laurent Carnis<sup>1</sup>, Jean-Louis Martin<sup>1</sup>, Dominique Mignot<sup>1</sup>

<sup>1</sup>*Ifsttar, Bron, France*

S59-S1 Road Safety Economics for Resilient Countries and Regions

IUT\_Room 108, August 29, 2019, 2:00 PM - 4:00 PM

One aim of the research projects Vasem and M-Vasem (Carnis et al., 2018) is to assess the cost of road accidents in France. That communication propose to asses the average cost of such injuries, especially focusing on the medical cost component which is not currently taken into account in the official balance sheet of road safety. The method used rests upon the restitution of costs approach. This consists in assessing the resources for the recovery of road victims and their families.

To estimate the cost of hospitalisation for road traffic injuries, we proceed with three main steps which are the identification of road traffic injuries, the determination of the severity of injuries and the estimation of the cost of hospitalization.

Between 2009 and 2013, the average costs of hospitalization in medical and surgical units for the slightly injured and the seriously injured increased from 2115 euros and 9058 euros respectively to 2242 euros and 10338 euros, i.e. an increase of 6% and 14% respectively.

The contribution of this preliminary work and upcoming work should allow to include the medical costs in the official road safety balance sheet. A complete estimate of the cost of road safety will allow, on the one hand, a better appreciation of the impact of road accidents on society and, on the other hand, assistance for public decision-makers in prioritizing road safety investments.

## Human cost of road morbidity: first results from M-Vasem (Method of Socio-Economic Valuation of road Morbidity) Project

Mr Maxime Large<sup>1</sup>, Laurent Carnis<sup>1</sup>, Jean-Louis Martin<sup>1</sup>, Dominique Mignot

<sup>1</sup>*Ifsttar, France*

S60-S1 Road Safety Management in Developing Countries: the case of Africa

IUT\_Room 108, August 29, 2019, 4:30 PM - 6:00 PM

The Vasem and M-Vasem research projects (Carnis et al., 2018) aim at valuing the cost of road morbidity in France. The main component of the cost of road accident is the human cost. The human cost of a road traffic injury refers to the disutility suffered by the victim as a result of the loss of quality of life due to a traffic accident and the loss of life expectancy due to the injury.

To estimate the human cost of road traffic injuries, we proceed with four main steps which are the identification of road injuries, the classification of road injuries into 39 EUROCCOST groups, the calculation of DALYs suffered by each person and the application of a discount rate on future disabilities.

In the first year, the slightly injured and the seriously injured person hospitalized for a short stay suffer an average of 0.17 DALY and 0.22 DALY respectively. It is in the long term that the difference increases since the slight injured person suffers on average 0.99 DALY when the serious injured person suffers 2.43. When discounted, long-term disabilities almost halved to 0.54 DALY and 1.34 DALY for the slight and serious injuries. In total, the discounted human cost in DALYs of the slightly injured and the seriously injured hospitalized during short stays was estimated at 0.71 DALYs and 1.6 DALYs respectively.

This research work will allow to take into account specifically the human costs in the official balance sheet of road safety instead of using percentages of VSL to obtain figures with more scientific foundation.

### **Open access competition in the railway market: better prices and frequencies?**

Dr. Florent Laroche<sup>1</sup>, Mme Ayana Lamatkhanova<sup>2</sup>, Dr Leny Grassot<sup>3</sup>

<sup>1</sup>University Of Lyon, France, France, <sup>2</sup>Transport, Urban Planning and Economics Laboratory, Lyon, France, <sup>3</sup>Transport, Urban Planning and Economics Laboratory, Lyon, France

S68-S1 Transport Infrastructures and European Integration in the Framework of the White Paper 2011:  
Evaluation, Benchmark, Perspectives at the Age of Digital Transformation  
IUT\_Room 108, August 30, 2019, 2:00 PM - 4:00 PM

This paper explores the effect of competition on prices and frequencies for the Interurban rail market in Europe. The market is defined by long distance train services mixing classical speed and high speed. The intramodal competition is usually in "open access" for long distance services in Europe and can be formalized through the Herfindahl-Hirschman Index (HHI) commonly used to assess the level of concentration between different firms on a market. The intermodal competition takes into account the air transportation, as usually in the literature, but includes new type of services as coach services and carpooling services. The analysis is original by an extended perimeter including seven European countries and a total of 90 routes. The method is based on an econometric analysis which has never been applied yet to the rail market and its specificities in terms of competition. Results show that intra-modal competition have a significant impact on frequencies for long distance train services but no significant effect on prices in economic class. Otherwise, the effects of intermodal competition are limited mainly because of the strong differences between the market structures in terms of travel time, comfort or user's preferences. It is the case of coach and carpool services, available when prices for train are high, but not of air transport which can drive train operators to decrease their prices in case of direct competition for long distance.

### **Social Capital and Institutional Quality in the Italian Provinces**

Dr. Vincenzo Larosa<sup>1</sup>, Prof. Angela Stefania Bergantino<sup>1</sup>

<sup>1</sup>University of Bari Aldo Moro, Bari, Italy

G22-O2 Institutions  
IUT\_Room 303, August 29, 2019, 4:30 PM - 6:00 PM

Social capital is strictly linked to the quality of institutions and determines their performance. Nevertheless, social capital as a multidimensional phenomenon is difficult to quantify. According to OECD, social capital is defined as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups". How to measure social capital is not widely accepted and it has become a debate

in itself. The quantitative measuring has proven somewhat complicated that has resulted in different metrics for different dimensions. In the literature, its dimensions have been assessed through direct indicators (as voluntary associations, and social interaction and networks) and indirect indicators (newspaper diffusion, crime rates, political participation, blood donation (Putnam, 1993; Guiso, Sapienza, Zingales, 2004). Also, these measures may occur at different territorial levels. For instance, in Italy, the social capital and the quality of the institutions are phenomena rooted in the communities, which differ within the country by pointing out an important territorial aspect of the phenomenon (Putnam, 1993, 2000).

This work aims to explain the drivers that favour institutional quality, at the provincial level, in the period between 2007 and 2012. Through investigating the level of institutional quality by using the Institutional Quality Index (Nifo and Vecchione, 2014), we test some additional variables beside of the classical ones that we think better determine the social capital. We collect data at Italian provincial level of socio-demographic, institutional and economic context variables, as well as of crime against PA, gender equity, social inclusion, waste management, research and development indicators. Using a panel data analysis, we study the impact of different variables that delineate social capital on institutional quality level. Moreover, the reverse causality between institutional quality and social capital is explored. Our work contributes to the literature on two ways: first, from the different institutional level considered (province level/EU-NUTS3) and second, for a more comprehensive concept of social capital.

### **Wine tourism and territorial development: what practices for what opportunities**

Ms Diane Laugel<sup>1</sup>, Dr Leïla Kebir<sup>1</sup>

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G18-O3 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

This paper questions the relation between wine tourism and territorial development. Based on a literature review and on an inventory of wine tourism practices, the objective is to propose an analytical framework to analyze its contribution (or not) to territorial development (resource development, collective learning processes, innovation dynamics, employment, vineyards maintaining, etc.).

According to France AgriMer (2016) wine activities engage positives dynamics and contribute to maintain an economic and social life for “rural disfavored area”. The opening of vineyards to tourists enhances local actor’s dynamics and the territory planning (Mitchell & al. 2018) but can also bring use conflicts. Also terroir economy appears as a marketing key tool for territory as it diffuses images and symbols in the consumer system.

The paper start with the definition(s) of wine industry and the identification of related practices. Different tourism models such as wine tourism, oenotourism (Lignon-Darmaillac, 2017) were described and scrutinized in the literature. The second part of this paper will identify and analyze the forms of relations to the territory that these models imply. Finally based on the literature of territorial economy, the paper will propose an analytical grid aiming at understanding the relation between wine tourism and territorial development.

FranceAgriMer, «Plan stratégique sur les perspectives de la filière vitivinicole à l’horizon 2025»  
: <http://www.franceagrimer.fr/content/download/32879/296608/file/strat%C3%A9gie%20vin%202025%20-%20Plan%20strat%C3%A9gique%20-%20vs%20160714.pdf>

Richard Mitchell & al. “Cultural Systems and the wine tourism product”, Annals of Tourism Research, Vol. 39, No 1, pp. 311-335, 2012, doi: 10.1016/j.annals.2011.05.002

Sophie Lignon-Darmaillac, « les grandes orientations : modèles européens, modèles californiens. », Territoires du vin [En ligne], Numéros, n° 8 - Patrimoine et valorisation des territoires de la vigne et du vin,

Valorisations touristiques, patrimonialisation et traditions dans les vignobles., mis à jour le : 21/12/2017,  
URL : <http://pepiniere.u-bourgogne.fr/territoiresduvin/index.php?id=1336>.

### **De la nouvelle fabrique de l'action publique en lien avec l'innovation et la créativité : application au cas wallon (Belgique)**

Dr. Moyart Laurence<sup>1</sup>, Prof. Leloup Fabienne<sup>1</sup>

<sup>1</sup>*Uclouvain (mons), Mons, Belgium*

S23-S1 Territorial and place-based governance, (new) processes for local coordination  
IUT\_Room 303, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Motorized individual mobility in commuting trips: modal preference or constraint choice? A machine learning approach**

Mr Rémy Le Boennec<sup>1</sup>, Mr Fouad HADJ SELEM<sup>1</sup>

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G03-O1 Big Data and Regional Science  
IUT\_Room 408, August 29, 2019, 9:00 AM - 10:30 AM

In the Ile-de-France Région, France, the modal share of car in commuting trips is 42% (Source: Global Transport Survey, 2010), a much lower figure than the national average (70%). In this article, we use an original predictive tool that relies on multi-source input data to estimate the flows, modes, and socio-demographic characteristics of mobility users. We focus on commuting, as the recurrence of such trips theoretically enhances modal shift towards more sustainable transport modes on the long term.

From the output data predicted by the tool, we elaborate, for all origin-destination couples (O-D) between municipalities in the Ile-de-France Région ( $n = 1286^2$ ), an original indicator of the relative performance of public transport in relation to car. We measure this indicator as compared travel times: for each O-D couple, we compare the predicted travel time to the modal share of car, also predicted by our tool. We thus identify three groups of municipalities:

- A first group whose respective modal shares of car and public transport are consistent with the modal performance indicator: comparable travel times between car and public transport are correlated with respective modal shares close to the Ile-de-France average;
- A second group whose residents seem more favorable to public transport than suggested by the modal performance indicator, as predicted travel times appear to be in favor of car;
- A third one, with the opposite conclusions.

A more detailed territorial analysis focuses, in a second time, to cross these three groups of municipalities with the following typology of territories: Paris (central city), other municipalities of Greater Paris (inner suburbs), other municipalities of the Paris agglomeration (outer suburbs), central municipalities of the rest of the Ile-de-France Région, other municipalities. This typology crosses dwelling densities, employment densities and flows between the two, on the one hand, and a morphological criterion delimiting the boundaries of the agglomeration, on the other hand. The interest of such a crossover lies in mobility issues that remain specific, within the Ile-de-France, to each type of area.



Such results highlighting modal preferences of households appear valuable for social sciences, in that they allow to empirically raise the calibration difficulties often pointed at in theoretical models of urban economics.

### **The role of accessibility in land capitalization: what influence of railway stations in periurban and rural areas?**

**Mr Rémy Le Boennec**<sup>1</sup>, Ms Julie BULTEAU<sup>2</sup>, Mr Thierry FEUILLET<sup>3</sup>

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G16-O6 Transport, Land Use and Accessibility  
IUT\_Room 110, August 30, 2019, 11:00 AM - 1:00 PM

In this empirical article, we seek to reveal the effect of accessibility to passenger railway stations in land capitalization. The stakes are crucial, as urban development in many OECD countries has been built around the individual car, favoring sprawled cities. The proximity to a railway station may thus be sought by households engaged in a land acquisition for residential purposes.

The method we used in this article consists of estimating the effects of accessibility to passenger train stations on land prices in the periurban and rural areas of the Loire-Atlantique Département, France. Data on land prices come from the Perval database for transactions recorded in 2012 in both the suburban ring of Nantes (431 observations selected) and in isolated municipalities of the Loire-Atlantique Département (395 observations selected). The database integrates intrinsic attributes: surface area, status concerning the viabilisation, presence of constructions to demolish ...To constitute our database, contextual variables likely to be capitalized in land prices were quantified as well.

Three regression models were estimated afterwards, all adjusted to intrinsic and contextual variables. At first, the average effect of the distance to the nearest station was revealed through a global log-linear model. In a second step, we were willing to test the assumption according to which the function between this distance and the prices would be decreasing. Thus, a generalized additive model (GAM) has been produced. This type of nonparametric model makes it possible to estimate nonlinear functions in a multiple regression. Finally, we explored the possible spatial heterogeneity of the relationship between the distance to the nearest station and the price of land using a mixed geographically weighted regression (MGWR). The underlying assumption is that this relationship is likely to vary depending on local contexts, including the attractiveness of the municipality of the train station, as well as human flows in this station.

Our recommendations support decisions made in the development of local mobility. The results concerning the significant radius of influence of a train station should help decision-makers to make these latter evolve into multimodal exchange poles. In the absence of significant influence of the station considered, a broad incentive to carpooling practices should be driven by local authorities. The range of our results regarding the types of territory considered also prepares for tomorrow's autonomous mobility for "last-mile trips" towards train stations, a solution envisaged by many French local authorities in various types of areas.

## **Geographic distribution of fish landings over a hundred years: the case of the sardine industry in France (1896-2017)**

**Dr. Pascal Le Floc'h**<sup>1</sup>

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S25-S1 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 9:00 AM - 10:30 AM

The issue of industrial concentration is an object of study in the manufacturing sector, observed from long-term statistical series (Dumais et al., 2002; Kim, 1995). In fact, the spatial concentration of firms linked to the same industry, a horizontal concentration, is a structural variable.

The location strategies of firms, driven by differences in the price of production or differences in production costs between regions, modify the spatial distribution of industrial activities. Other factors favor these displacements such as the sources of supply or the quality of environmental factors. Consequently, concentration also appears in a vertical dimension, with dependent companies through a supplier-client relationship.

The marine fishing industry is not immune to these capital movements. The analysis of the spatial location of fishing fleets located upstream of the industry is possible from landing sites registered by the State or decentralized public agencies as a statistical recording point of production. Only few studies exist on this issue with empirical research in fisheries (Hannesson, 2007).

The statistical series of productions from marine fisheries rarely have a historical depth of more than fifty years. Yet, historical reports provide new insights into the diversity of trajectories followed by fishermen communities. Faced with a collapse in production, some communities are successfully converting to other industrial activities, while others resist hoping for a return to previous levels.

We seek to understand the survival of some communities and the disappearance of others over a long period of more than a century. The historical study shows that the specialization strategy of some communities does not necessarily reflect an inability to adapt. Should we then consider that the historical persistence of a population of entrepreneurs staying in the same industry, at a localized territorial level, reveals a high degree of social resilience incompatible with innovative behaviour?

Conceptual research on socio-systems (Holling, 2001) indicates that change occurs only during periods of high vulnerability (eg the sudden collapse of an exploited natural resource stock) and therefore low resilience. The case examined in this article, geographic location of fishing ports for the sardine industry, shed new light on the historical survival of communities with high resilience.

## **Should French municipalities foster urban densification to reduce their expenditures?**

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G04-O11 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 9:00 AM - 10:30 AM

The relationship between population and employment density and the costs of public services remains the subject of numerous controversies due to the wide range of estimated elasticities. This disparity derives essentially from measurement and identification sources. Based on a sample of French municipalities for the period 2003-2015, this paper addresses both considerations and provides further evidence in support of a non-linear relationship between the size of cities and public expenditures per capita. First, we measure density differently from the traditional literature and consider two metrics. Second, to tackle endogeneity concerns, we exploit historical records of population, settlements and soil characteristics in a municipality as

an exogenous source of variation of current levels of density. Our preferred specifications imply -0.10 and 0.13 elasticities for per capita current and capital expenditures respectively.

### **Why people do (or don't) rideshare for daily short-distance trips? A discrete choice experiments study**

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S31-S1 Carpooling for daily trips  
IUT\_Room 103, August 30, 2019, 2:00 PM - 4:00 PM

Congestion situations can cause various nuisances. Public authorities are trying to set up infrastructures and incentives to reduce these. Among them, we can find HOV lanes. One of the first in France will be located in the Lyon area. In the French context, ridesharing is by far not the most used mode in daily commuting. This paper aims to understand the different mobility behaviors and how to make of ridesharing a transport's mode considered by the individuals in their choices when making their trip. To do so, we will conduct a discrete choice experiment to monetary value impacts on preferences of different trip components, including specific rideshare ones. Data will be collected in April 2019 and results will follow shortly.

### **The Impact of Automation at Regional Level**

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S11-S2 The regional socio-economic impact of the 4th industrial revolution  
UdL\_Room 104, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Causes of particular matter air pollutant concentration in Korea – Who to blame?**

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G19-O1 Health and Environmental Issues  
MILC\_Room 409, August 29, 2019, 9:00 AM - 10:30 AM

A high concentration of particular matter (PM), which increases the risk of human health, is one of the major social issues in Korea. Because of possible causes and consequences from the PM, societal and political arguments and criticisms are rapidly developed and requested special attention to solve the problems. One of the main criticisms is the PM pollutants carried by the wind from China. Diplomatic conflicts arise due to different understanding of PM problems between Korea and China. Therefore, it is important to understand what are causes the PM emissions and its concentration. The objective of this study is to identify the socioeconomic factors that can relate to the possible contribution of PM2.5 concentration in Korea. Panel model is employed using the data of PM2.5 level for three years (2015 to 2017) for 17 provinces in Korea. The results indicated that the number of registered diesel engine vehicles,

manufacturing production activity, and PM2.5 concentration of three provinces (Hebei, Shandong, and Jiangsu) in China are closely related to the PM2.5 concentration in Korea. Among these contributors, the number of registered diesel engine vehicles has the highest correlation with the PM2.5 concentration. It is important for the Korean government to consider a long-term multidimensional approach to solve this important issue and understand the possible societal welfare affect with innovative policies.

### **ASEAN or Plus Alpha? A Gravity Model Analysis of the Effectiveness of Regional Trading Blocs**

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G06-R1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 2:00 PM - 4:00 PM

This study examines the effectiveness of regional trading blocs in Southeast Asia. Over the years, the Association of Southeast Asian Nations (ASEAN) has engaged in various agreements to position, secure, and widen the scope of regional integration to promote economic and social development. As part of that effort, ASEAN formed plus groups with other countries, such as ASEAN3, ASEAN6, and AANZFTA. These groups have enabled East Asian countries—both Southeast and Northeast Asian countries—to cooperate and negotiate their shared interests and concerns. To confirm the importance of regional economic blocs and analyze their effectiveness, this study applies the gravity model of trade to comprehensive panel data from the ASEAN's 10 member-countries, covering 17 years of activity with their 29 major trading partners. This study finds that limiting the trading bloc to 10 countries is suboptimal and shows that adding six members (Australia, China, India, Japan, New Zealand, and South Korea) to the bloc—a configuration formally known as ASEAN Plus Six or ASEAN6—improves the trading bloc's effectiveness. In addition, the analysis indicates that ASEAN member-country export volumes to Plus Six members will be 2.5 to 4 times higher than to non-members. In the latter portions of this paper, the policy implications of these findings are discussed.

### **A Gravity Model Approach of Sri Lanka's International Trade Pattern**

Ms Ji Won Lee<sup>1</sup>, Prof Jinhwan Oh<sup>1</sup>

<sup>1</sup>*Ewha Womans University, Seoul, South Korea*

G06-R1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 2:00 PM - 4:00 PM

Despite Sri Lanka being an interesting case as the first South Asian country to have liberalized its economy, few studies have empirically examined Sri Lanka's trade patterns. Most of the existing studies examine Sri Lanka's international trade experience and Sri Lanka's bilateral trade with India. This study empirically examines Sri Lanka's international trade pattern by analyzing a panel dataset of the country's bilateral trade flows with 204 countries for 21 years (1995-2016). This is examined by using two sets of regressions to analyze the collected data: panel random effect with the lagged variables and instrumental regression with Two-Stage-Least-Squares (2SLS). The empirical results generally supported the prediction of the gravity model, in which the variables GDP and per capital GDP have positive coefficients while distance has negative coefficients. When the data was examined by calculating the difference between the estimated and actual values of exports and imports, it was found that Sri Lanka's export flow with the Asian countries – China and Nepal – was undermined. Thus, Sri Lanka should redirect its exporting activities to China and Nepal. For imports, trade with the following countries: Thailand, Nepal, Bhutan, Laos, Vietnam, Philippines,

Myanmar and Cambodia were undermined. Therefore, it is suggested that Sri Lanka diversify its trading activities with the identified countries.

### **Exploring the economic, geographic and social aspects of unmet healthcare needs**

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S06-S2 Changes in health care provision, spatial mobility and access to care  
IUT\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

Healthcare access is one of the key challenges met by public policies, and a major issue in the current affairs in France especially. In this paper, we address healthcare access in its various facets (financial, geographical and social), through the study of unmet needs. By « unmet needs » one means identifying the need for care, but without actually going to the doctor. Reasons to this « renunciation to care » may be based on individual constraints (financial, temporal, social, and psychological), or related to limitations of the health care system (geographical accessibility and density). In order to be able to design appropriate public health policies, targeting populations with insufficient access to care, it is important to identify which limitations play the most on unmet needs, and how they lead to this situation.

To investigate this issue, we use the French Statistics on Income and Living Conditions (SILC). This survey is a very rich source of information, collecting data on income, social inclusion, housing conditions, labor, education and health. Using Logit models, we measure the impact of financial constraints (health coverage, income, and other indicators of insufficient resources), social inclusion (living conditions, work situation, and poor social relations), and healthcare system accessibility (through an indicator of adjustment between supply and demand for care at the city-level) on the decision of not going to the doctor.

### **Who owns and who uses farmland? Learning from the intersection of French Land Taxation data and Common Agricultural Policy data**

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G23-O4 Rural Issues  
MILC\_Room 410, August 30, 2019, 2:00 PM - 4:00 PM

In France, farms do not own all their land and largely lease them (61,7% in 2010, Courleux, 2011). Even if that situation is extreme in Europe (situation shared with Germany and Belgium), the rate of leased Utilized Agricultural Area (UAA) under the total UAA does not fall under 30% in this world region (Eurostat, 2013). Consequently, "who owns farmland ?" is a crucial question because: 1) a great part of farming is done under lease arrangements; 2) answering it might shed light on a lot of current issues for rural development (farmers retirement, farms enlargement, urban development, land grabbing...). There is a lack of knowledge in literature on this topic, probably due to the scarcity of available data. In France for example, the General Agricole Census which is made each decade, not allows to understand how is compounded property, how rights are distributed among owners, who are they, and how the different ownership types meet the different types of farms, agricultural productions, farming systems... Our proposition rests upon the principle of intersecting individual and spatialized data about owners (land taxation data) and about users (Common Agricultural Policy). That first test aims at overcoming technical GIS constraints and those related to data protection laws, at delimiting the limits of the method, and at establishing the analysis potential within the given constraints. We then apply the method on the Auvergne Region to illustrate the diagnosis elements it provides on the farmland property-use relationship.

## **Farmland, commons and property rights: An analysis of collective actions to protect land agricultural use**

**Dr. Christine Léger-bosch**<sup>1</sup>

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S20-S2 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

One currently witnesses the proliferation of collective actions based on land rights acquisition in order to protect and develop land agricultural use. They emerge from a variety of local actors among public sphere, civil society, and agricultural profession, which are involved in territorial and notably agricultural development. In this context, this article proposes a theoretical analysis of links between farmland, commons, and property rights. First, we look at the way that the literature on natural resources and commons deals with farmland, farming use, agricultural products, food and savoir-faire regarding their potential qualification as commons. We then examine the initiatives that we observe in France which aim at conserving a specific agricultural use by owning property rights, in order to understand what we could qualify as commons in this context. Second, we compare the way that the analysis of the different property rights is usually done about commons (Schlager and Ostrom, 1992), with the repartition of rights between their holders in the initiatives which aim at conserving a specific agricultural use by owning property rights on concerned land. In the discussion, we come back on the implications of the fact that farmland may appears as a common good, at the level of governance, actors and territorial development. We wonder how that changes the dynamics of conflicts and social innovation.

## **Combatting the economic impact of ageing through productivity growth: New insights from OECD regions**

Ms. Federica Daniele<sup>1</sup>, Mr. Taku Honiden<sup>1</sup>, **Mr. Alexander Lembcke**<sup>1</sup>

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S69-S1 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)

IUT\_Room 101, August 28, 2019, 11:00 AM - 1:00 PM

Recent evidence based on cross-country analysis suggests that an increase in capital investment – in particular the use of automation and robots – can attenuate the negative impact of ageing on income levels. This belief is however misplaced when it comes to ageing in OECD TL3 regions. First, labour productivity in regions where ageing, measured by the ratio of the population who are at least 50 years old to “young” people aged 20–49, increases 10 percent faster than the country average over the 2001-14 sample period are expected to have, on average, 2.1 percent lower productivity growth over the same period. The adverse impact on productivity is driven by predominantly urban TL3 regions, where labour productivity in the service sector is more severely impacted by demographic change. Additionally, ageing also has more direct consequences for GDP per capita growth that stem from the rise in the old dependency ratio. Enhanced productivity growth can offset the negative impact: this need for additional productivity growth is large compared to the actual growth rate experienced by most regions. Finally, ageing can have adverse consequence for redistribution: regions that aged faster also saw the fraction of income accruing to labour decline more dramatically.

## **Change in Artificial Land Use over time across European Cities: A rescaled radial perspective**

Dr. Paul Kilgarriff<sup>1</sup>, **Dr. Remi Lemoy**<sup>2</sup>, Prof. Geoffrey Caruso<sup>1</sup>

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S27-S1 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?  
MILC\_Room 309, August 28, 2019, 11:00 AM - 1:00 PM

Seen from a satellite, whether looking at land use in the daytime or at night lights, most cities have rather circular shapes, organised around a city centre. As a consequence, the distance to the centre is the first spatial differentiation to consider when studying the internal structure of cities. We conduct here a radial analysis of urban land change in order to understand what the recent changes in urbanisation are across Europe and how it relates to city size. We focus on the fundamental differentiation regarding urban land use: is it natural, like most land on the planet, or has it been artificialised for human uses. Using spatially detailed data from the EU Copernicus Urban Atlas, the profiles of artificial land use (ALU) are calculated and compared between two years, 2006 and 2012. Based on the homothety of urban forms found by Lemoy and Caruso (2018), a simple scaling law is used to compare cities after controlling for population and allows for the internal structure of cities, as determined by distance to the city centre, to be compared across years. One of the advantages of using a radial analysis, is the ability to examine the complex two-dimensional intra-urban structure of a city in a one-dimensional space. The land use profiles produced from the radial analysis represent ALU with respect to distance to the centre. We present evidence of tilting profiles of artificial land use which shows that given total population growth, urbanisation is relatively shrinking up to a rescaled distance of  $\sim 20$ km (using London as a reference) on average across Europe between 2006 and 2012. This contrasts with further expansion and increase in artificial land use, beyond a rescaled distance of  $\sim 20$ km. Grouping cities based on population, highlights that ALU in the largest cities (population  $> 1.5$  million) is on average flattening around the core but upward sloping at distances around the periphery. Cities with a population below 100,000 are upward sloping on average across all distances to the CBD. We explore these changes focusing on similarities between cities by disentangling the role of city size. Our findings have important implications relative to the sustainability of cities as this evidence is pointing to increasing urban sprawl and stagnant growth in urban centres across cities of all sizes. It also bears theoretical implications on the nature of sprawl and its scaling with city size.

## **Circularities and proximities within resource valuation systems: insights from territory-based initiatives in the forestry sector**

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S21-S1 Circularities and proximities: stakeholders, scales, ressources, UdL\_Room 106, August 28, 2019, 11:00 AM - 1:00 PM

Society's aspirations for new forms of consumption and practices go along with responsibility with regard to consumption and the eco-efficiency of products and production processes. Both societal expectations and new local development strategies aim at promoting economic and resource management at a territorial level – notably in terms of circuits shortening – as it has been extensively studied in the case of local agri-food systems. However, comparable expectations also raise within the forestry sector and remain scarcely documented.

We here seek to combine diverse approaches from the fields of territorial economics and circular economy in order to analyze the valuation processes of forest-wood resources. We notably focus on timber valuation through certification, labeling and local value chain creation in three French and Swiss regions. We propose to analyze the construction process of the various type of values for forest products within the field of the circular economy; i.e. the valuation of the resource rootedness from the production system and throughout the life-cycle of the product. To this end, we explore the valuation mechanisms in the case of localized forest-wood resources and we investigate the links between timber provenance and consumption made visible by labeling programs.

Labels, certifications, and short supply chain appear to be useful tools to strengthen the territorial coordination between different types of actors, which is often lacking in the forestry sector. Hence, we especially stress the role played by geographical and organized proximities between different actors and resources in constructing new forms of production and consumption systems through local timber valuation and short-circuits. In our view, the analysis of the valuation process in its broadest sense offers fertile prospects to enrich the short and proximity circuits approach. First, it is presented as a relevant means to promote production and consumption relocation, then it also turns out to be a pragmatic analytical framework to clarify the conditions under which resources can be sustainably valued.

### **The regional socio-economic impact of the 4th industrial revolution**

Prof. Roberta Capello<sup>1</sup>, [Prof. Camilla Lenzi](#)<sup>1</sup>

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S11-S2 The regional socio-economic impact of the 4th industrial revolution  
UdL\_Room 104, August 28, 2019, 4:30 PM - 6:00 PM

The regional socio-economic impact of the 4th industrial revolution

The so-called 4th industrial revolution (or Industry 4.0) is expected to lead societies and economies to adapt and to undertake pervasive, if not disruptive, transformations. These transformations, however, raise imperative alarms about the substitution effect of the new technologies with respect to labour and the risks of the so-called technological unemployment because of “functions – and tasks within functions – at risk of automation” (Goos et al., 2014; Nedelkoska and Quintini, 2018).

Differently from previous technological revolutions, however, the present one implies an increasing automation not only of routine tasks but also of non-routine ones, having thus the potential of transformative, if not, disruptive effects on the economy and the society through the impact on whole sets of sectors and occupations (Frey and Osborne, 2017).

The pervasiveness of such effects, therefore, requires a deep understanding of the mechanisms enabling to take advantage of the opportunities opened by the new technologies (i.e. the maximization of the economic benefits in terms of productivity and growth,) while minimizing the social costs that may arise in terms of restructuring of the labor market, possible unemployment growth and widening social and spatial inequalities.

The present paper offers a conceptual reflection on the territorial dimension of such processes, which has only recently received some attention (Autor and Dorn, 2013; OECD, 2018). By empirically reviewing the advancement of the penetration of technological transformations in European regions, the paper will discuss the territorial mechanisms favouring the emergence of the new technologies in specific places and will identify the territorial assets favouring the creation and diffusion of these technologies. These reflections will help framing the scientific and policy debate about the potential impact of the current technological revolution on jobs and productivity.

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### **Firm soundness and knowledge externalities: a comparative regional analysis**

Prof. Nadine Levratto<sup>1</sup>, Dr. Giuseppe Arcuri<sup>1</sup>, Dr. Aziza Garsaa<sup>2</sup>, Dr. Lara Abdel Fattah<sup>3</sup>

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G08-O3 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 4:30 PM - 6:00 PM

This paper investigates the role of regional context with regard to human capital and knowledge spillover effects in SMEs' financial soundness. Our empirical setting is based on the multilevel analysis for panel data, which better allows for the treatment of hierarchical data. It is applied to firms belonging to the industrial sector and operating in four European countries over the 2010–2015 period. We find that a combination of individual- and regional-level characteristics explain firm soundness more accurately than individual features alone. Furthermore, we find that a higher local educational level and knowledge spillover improve the firm soundness.

### **What type(s) of innovation(s) are produced in small cities? The case of agrifood SMEs from Occitanie (France)**

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G21-O3 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 4:30 PM - 6:00 PM

The literature classifies agrifood as a low R&D intensive sector. Empirical studies show that firms in this sector incorporate resources from other sectors as their main source of R&D. However, literature on innovation by SMEs underlines the difficulties to access to various resources for SMEs and particularly in a rural territory context. The objective of this article is to understand which types of innovation are produced by agrifood SMEs localized in small cities. The analysis is based on the main determinants of innovation in non-metropolitan area. We focus especially on demand-side factors (opportunities) and supply-side factors (resources, capacities of individuals, attitudes). We also propose a typology of innovation produced in these small cities (radical vs. incremental, open vs. closed, eco-innovation...). In order to achieve this objective, we propose case studies of 15 innovations developed by several agrifood SMEs located in five small cities in southwest of France. We conducted semi-directive interviews in 9 firms. The choice of a qualitative methodology stems from the fact that they are particularly well adapted to cases embedded in a singular context and thus linked in particular to the characteristics of its environment. The cities were selected according to the size and function criteria that characterize small cities. Located in these cities we chose innovative firms belonging to the agrifood sector. The interview guide included three sets of questions, part of which focused on the company's innovation practices. The treatment of the interviews is processed using

the Nvivo software. First, all the transcripts were coded. This coding was done in two stages thanks to a first coding phase a priori and a second phase of a posteriori coding. The first codification sought to identify verbatim relating to innovative practices. In a second step, the transcripts were coded again with a posteriori coding schemes to characterize each innovation. The exploratory study that emerges from the first coding phase allows us to confirm the specific nature of innovation processes in small cities, particularly in the agrifood sector, and to emphasize the crucial role of local business support policies, the personality of entrepreneurs and the capability to open the innovation process in order to access resources relying outside the boundaries of the firm.

### **Closer cities and distant space: a new geographical time-space map of Europe**

**Dr. Alain L'hostis**<sup>1</sup>

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S29-S1 Mapping flows, movements and cities networks at a European level  
MILC\_Room 309, August 28, 2019, 4:30 PM - 6:00 PM

We propose a geographical time-space model extending time-space relief cartography introduced by L'Hostis and Mathis (Mathis, Polombo, et L'Hostis 1993; L'Hostis 1996, 2009). The novelty of the model resides in the use of cones to describe the terrestrial surface instead of graph faces, and in the use of curves instead of broken segments for edges. The approach lies at the intersection of two domains involving graphic representation: cartography, and three dimensional computer graphics.

We implement the model on the European space. The European geographical time-space of the reference year 2014 is produced by the combination and the confrontation of the fast air transport system and of the 7.5 times slower road transport system. Slower, short range flights are represented as curved lines above the earth surface with longer length than the geodesic, in order to account for a slower speed. The very steep slope of cones expresses the relative difficulty of accessing terrestrial time-space, as well as the comparably extreme efficiency of long-range flights for moving between cities. Finally, the whole image proposes a coherent representation of the geographical time-space where fast city to city transport is combined with terrestrial transport systems that allow to reach any location but at a much slower speed.

### **Neighborhood effects in aggregate consumption: evidence from Brazil**

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G24-O3 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 4:30 PM - 6:00 PM

This paper studies neighborhood effects in consumption behavior using consumption survey data of households from the city of São Paulo, Brazil. The data has disaggregated information about the expenses of 3,120 households surveyed between 2008 and 2013. We also have access to the exact address of all families, which helped us to define more precisely household's peer group based on geographical proximity. To address endogeneity problems typical of peer effect studies due to the simultaneous presence of contextual and correlated effects, we use an adapted spatial autoregressive model. However, this type of model imposes specific network structure to the data (such as observation of intransitive triads, i.e., "neighbors of neighbors who is not neighbors themselves"). As an alternative identification strategy, we use an instrumental variable fixed effects approach. An ideal instrument for peer's consumption expenditure is exogenous variation in idiosyncratic expenditure shocks faced by peers. To overcome our lack of data about these shocks, we propose the use of an instrument created by exploiting variation in the excess demand for

public childcare across age cohorts within São Paulo's neighborhoods. The same instrument was used to find a positive effect of childcare use on maternal employment. We consider that the probability of obtaining a public daycare slot affects a household's consumption expenditure but does not directly affect their peers' consumption expenditure. The relevance of the research question for the correct evaluation of consumption intervention programs or of other policies that can have indirect spillover effects motivated many recent studies. Mainly due to data restriction, there still is space in the literature for contribution, which depends on the availability of new data and creative identification strategies to overcome the endogeneity problems. This study is unique for the Brazilian case, and the results contribute to the understanding of consumption network effects in less developed countries.

### **Spain's internal market integration**

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G08-O5 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 2:00 PM - 4:00 PM

The evaluation of the Single European Market requires a better knowledge of the level of integration both between and within the EU countries. While some institutions are pushing towards greater integration between the EU countries themselves, some others may be introducing -on purpose or collaterally- additional barriers to economic interaction within a given EU country. Several reports have denounced a high level of market fragmentation within Spain, mainly due to legal measures adopted by regions and municipalities. With the objective of deepening the integration of the internal market Spain approved the Law 20/2013 of 9 December on the Guarantee of Market Unity, which has been subject to criticism, mainly after the Spanish Constitutional court declared null one of the key provisions in June 2017. In this context, the aim of this paper is to study whether regional borders influence the pattern of commercial transactions across Spain. For this purpose, we depart from the border-effect literature, which offers a valuable basis for discussion, since it allows us to quantify the higher intensity of trade within a certain spatial unit in comparison with the intensity in other markets. Our empirical analysis covers a large time period (1995-2015), considering product specific flows between the Spanish regions (Nuts 2) and between them and the main countries. Our results suggest the presence of heterogeneity for the home-bias both at the spatial and sectoral level, finding in general high levels of integration, but also exceptions for certain regions and products.

### **EU structural funds and manufacturing productivity in the South of Italy (2007-2013)**

Mr Andrea Locatelli<sup>1</sup>, Mr. Guido De Blasio<sup>1</sup>, Dr. Giuseppe Albanese<sup>1</sup>

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S69-S1 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 28, 2019, 11:00 AM - 1:00 PM

In this paper we analyze the impact of EU cohesion funds on the TFP of Italian manufacturing firms between 2007 and 2013 (i.e., the years of the economic crisis). We focus in particular on the firms based in the regions of the South and Islands of the country (i.e., in the so-called "Mezzogiorno"). In order to do this, we use firm-level total factor productivity ("TFP") data from the work by Emanuele Ciani, Andrea Locatelli and Marcello Pagnini ("TFP differentials across Italian macro-regions: an analysis of manufacturing corporations between 1995 and 2015." Bank of Italy, Occasional papers no. 438, 2018), we aggregate it into a tfp measure at local labor market (LLM) level and we finally merge the productivity dataset with data on EU

cohesion policy support, available at the aggregate level from the OpenCoesione website (<https://opencoesione.gov.it/it/>). As in Ciani-Locatelli-Pagnini, we explore different estimates of total factor productivity based on alternative measures of the production inputs: in particular, tfp is estimated using, alternatively, the number of employees or the cost of labor for the labor input, and the fixed-asset values from balance sheet data or an estimate obtained with the perpetual inventory method for the capital input. In order to identify the causal effect of the EU cohesion funds on firms' productivity, we follow the strategy proposed by Emanuele Ciani and Guido De Blasio ("European structural funds during the crisis: evidence from Southern Italy." *IZA Journal of Labor Policy* 4.1 (2015): 20) using machine-learning techniques to select which controls to include in our regressions from a large set of time invariant local labor market characteristics interacted with linear and quadratic time trends. Our preliminary estimates seem to suggest that the impact of EU cohesion funds on tfp was at most modest, with significance varying depending on the choice of input data used to estimate tfp (which is coherent with the findings by Julia Bachtrögler and Christoph Hammer. "Who are the beneficiaries of the structural funds and the cohesion fund and how does the cohesion policy impact firm-level performance?." *OECD Working Papers ECO/WKP(2018)47*). In the rest of the analysis we propose to investigate in which way the funds have impacted on the dynamics of aggregate productivity via a change in the average productivity of firms vis-à-vis through a reallocation of production inputs in favor of more productive firms (in the spirit of the dynamic Olley-Pakes decomposition proposed by Marc Melitz and Sašo Polanec in "Dynamic Olley-Pakes productivity decomposition with entry and exit." *The Rand journal of economics* 46.2. 2015).

### **Understanding the variability of daily mobility from GPS data: exploratory analysis from a sample of Lyon university community**

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S16-S1 Students, University and the City: Location Choice and Mobility Behaviour  
IUT\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

### **The impact of the Centre West Fund (FCO, Brazil) on employment and income: evidence from Spatial Regression Discontinuity**

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G04-O4 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 2:00 PM - 4:00 PM

The 1988 Constitution of the Federative Republic of Brazil created the Constitutional Financing Funds (FCF) to reduce regional inequalities through financing productive activities at subsidized rates in the North, Northeast and Centre West regions of the country. These funds receive three percent of the total taxes on income and industrialized products, with the Northeast region accounting for 60% of this amount and the remainder divided equally between the Centre west and the North. Low human development indicators of these regions in relation to the South and Southeast of the country, associated to the precariousness of infrastructure and distance of the great economic centers, result into less competitiveness and greater difficulty to develop productive activities in these regions. The proposal to subsidize productive activities for these regions is based on the recognition of these obstacles to their development. FCF these obstacles,

increasing competitiveness, lowering the cost of capital, attracting investments and allowing rural producers and local entrepreneurs to expand their activities.

Three decades have passed since the creation of FCF and several studies have evaluated their impacts from a regional perspective. This paper seeks to contribute to the literature through the application of the Spatial Regression Discontinuity model to evaluate the effectiveness of the FCF to Centre West region (FCO) in terms of generating employment and formal income at the municipal scale. The study exploits the discontinuity the geopolitical frontier that separates the Centre West and South and Southeast regions of the country as identification strategy.

In general, our results suggest that municipalities that received FCO funds witnessed fewer job growth than those who did not. Furthermore, there is some evidence that FCO led to increases on income of Centre West municipalities.

## The Immediate Effects of the Brexit-Referendum on Regional Growth in the UK

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G10-O3 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 11:00 AM - 1:00 PM

How have economic growth rates in the regions of the UK (defined at NUTS1 and NUTS2 levels) been affected by the outcome of the Brexit referendum?

Proponents of Brexit have repeatedly argued that the negative consequences of the referendum outcome as predicted by most economists have been overstated. They refer to the fact that UK growth remained at levels comparable to its pre-referendum pace. Many economists, however, mentioned that post-referendum economic growth in other G7 countries has been considerably more rapid than in the UK. To resolve this disagreement, one should come up with a useful and plausible "reference scenario".

Born et al. (2017) and Springford (2019) have adapted the Synthetic Control Method (SCM, introduced by Abadie and Gardeazabal, 2003) to this end. They compare the post-referendum growth performance of the UK economy to the performance of a "lookalike". This lookalike consists of a linear combination of other countries (that were not hit by the referendum shock). A regression-based algorithm ensures that the lookalike had a growth performance very similar to the UK before the referendum, and/or had a very similar performance in terms of determinants of growth. According to Springford (2019), the UK economy was about 2.3% smaller in September 2018 than its lookalike.

The economic performance of UK regions is very heterogeneous, as stressed by McCann (2016), and several researchers are afraid that the consequences of Brexit will mainly hurt already lagging regions (Chen et al., 2018). To see whether economic uncertainty and lowered business and consumer confidence have affected UK regions differently, we construct SCM-lookalikes for these regions and study the differences between the regional GDP growth rates of the regions and these lookalikes for the one year and a half after the referendum. The data are from Eurostat.

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Born, B., G. Muller, M. Schularick and P. Sedlacek (2017), "The Economic Consequences of the Brexit Vote", CESifo Working Paper 6780, Munich.

Chen, W., B. Los, P. McCann, R. Ortega-Argiles, M. Thissen and F. van Oort (2018), "The Continental Divide? Economic Exposure to Brexit in Regions and Countries on Both Sides of The Channel", *PiRS* 97(1), 25-54.

McCann, P. (2016), *The UK Regional–National Economic Problem: Geography, Globalisation and Governance*. Routledge.

Springford, J. (2019), "The Cost of Brexit to September 2018", CER Insight, London.

## **Unfair play: The politics of Turkey's central government spending under AKP rule.**

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S22-S2 The politics of local and regional development  
IUT\_Room 303, August 28, 2019, 2:00 PM - 4:00 PM

A significant body of research has explored how developmental public goods are allocated for strategic political reasons, beyond considerations of efficiency and equity. Most studies assume that the logic driving government distribution is similar across goods. In line with current research on clientelism and distributive politics, this paper relaxes this assumption. It explores patterns of central government spending on 10 distinct economic and social categories in Turkey from 2003 through 2014, when the ruling Justice and Development Party (AKP) gained and consolidated its hold on power. Regression results demonstrate how the central government systematically exploited the distribution of economic and social budget expenditures for strategic purposes, e.g. by targeting AKP strongholds with significantly higher amounts of government expenditure on education and defense, while providing provinces where the electoral battleground was closer with more locally, non-excludable, and irreversible goods. Provincial strongholds of the main opposition party, the Republican People's Party (CHP), were the biggest losers, receiving the lowest amount of spending from the central government across most budget subcategories.

## **Hosting to skim. Organized crime and the reception of asylum seekers in Italy.**

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G17-O4 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 11:00 AM - 1:00 PM

Political crises and conflicts are pushing millions of asylum seekers towards the borders of Europe. This paper draws on the case of Italy, and investigates the shadow impact of organized crime in influencing the geography of reception centres, with the likely objective of skimming margins from the public resources devoted to reception activities. We gather data on the location of reception centres and on the presence of mafia across Italian municipalities. We exploit exogenous variation at municipal level to instrument mafia intensity, and provide evidence of how the presence of mafia affects both the likelihood of hosting a reception centre and the number of asylum seekers hosted. We then assemble an innovative dataset on public procurement for the set-up and management of reception centres. Statistical evidence and in-depth expert interviews suggest that the presence of organized crime is correlated to the use of direct procurement procedures over open calls.

## **The Impact of Mining Activities on Regional Development – Evidence from Latin America in a Spatial Econometric Framework**

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S35-S1 Recent Advances in Spatial Econometrics and Big Data  
MILC\_Room 310, August 29, 2019, 9:00 AM - 10:30 AM

The implications of metal ore extraction are an important topic in academic and policy debates. This work investigates whether mining activities relate to the economic performance of mining regions and their surrounding areas. Usually, sub-national impact assessments of mining activities are conducted in the form of qualitative in-field case studies and focus on a smaller sample of mining properties and regions. In contrast, we employ a Spatial Durbin Model (SDM) with heteroskedastic errors to provide a flexible econometric framework to measure the impact of natural resource extraction. The study exploits a panel of 32 Mexican, 24 Peruvian and 16 Chilean regions over the period 2008 - 2015 and, in doing so, relates mine-specific data on extraction intensity to regional economic impacts. The results suggest that mining intensity does not significantly affect regional economic growth in both short-run and medium-run growth models. Popular arguments of the mining industry that the extractive sector would trigger positive impulses for regional economic development cannot be verified. Rather, the findings support narratives that mining regions do not benefit from their wealth in natural resources due to low labour intensity, loose links to local suppliers and profit outflows.

### **Knowledge economy, firm networks and connectivity: methodological challenges in analyzing relational dynamics in space and time**

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<sup>1</sup>Lucerne University of Applied Sciences and Arts, Luzern, Switzerland, <sup>2</sup>Technical University of Munich, Munich, Germany

S02-S2 Digital and spatial transformation: structures and relations in the knowledge economy  
IUT\_Room 404, August 29, 2019, 9:00 AM - 10:30 AM

Knowledge has become the main source of creating value in advanced economies, so goes a widespread agreement in academic literature. Based on the requirements for knowledge creation, firms in the knowledge economy usually develop their location network as part of their overall business strategy. The result is a multi-faceted location network on different spatial scales that significantly affects – and in turn is shaped by – the knowledge economy. The interplay of localized factors – like qualified workforce – and non-localized variables determine the position of firms within wider networks of value creation. Comparing firm networks and their locations twenty years ago and now, strategic changes are apparent. The Dotcom crisis, the financial crisis and the exploding digital transformation intuitively make clear the following: (1) The subject of analysis – networks of knowledge-intensive firms – changes its nature and character over time, due to strategic reorientation and routinely adaption of their spatialised value chains. (2) The methodology for to track and analyse inter-temporal changes of interlocking firm networks and localised value chains has to reconsidered beyond standard panel data or time-series considerations. New forms of knowledge creation generate new forms of the spatial organisation of knowledge processes. Information and telecommunication technologies do not substitute for geographical proximity. We witness a complementary relationship for the generation of firm-based knowledge: critical core processes focus on face-to-face interaction, while digital technologies support the standard activities of knowledge creation. The research question is: what role does spatial and relational proximity play against the backdrop of significant changes in creating knowledge and organising localised value chains? In the scientific literature, there are various methodological approaches to investigate these changes from a relational perspective. There are qualitative approaches, which look at the changes from the micro perspective of companies. There are approaches that measure structural and network dynamics at the level of cities or regions with quantitative methods, sometimes with the help of elaborate multivariate statistics. There are methods that primarily focus on intra-firm location networks, others on extra-firm networks along the value chain. Based on the functional logic of the knowledge economy and its requirement for knowledge creation, this paper evaluates the methodological challenges in analysing relational dynamics of firm networks in space and time. The paper argues for methodological triangulation that combines quantitative and qualitative methods, and raises

concerns against the use of computations that are so elaborate that their results escape plausible interpretation.

### **FDI Spillovers and Geographical Proximity - Evidence from Denmark**

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G08-O3 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 4:30 PM - 6:00 PM

Lately Denmark, like many other countries, has focused on attracting and sustaining foreign direct investments (FDI) because FDI is seen as an important source to knowledge, growth and jobs. However, studies have found both negative and positive effects of FDIs on domestic firms' productivity. Where previous studies have investigated the vertical and horizontal spillover effects related to the sector, we analyze geographical proximity and investigate how proximity to FDIs influence the total factor productivity (TFP) spillovers to domestic firms. We do this by employing a unique dataset on FDIs including Greenfield Investments (GIs) and Mergers and Acquisitions (M&As) in Denmark and a full population of geo coded micro-level panel data for Danish firms. We find that it is important to take proximity into account when estimating the relation between GIs and M&As on domestic firms' TFP. Also, we find positive significant correlations for vertical spillovers from both GIs and M&As on domestic firms' TFP. For horizontal spillovers from M&As, we see a negative relationship between fulltime employees in M&As and domestic firms' TFP, which could indicate a negative competition effect.

### **Do Cultural and Creative Industries Cluster? Case study of Catalonia**

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G04-O9 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 2:00 PM - 4:00 PM

Anyone in the world would like to visit hub cities, whether it is Barcelona, Paris, Milan, London, New York or places as such. Those cities attract individuals and firms, leading to the formation of clusters in wide range of sectors: financial or other services, manufacturing, research and development, software, and many others. Clusters do benefit the economy; one general statement that has been concluded over the last decades, leading researchers to figure out the spatial distribution of firms, the natural determinants and the possibility for induced ones in response to the advantages and positive spin-offs that clustering in various industries provides. The investigation of the spatial distribution of firms has thus always been of interest for economists and policy makers. Research in this area starts from identifying certain spatial patterns to providing a range of rationalizations on their determinants or implications, which helps uncovering what is hindered beyond the development of cities among other assorted economic and social phenomena. Such studies are still preliminary when it comes to Cultural & Creative industries, the field in which the interest in has been growing in the last decade. An opening argument states that firms in CCIs locate in metropolitan areas with urban preference or smaller regions that specialize in a certain relevant sector. The purpose of this study is to identify the spatial distribution preference and clustering, if any, of firms in CCIs from a general perspective and then at industry level, in Catalonia. Subsequently, determinants of the spatial patterns and possible clusters uncovered will be analyzed. Probable determinants of such clusters can be



access to other firms on industry level, consumer demand, agglomeration economies, or human capital. The study uses firms' data from Mercantile Register (SABI), and makes use of SatScan method for clusters' identification. As well, count-data (CD) models will be used in order to identify location determinants of CCI firms.

### **Cultural and Creative Industries as Drivers of Employment Growth at Local Level**

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S69-S1 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 28, 2019, 11:00 AM - 1:00 PM

Our contribution to the ongoing discussion on the importance of cultural and creative industries (CCIs) for regional economic development is threefold. First, we investigate the impact of CCIs' specialization on total employment growth at municipality-level in Catalonia, using data from 2001 and 2011. This explicitly inspects the issues of agglomeration economies from an empirical point of view. In Catalonia, to the best of our knowledge, there is no study which investigates this issue on a local-level. This study is original in terms of the data used in the Catalan case, and the nature of the relationship under study. This provides an insight on the role of CCIs in the wider economy by focusing on the employment growth, which is a major concern for policymakers amid uncertain labor market conditions and the need for policymaking intervention. The Catalan case is of utmost interest in view that CCIs are of noticeable importance and, consequently, they are potentially capable to help local economies. We focus on what is happening in small and medium peripheral Catalan cities in addition to the capital, Barcelona, trying to identify and quantify how selected cultural activities / infrastructures located there are contributing to economic growth of their respective areas. Second, the study also marks out the spillovers of CCIs concentration to other economic activities as services, manufacturing, construction and agriculture, which further clarifies the nature and degree of influence of CCIs on diversified sectors that are major sub-components in the economy. Third, we direct the discussion on CCIs to the economic geography dimension by taking into account a methodological input using spatial econometric tools to account for spatial dependency and related concerns. This paper builds on data from Catalan Statistical Institute (IDESCAT) and Spanish Statistical Institute (INE) and uses econometric estimates and spatial analysis techniques to explore the impact on employment along with the respective spatial dynamics. Our first results corroborate our expectations in terms of cultural and creative industries as growth drivers for the whole economy, based on the methodology and data we use. Nevertheless, additional work is to be done in order to get consistent and complete results. The specialization in CCIs has a positive impact on total employment growth for Catalan municipalities between 2001 and 2011. It is noticeable that these results lead to some important policy implications. Roughly, they point to the relevance of public investments and public promotion of cultural and creative industries, however we question the capabilities/dynamism generated by these industries in terms of spatial spillover effects.

### **A Multi-disciplinary Synthesis of the Literature on Elderly Mobility: Where we Stand and What to Expect from Public Transport**

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S07-S1 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers  
IUT\_Room 103, August 30, 2019, 9:00 AM - 10:30 AM

The demographic projections of the population in the OECD countries indicate that the share of the old people will reach 25.1% in 2050 from 7.7% in 1950. There are a wide number of challenges to be faced by the policy makers ranging from increased healthcare expenditures and pensions to consumer goods and services for the elderly. Following the guidelines of the World Health Organization, active ageing has been substituted from the approach of healthy ageing and searches for promotion and realization through the Global Network of Age-friendly Cities and Communities. Out-of-home mobility constitutes an integrable part of healthy ageing and can be facilitated by the design of the transport system.

The issues evolving around elderly mobility are usually developed within specific disciplines, without any integration with other approaches. Starting on this premise, on the best of our knowledge, this is the first attempt to bring together the findings from transport economics, urban planning, medicine, geriatrics, and sociology. The aim of this study is to investigate the current state of knowledge about the effects of out-of-home mobility on later age and the capacity of the public transport to provide any of these effects to the older people. The multidisciplinary synthesis reveals that there is consensus between the disciplines studied for the outstanding position of mobility in later life. Since it affects physical and mental health, many diseases that are inextricable part of ageing can be prevented or postponed. Furthermore, it is recognized that the elderly who are more mobile may feel independent, can easier participate in community life and enjoy higher well-being and better quality of life. In the same time, public transport facilitates accessibility to important activities and services, and supports social participation which can be valuable both for the individual and society.

The paper highlights that the effects of public transport on older people's life are not much studied and further empirical and theoretical contributions are needed. The existing evidence from the studied disciplines uncovers that special attention should be given in keeping elderly mobile for as long as possible. Moreover, it shows the plurality of the definitions used by the researchers to describe mobility and the lack of inclusive theoretical foundations.

### **Does economic complexity matter for job polarization? Evidence from the Italian local labor market.**

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G08-O2 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 2:00 PM - 4:00 PM

During the last decades, a process of radical transformation has changed labor markets in developed countries, challenging the process of occupational upgrading as well as the nature of jobs (Autor 2015; Goos et al. 2009). More specifically, employment structure polarized, with a wane of routine occupations accompanied by a simultaneous growth of abstract and manual occupations (the non-routine ones). This process, defined as job polarization, implies a substantial change in the demand for task on the labor market. The most accredited explanation related employment polarization with the diffusion of computer-based technology that allows to replace workers in the routine jobs (Goos et al. 2014).

On the other hand, globalization and international trade could reflect alternative forces able to challenge the evolution in labor demand, both at national and local level. In this perspective, the role of economic specialization as an engine of economic performance has been extensively debated in the empirical research, giving particular relevance to the economic complexity index (ECI) (Hausmann and Hidalgo, 2011). This measure, considering the knowledge intensity of exported products, is useful to predict the economic growth at the local level.

However, with few exceptions, job polarization has been investigated at the national level, while the empirical evidence for several European countries seem to suggest a relevant heterogeneity in the degree of employment polarization both across industries and local areas.

In order to fill this gap, this paper investigates to what the economic complexity index matters in capturing the relevant heterogeneity in the degree of job polarization across the local labor market in Italy. Focusing on the period after the Great Recession (2009-2018), we examine if there is any nexus between economic complexity and the job polarization in the Italian provinces. The aim of this research is to understand whether more competitive provinces experienced a stronger polarization in their employment structure. The lack of previous literature on this topic and the Italian context make for an interesting addition to existing studies on this topic. Matching data at the province level (NUTS 3) for the exports (ISTAT- COEWEB) and the Italian labor force survey (ILFS), we exploit a pseudo-panel approach in order to account for potential unobserved heterogeneity at the provincial level. To further disentangle the influence of surrounding provinces, we also adopt a spatial approach that allows capturing spatial interdependencies across local labor market and reflects a novelty in the literature on job polarization.

## Digitalization and Scientific Publishing

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S53-S1 Breaking out of the Bubble - Teaching and Dissemination of Regional Science  
UdL\_Room 105, August 30, 2019, 2:00 PM - 4:00 PM

In this paper we discuss the impact digitalization has had on scientific publishing. In recent decades digitalization has revolutionized publishing in general and scientific publishing across three main domains. First, digitalization changed the production process of scientific output. Nowadays, researchers use digital instruments in the research analysis as well as in the final product - usually a "paper" - that they submit for publishing. Second, digitalization changed the publishing industry and the business models of established publishing companies. Today, the whole production process of the publishing industry is digital. But while physical books, magazines, and newspapers are still important end products, scientific publications has become increasingly available in digital form. This augmented availability has led to increased commercial benefits through greater geographical reach, publishing speed and significant cost reductions, as well as facilitating entrance to the market and creation of new services.

The third aspect is the development of new forms of scientific output. Until today, also in the digital world most scientific output is published in the form of papers and books. As was the case with the invention of the printing press in the 15th century, where printers sought to make their books look like handwritten, scientific publishing today mimics the physical products from the past. This, however, limits the ways how knowledge can be communicated. Digital media allow for much more illustrative and much more interactive ways of communication, offering a unique opportunity to communicate scientific knowledge in a more rapid, engaging and easy way. Utilizing these options, however, requires the development of tools and standards and is much more challenging than converting a book or article into digital format.

In our paper, we will briefly discuss the first two aspects, but mainly concentrate on the third. We will describe recent attempts in this field and discuss their relation to the already established instruments of digital scientific publishing. We will discuss the pros and cons of such standards and developments and speculate about the impact they may have on scientific publishing and the publishing industry.

## **Attract firms and living the economic activity zones. New factors of territorial attractiveness: moving toward lived-in EAZs**

**Prof. Muriel Maillfert<sup>1</sup>, Assistant Professor Catherine Mercier-Suissa<sup>2</sup>, Assistant Professor Céline Rivat<sup>3</sup>**

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S26-S1 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 11:00 AM - 1:00 PM

A review of the literature focusing on the multiple territorial pull factors of EAZs shows that attractiveness is a multifaceted concept which can be measured through various means. While economic attractiveness puts the focus on businesses, the concept of residential attractiveness focuses on the inhabitants of a given geographic zone. In both cases, users of the zone – including business executives, employees, and residents – are receptive to the specific pull factors of the zone. Some factors may be user-specific. For instance, businesses may decide to migrate based on land costs, corporate tax regimes, and whether there is local demand for their production, while residents will pay particular attention to real estate prices, as well as to the quality of life and of infrastructure. However, all zone users will be receptive to new pull factors related to sustainable development.

Today, an increasing number of EAZs welcome a mix of individuals, companies, and their employees. To attract as diverse a population as possible, the developers of EAZs invest to create new co-working and co-living spaces, both cultural and commercial. The increased focus on sustainable development is an opportunity for local stakeholders to re-think territorial development in a collaborative way.

We conducted a study of five EAZs east of Lyon. Albeit in close geographic proximity, these zones are sufficiently different from one another to allow us to derive useful comparisons of their various characteristics. Our comparative study enabled us to assess these zones based on the same criterias related to their economic and social attractiveness. This study will serve as a useful decision-making tool to support local authorities and developers of EAZs.

## **Regional effects of minimum wage policy in Poland**

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G05-O5 Regional and Urban Labour Markets

IUT\_Room 210, August 29, 2019, 4:30 PM - 6:00 PM

The aim of the paper is to analyse the regional effects of minimum wage policy in Poland. The number of research on the impact of minimum wage on employment and unemployment is enormous. Majority of the results points to some small and negative impact of minimum wage growth on employment (for revision see Neumark and Wascher, 2007 and Kuddo et al., 2015). The eventual disemployment effects are found for workers with relatively low professional qualifications and low labour market experience. Uneven distribution of workers with these characteristics across regions may result in the differences of the impact of minimum wage changes in regional labour markets. This problem may arise especially in the countries where minimum wage policy is established at the national level and the differences between regions are significant. In this paper we took Poland as an example of such a country. We use individual data from the Structure of Earnings Survey in Poland, published biannually by Central Statistical Office. The research period covers the years 2008-2016.

In the first step we analyse differences in the share of workers earning not more than 105% of minimum wages across regions and the structure of minimum wage earners by both their characteristics and characteristics of their employers. In the second step we identify regions which may be particularly affected by minimum wage changes (low-wage regions). In the third step we check the asymmetry of the effects of minimum wage on employment across regions. We verify whether in low-wage regions, the national minimum wage is too high when compared to local productivity and therefore harmful to employment prospects. To account for possible spillover effects we add spatial dependencies to panel model. We estimated both SAR and SDM models with contiguity matrix.

The results indicate that in the whole sample the impact of minimum wage is not significant for employment. However in few regions the parameter is negative and significant. These are the least developed, Eastern regions of Poland with low productivity and low average wage level. Moreover we found that relatively high minimum wage in these regions seems to increase the employment among the prime-aged workers. Our results support the OECD recommendations for Poland: “Refrain from increasing the minimum-to-average wage ratio. Consider differentiating the minimum wage across regions depending on local labor market conditions” (OECD, 2016).

### **Typology of urban vacant land**

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G04-R1 Regional and Urban Development  
IUT\_Room 207, August 29, 2019, 2:00 PM - 4:00 PM

A neglected area in the field of spatial economy is special type of space which is so-called urban vacant land or “empty space”. Though by definition, the physical space is infinitely large and has no boundaries, the environment of human life (including the cities) is divided into smaller fragments of space taking into account various criteria of division, such as functions, types of land use, space perception of people, etc. Selected fragments are assigned certain features, the distribution and mutual relations of which allow for the interpretation of many socio-economic phenomena (including those taking place in the city). Nowadays, the deficit of free space is increasingly recognized. It is pointed that out for space saving reasonable space management (in accordance with the policy of sustainable development) are crucial because space is treated as a limited good. In relation to the above, the purpose of the article is to identify a special type of space which is the so-called urban vacant land or “empty space”.

Most studies have only focused on development space in the city to the detriment of urban vacant land. Meanwhile, according to American research saw, that type of space covers on average as much as 15% of space in 70 cities in the USA. The experience of many cities in highly developed countries suggests that urban vacant land is a significant part of the urban landscape that can be re-used as part of local development policy. Although they can be both a problem and potential for the city, few scientists take care of them. Knowledge about the genesis of their formation and characteristics is an important element of building urban policy. The paper focused on the typology of urban vacant land conducted on the basis of literature studies and own observations.

### **Economic sanctions and knowledge flows: Evidence from EU–Russian scientific collaboration during the Ukraine crisis**

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In response to the Ukraine crisis the EU has imposed restrictive measures against the Russian Federation from 2014 onward including travel bans, asset freezes and economic sanctions, which the Russian Federation has met with equal actions. The sanctions have been prolonged and likely to be extended further until the situation is resolved. This has, according to recent studies, led to a significant decline in exports between the EU and Russia slowing down GDP and employment growth in both sides of the dispute (EU and Russia). When it comes to the impacts of the sanctions on spatial knowledge flows in terms of international EU–Russia cooperation, earlier papers on this topic have postulated that -while the sanctions might have an indirect negative impact in the long run, the contemporary political tensions have not yet influenced scientific collaboration directly. Additionally, the overall increase in publishing outputs by Russian scholars indicates the emergence of a real domestic funding contribution to science in Russia, which can potentially signal a decreased need for collaboration in EU-funded research projects. However, the issue has remained unexplored empirically. Thus, we do not know whether these sanctions have an effect on the scientific collaboration between EU and Russian researchers or not. The issue is explored here empirically through recent data on EU–Russian scientific collaboration (via data on scientific co-publishing) and difference-in-difference analysis, where EU countries in Central and Eastern Europe serve as a comparison group to map the evolution of cross-country scientific collaboration over time. Our empirical analysis may thus shed new light on the role of political factors on the extent spatial knowledge flows as an essential research field in Regional Science.

### **Beyond School trips and Acceptable trip distances for Children**

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S16-S2 Students, University and the City: Location Choice and Mobility Behaviour  
IUT\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

Active transport and its significant association with health benefits, built environment and reducing congestion & carbon emissions has gained a lot of attention over the last decade. In accordance, a separate stream of literature, has specifically looked into the importance of active travel on the daily commuting, activity participation and escorting decisions in case of school trips of children. Very few studies have explored the nature of trips taken by children other than school purpose and distances travelled by them from their place of residence. This has resulted in a paucity of information on children travel behavior. The authors address these limitations by undertaking a study that examines the acceptable trip distance for active and motorized modes in case of non-school trips as commute distance plays a major role in the promotion of active modes. The second objective is to explore the influence of socio-demographic variables, out of home activity participation, and escorting person on the choice of mode (active vs motorized). Data was collected using a questionnaire survey in March & April 2018 inside the IIT Delhi, India region. 263 households were approached out of which, 211 respondents obliged to fill the form. After screening out the incomplete survey forms and forms with no out-of-home activity participation other than school, 174 samples were considered for further analysis. The acceptable trip distance for non-school trips is then determined by fitting the cumulative plot of observed distance with various distributions. A Kolmogorov-Smirnov (KS) test goodness of fit measure indicates Log-Normal distribution as the best fit in both cases. A value of 459 m and 2637 m was obtained for active and motorized mode respectively. In addition, a binary logit model framework was undertaken to study the choice between active and motorized modes for the purpose of participating in out-of-home non-school activities. It is observed that families with 4 or more

members have a higher probability of driving their child rather than using active modes. Children of married scholars are more likely to undertake active trips than the kids of faculties and staffs. Families with 2 or more school going children, are more likely to prefer active commuting in case of non-school trips which is in contrast to the general finding that presence of young children increases the likelihood of motorized trips. These relevant findings may have a broader implication in the framing of policies that regulate and promote sustainable modes.

### **Opportunity entrepreneurs and innovative ventures: are they really the fittest to survive?**

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G21-O2 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 2:00 PM - 4:00 PM

Previous literature about entrepreneurship and human capital theory suggests that opportunity entrepreneurs are often individuals with a larger stock of knowledge, labour market experience and expertise. Thus, they are more willing to succeed as business owners. On the other hand, individuals that start a new venture for the sake of pursuing a business idea, in case of lower than expected monetary returns, might easily disengage from the start-up venture and choose a wage-earning job. Similarly, innovation is often described as a favourable factor for firm survival, but in some cases, the newness of the products could arise resistance to acceptance by the consumer, uncertainty and risk of failure. Most of the previous studies positively correlate opportunity self-employment and innovative behaviour with longer firm survival, but the results are ambiguous in some cases. Hence, this research aims to understand the differences in start-up survival, distinguishing between individuals that start a business in order to pursue an opportunity and individuals that are involved in a new venture because of necessity reasons. Additionally, self-employment durations of individuals involved in innovative start-ups and in ventures that imitate existing businesses are compared. Furthermore, this study investigates other crucial individual and contextual features for firm survival, e.g. previous start-up experience and team size. The data set used is the result of a harmonisation of five international data sets about start-up ventures located in the USA, China, Sweden and Australia. All five projects started with screening a sample of representative adults to identify those active in business creation. The first screening started in 1998, the last in 2009. Preliminary results show that opportunity entrepreneurs are actually the fittest to survive, whereas results related to innovative start-up survival are mixed. From a policy maker's perspective, it should be a notable issue whether to support necessity or opportunity, imitative or innovative entrepreneurs through start-up tutoring or incubators. Moreover, understanding other survival features could improve the economic efficacy of entrepreneurial training programs. Finally, knowing more about firm survival might represent a useful tool for financial investors, banks or venture capitalists who want to calculate expected returns on their investment.

### **What do we know about poverty? Perceptions vs. Reality**

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G15-O4 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 29, 2019, 2:00 PM - 4:00 PM

Relieving poverty is one of the important and complicated tasks in every society. Is the public aware of poverty-related data? Do people know who is considered as poor? Public awareness to the issue of poverty

is crucial for pushing policy-makers to act. Using a survey-based experiment with a representative sample of 751 Israelis, we found significant gaps between perceptions and reality regarding several measures of poverty. In fact, in most of the poverty indicators, 80% of the public estimations were inaccurate. We found, however, that 60% of the people understand that as the issue of poverty negatively affects the entire society. We showed that perceptions of the poverty and perceptions regarding the reasons for poverty affect people's views about the need for poverty-reducing policy measures.

### **Growth, heterogeneous technological interdependence, and spatial externalities: Theory and Evidence**

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G11-O2 Spatial Econometrics

MILC\_Room 310, August 29, 2019, 2:00 PM - 4:00 PM

We present a growth model with interdependencies in the heterogeneous technological progress, physical capital and stock of knowledge that yields a growth-initial equation that can be taken to the data. We then use data on EU-NUTS2 regions and a correlated random effects specification to estimate the resulting spatial Durbin dynamic panel model with spatially weighted individual effects. QML estimates support our model against simpler alternatives that impose a homogeneous technology and limit the sources of spatial externalities. Likewise, our results indicate that rich regions tend to have higher "unobserved productivity" and are likely to stay rich because of the strong time and spatial dependence of the GDP per capita. Poor regions, on the other hand, tend to enjoy "unobserved productivity" spillovers but are likely to stay poor unless they increase their saving rates.

### **What makes a city "smart"? Evidence from Belgian municipalities**

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S02-S1 Digital and spatial transformation: structures and relations in the knowledge economy

IUT\_Room 402, August 28, 2019, 4:30 PM - 6:00 PM

Despite the considerable amount of resources devoted to "smart city" initiatives, little is known about what makes a city more or less "smart". We use survey data from Belgian municipalities to analyse the determinants of the "smartness of a city", as measured by the assessment made by well-informed local public officials. We find that only the economic and social-human capital factors are (positively) correlated with our "smartness" measure. This casts doubts on the effective role played by other factors, such as governance- participation and transportation, identified as critical in the literature (as well as by local governments and other stakeholders).

### **The effect of the 2012 Spanish labour law reform on regional employment**

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G05-O1 Regional and Urban Labour Markets

IUT\_Room 210, August 28, 2019, 11:00 AM - 1:00 PM



Spain is characterized as a country with pronounced recessions and significant volatility in unemployment rates. From 1998 to 2001, the average unemployment rate fell dramatically. Then, after a stable rate around 10% until 2004, there was detected another fall until 2007, but during the period known as the Great Recession the rate has followed a very steep slope, reaching levels of almost 25%.

In this paper, we examine the effect on regional employment of the Spanish labour law reform passed in 2012 to change substantial issues of the labour market. Among other things, the reform reduced dismissal cost and the bargaining power of labour unions.

We use data from 50 Spanish provinces (NUTS III regions) from 1985 to 2018, considering the registered number of employees and the employment and unemployment rates. By using panel data models with fixed effects, linear and quadratic region-specific time trends and other relevant control variables at the regional level, our results reveal that the reform had a significant effect on regional employment.

### **Cultural Dilemmas in Migration**

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G17-O2 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 4:30 PM - 6:00 PM

This paper studies the role of cultural differences on the choice of migrants' destination country. In order to examine this issue, we ran two separate analysis considering on the data concerning international migration flow from the Organization for Economic Cooperation and Development statistics and data on international migration stock obtained from the Integrated Public Use Microdata Series International. Cultural differences between the home and host-countries are measured for observable characteristics that reveal fertility, marriage, and employment cultures among others. Results show a negative and statistically significant relationship between cultural differences and migration flow. This relationship varies when the physical distance is considered pointing to a non-statistically significant effect of cultural differences for migration flow among bordering (neighboring) countries. Interestingly enough, after considering migrant's heterogeneity in the analysis of migration stock, we detected that cultural differences matter in the location decision depending on whether individuals reside in bordering or non-bordering countries. Our findings suggest that cultural differences play a role in the destination country choice while trying to mitigate the cultural dilemma in migration.

### **Marginal Structural Models in the presence of multiple treatments, with application to the analysis of export promotion programs**

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S51-S1 Counterfactual methods for regional policy evaluation: Policies for firms  
IUT\_Room 304, August 30, 2019, 9:00 AM - 10:30 AM

Marginal structural models (MSMs) enjoy wide popularity with methodological and applied scholars. Under appropriate sequential ignorability assumptions that address the issue of dynamic confounding, MSMs allows to analyze longitudinal, observational studies characterized by repeated treatment over time and to recover the causal effects of the treatment sequences of interest. Surprisingly, the approach based on MSM has not yet been generalized to settings with longitudinal, multivalued treatments, e.g. with multiple

discrete or even continuous treatments. Our paper aims to start to fill the gap. We generalize the assumptions needed to identify causal effects in longitudinal settings characterized by the possibility of the repeated intake of multiple discrete treatments. We adopt a MSM approach and we show how the effects of interest can be estimated using inverse-probability-of-treatment weighting. We apply our approach to the analysis of a real Italian case study of export promotion policy. The program consists of the provision of multiple services and aids by specialized agencies, including consultancy, support to the participation in international fairs and business-to-business meetings, of which firms can take advantage either simultaneously or at different moments in time.

### **Stated and revealed preference for ageing in place in Milan**

Dr. Mina Akhavan<sup>1</sup>, Prof. Ilaria Mariotti<sup>1</sup>, Prof. Aleid Brouwer<sup>2</sup>

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S07-S2 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers  
IUT\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

One of most pressing challenges related to contemporary urban living is certainly the progressive ageing of population at the global level, and particularly in high-income countries. The ageing of the population causes structural problems for e.g. the finance of care or ageing in place. The current generation of people turning old is healthier, more highly educated and more active than any previous generation. The profile of elders, their background and preferences play a key role in shaping their decisions in terms of mobility. One of the main aspects improving the quality of life of elderly is “mobility”, which encompasses different dimensions of urban life that include housing, transportation, work-related activities and social interactions. Indeed, mobility is better able to capture the relentless changes that accompany urban life. Mobility refers to the ensemble of decisions related to moving from one place to another with the help of transport network and services.

Within this context, the present paper aims at investigating the mobility habits and preferences of elderly people living in the city of Milan, in order to ageing in place. Currently Milan has no comprehensive strategy for facing the challenges of the ageing of its population. Besides, little is known about the transportation patterns of elderly residents of Milan, their actual use of public transport and the perceived barrier to access.

goes certainly in the direction of improving the movement of older people through the city. To reach the aim of the present paper, the results of a survey addressed to elderly living in the city of Milan in the years 2018-2019 are presented in three neighbourhoods characterized by a large share of people aged over 65. These results proxy the stated preferences of the interviews, while the revealed preferences come from an in-depth analysis of the neighbourhood in terms of services supply, Local public transport accessibility, quality of public spaces, etc.

### **The Location of Coworking Spaces in Urban vs. Peripheral Areas**

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S08-S2 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 2:00 PM - 4:00 PM

With a rising globalization of the economy and society, the ICT revolution, the new industrial revolution and the makers’ movement, and the current economic downturn, working is becoming less dependent on distance, location and time. These are some of the reasons that have fostered the development and

diffusion of new workspaces like coworking spaces. Although this is a new phenomenon, scholars from varied disciplines – geography, sociology, urban planning, business, management, etc.- are showing interest in studying different aspects related to their spatial characteristics, socio-economics patterns, and effects on the urban context. Contributing to the existing literature, this paper aims at exploring the location determinants of coworking spaces, an issue that has been neglected by the literature. By focusing on the 549 CS located in the 103 Italian provinces Italy at the year 2018, the paper aims to investigate the location factors pulling the coworking and the attractiveness of large cities as well as of peripheral and inner areas. The results of the descriptive statistics and econometric analysis underline that this is mainly a urban phenomenon because coworking are knowledge intensive places for creative people. Specifically, the NUTS3 provinces showing higher urbanisation economies, innovation, and an higher share of skilled labour are privilege locations. Besides, it is discussed whether coworking spaces may contribute in fostering the development of peripheral and Inner Areas in Italy.

### **Planning and Sustainable Urban Mobility Plans: Parallel Orbits or Incompatible Paths?**

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G16-O4 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 4:30 PM - 6:00 PM

Sustainable Urban Mobility Plans are strategic plans aimed at meeting urban mobility needs for a better quality of life. They claim to “build” on existing planning practices and taking into account the principles of integration, participation and evaluation. With the term "existing planning practices", it is obviously meant the existing urban planning system, which expresses the basic way of implementing urban planning policy, is the most basic tool for the regulation of the urban, peri-urban and extra-urban space at the level of settlement, city or urban planning complex and aims at the rational organization of the space based on the principles of urban planning science. Consequently, the interaction between urban planning and sustainable urban mobility plans is obvious and self-evident, to the extent that it is now necessary to promote combined and integrated design and planning practices. However, to what extent “combined and integrated design and planning practices” are satisfied in Greece and in a city like Larissa, which has its own urban plot and planning system for many years now and is implementing its own Sustainable Urban Mobility Plan now?

The paper that follows analyzes the basic directions of the Larissa’s Urban Mobility Plan and aims at developing a first kind of assessment in relation to whether the plan has achieved its main objectives and how it interacts with the existing urban planning plot and system. First results show emphasis is given to “alternative and more environmentally friendly kinds of circulation” and the emergence of the "neighborhood" as the main spatial scale of reference. The plan tries to manage the traffic issue of the city center, while it doesn’t interact with the existing urban planning. In addition, it doesn’t take into account the static but also the dynamic spatial dimension of land uses. However, the networking of important functions - service providers is not a priority (public services, education, health sectors) and, as a general conclusion, the plan doesn’t serve the principle of integration neither guarantees the universal access to basic destinations and services. The paper argues that the plan could be improved by introducing a "bottom-up" design process, incorporating elements of the new and emerging agenda of "urban problems" (e.g. resilience targets) and moving away from the unification of "embellishment" and face the real city. Those should be the priorities of the so called “combined and integrated design and planning practices”, which are now missing.

## **How Innovative is the Agricultural Sector in OECD Countries?: Evidence from Patent Records at Country Level**

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G21-O1 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 9:00 AM - 10:30 AM

Agriculture has been the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. Modern agronomy, plant breeding, agrochemicals such as pesticides and fertilizers, and technological developments have sharply increased yields from cultivation. Selective breeding and modern practices in animal husbandry have similarly increased the output of meat. Genetically modified organisms are widely used, although they are banned in several countries. Over one-third of the world's workers are employed in agriculture, second only to the service sector, although the number of agricultural workers in developed countries has decreased significantly over the past several centuries. In the past century, agriculture has been characterized by increased productivity, the substitution of synthetic fertilizers and pesticides for labor, water pollution, and farm subsidies. Innovation is very important in the agricultural sector. For example the growth of organic farming has renewed research in alternative technologies such as integrated pest management, selective breeding, and controlled-environment agriculture, while recent mainstream technological developments include genetically modified food.

In that context, the paper studies and measures the output of agricultural innovation in the OECD area. Results are based on patent records and their use as indicators of innovation output. The paper is structured as follows: Section one is the introductory part of the paper, where the theoretical and empirical framework of innovation in relation to competitiveness, development and growth is discussed. Section two comprises of two parts: The first part defines the term agricultural innovation; the second provides arguments for and against the use of patent data for the measurement of sustainable (eco) innovation output, ending up to the conclusion that patent data may be considered and accepted to be good and reliable indicators of innovation output. Section three describes the data that has been used and the methodology that has been followed for this study, which relies on defining "agricultural" patents and searching for them, focusing on the relevant patent codes. Section four describes the research results. Section five synthesizes and further discusses the results also tracing for changes in trends and behaviour in both the entrance or exit of "agricultural" kinds of innovation and their relative importance. The paper also provides evidence of the high or low concentration of innovation output in relation to their respective technological and industrial sectors. Finally, section six presents the main conclusions of the paper.

## **Behaviour of wine demand in Portuguese regions**

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G23-O1 Rural Issues  
MILC\_Room 410, August 29, 2019, 2:00 PM - 4:00 PM

The wine markets have, in general, specific behaviours which makes it difficult to analyse them, namely in our days, where there are many information and many factors to take into account. In fact, the wine markets are very diverse and sometimes it is difficult to predict the reaction from the consumption to endogenous and exogenous shocks. In these cases, often, the most problematic is the definition of adjusted prices. In this way, the main objective of this work is to analyse the sales and the prices of still wine from the Portuguese wine regions, considering data from the Portuguese Wine Institute (IVV), since the first quarter of 2014 until the first quarter of 2017. On the other hand, taking into account data envelopment analysis, they were obtained optimized prices based on approaches of technical efficiency. The results show that considering the domestic demand structure for the Portuguese still wine (in the recent years), 4 euros/litre in the Alentejo region is adjusted because the great volume of wine sold. The same happens for the Algarve region taking into account the reduced dimension of the sales (12.5 euros per litre). However, the remain Portuguese wine regions need to improve significantly their prices to become more efficient in the use of the resources available, because are, in general, smaller regions with more reduced volume of sales. The case that deserves more concerns is the Portuguese region Beiras (original prices of 1.961 euros). The contexts verified, for example, for the regions Douro and Minho are less preoccupant, considering some proximity between the original and the optimized prices. There is, indeed, some work to do, namely, in the smaller regions to improve the quality and, consequently, improve the prices. The specialization and the customization taking advantage from the new market tendencies could be an interesting approach for these Portuguese regions with great endogenous richness.

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### **Contributions from the wine sector for the rural development**

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G23-O2 Rural Issues

MILC\_Room 410, August 29, 2019, 4:30 PM - 6:00 PM

Promote sustainable rural development is a great challenge for the several stakeholders, namely for the policymakers and the public institutions. In fact, in the rural zones it is not, often, easy, namely, to create employment and promote dynamic in the economic activities. In these contexts, the agricultural sector and, specifically, the wine productions have a determinant contribution for the rural development in several parts of the world. In this context with the research here presented it is intended to survey the literature about the contributions from the wine sector for the rural development. For that, it was analysed several documents obtained from the Web of Science (for the topics: wine sector; rural development) and explored through the VOSviewer software. Of stressing, in the relationships between the wine sector and the rural development, the importance of aspects as those related with the wine tourism, the innovation, the landscape preservation, the sustainability, the new technologies and the terroir.

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## **How Does Internet Access Affect Regional Convergence?**

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G07-O6 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 2:00 PM - 4:00 PM

The ever-growing availability of internet access, especially from narrowband to broadband, shapes individuals and households behaviour as well as socio-economic performance of communities. Individuals and firms can access to a larger market to satisfy their needs. Moreover, thanks to the net, ideas and culture spread freely among them, increasing human capital, social cohesion and labour productivity. This is expected to boost growth process and to reduce inequality, both in communities and individuals. Empirical studies stress the positive effect of internet access in fostering local convergence and national performance. The nexus is circular: if internet access fosters the growth process, hence increasing the standard of living, more people and firms will be induced to adopt such a technology, triggering a virtuous multiplicative effect.

Nonetheless such a circular nexus could operate in the opposite direction as well. Individuals who cannot access to the net could be stacked in a “poverty trap” that increases inequality and slow the convergence process.

Obviously, much part of the story is related to investments in internet coverage and its costs, and this adds a policy implication to the question. If internet availability produces positive spill-overs, then national and local governments should implement policy actions targeted to make internet access as large and cheap as possible. The Italian strategy for next generation access network, approved by the Council of Ministers in March 2015, aims at developing a high-speed access network to maximise the take-up of an infrastructure able to guarantee services above 100 Mbps and to ensure the availability of services above 30 Mbps for all by 2020. Italy adopted a national state aid scheme to support ultra-broadband in areas where market failure is present.

But even when internet access is available, individuals could be able not to exploit it. According to the Italian National Institute for Statistics (Istat) in 2016, about 57% of Italian households did not use internet because of a lack in their skills. This opens to another way at perpetuating inequality among individuals and communities and calls for another policy action: the digital education.

The aim of the paper is to manage the questions in a whole view. By starting from a simple micro-founded model of individual behaviour in choosing whether adopt internet - given social, economic and infrastructural constraints – we investigate empirically such a choice by means of Italian data at Nuts2 and the effect on the convergence process among Italian regions.

## **Resilience, specialization, human capital and spatial analysis. An unexplored relationship**

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S40-S4 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 29, 2019, 9:00 AM - 10:30 AM

The 2007 economic shock has affected Italian regions strongly, nevertheless with remarkable differences among them. The aim of the paper is not to analyses the economic impact of the crisis on regions but to

investigate the determinant of regional resilience using a holistic approach and by exploring regional specialization, economic structure and human capital. Moreover, a spatial analysis will be carried out in order to explore the relationships among regions. Resilience is not only a regional attribute but can be influenced by spill-over effects. Following this approach resilience emerges also as result of spatial effects. Among spatial units there may be a spatial dependence i.e. a functional relationship between what happens at one point in space and what happens elsewhere. Spatial effects such as spatial heterogeneity and spatial dependence should be taken into consideration in order to include the spatial spill-over into the analysis and exploring resilience not only as a regional attribute but also as a consequence of geographic localization. This contribution innovatively contributes to the existing literature in three ways. First, according to Martin et al., (2016), resistance and recovery are part of an evolving dynamic and changes occur slowly. Choices made in the past affect the resilience ability today. In exploring Italian regional resistance and recoverability, we highlight not only the post-shock impacts but also the situation before the shock. In doing so we will investigate the Italian regional structure and the regional specialization. Moreover, we will use the Multi-Factor Partitioning (MFP) (Ray et al., 2012, Gardiner et al., 2013) to decompose the regional employment change and to investigate how the different components influence the resilience. Second, using literature regarding the social resilience, we will investigate the relationship between human capital and resilience looking at the determinant of resilience in a holistic way. Finally, a spatial analysis will be taken into consideration. The interactions among spatial units and resilience are still unexplored in literature.

### **The enforcement role of the Spanish Labour Inspectorate on workplace accidents: a spatial dynamic panel approach**

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G05-O1 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 11:00 AM - 1:00 PM

The economic cost of workplace accidents is not taken into account in the social policy debate often. However, these costs are very high. Krueger and Meyer (2002) show that during the second half of the nineties the amount of the workers' compensation was twice than unemployment benefits. In Spain, some reports of the most important Trade Unions also focus on this topic (CC.OO., 2004). The analysis of regulation related to workplace accidents has a long tradition in North America. In 1970, the United States Congress passed the Occupational Safety and Health Act, which established the Occupational Safety and Health Administration (OSHA). In Spain, the Labour and Social Security Inspectorate (Inspección de Trabajo y Seguridad Social, ITSS) is a public service which is responsible for carrying out surveillance of the social rules compliance and for enforcing the responsibilities in case of offense or breach. The aim of this paper is to analyze whether the ITSS, as the organization responsible for enforcing labour rules in the prevention of occupational hazards, is effective in carrying out its purpose and reducing such occupational hazards. In this study, we apply a spatial dynamic model based on Roodman's proposal (Roodman, 2009) and use data from the Spanish Labour Force Survey, the Spanish Statistics on Workplace Accidents and the annual reports developed by the ITSS. The units of analysis are the 50 Spanish provinces (NUTS-3) and the period of time covered goes from 1994 to 2014. The results obtained do not show an unambiguous sign for the inspection variables. First, we detect a negative labour inspectorate effect that reduces the workplace accident rate, that is, the ITSS intervention could become an effective tool in reducing it. However, the number of inspectors presents the opposite effect, a fact that could be supported by a claim reporting effect: increased surveillance encourages workers to report some accidents that, otherwise, would not have registered. Additionally, we implement an analysis that highlights the relevance of the spatial dimension

(Beloti et al., 2017; Shehata and Mickaieil 2013). Previously, Bande and López-Mourelo (2014) had found some evidence in this favor, but this work constitutes a step forward focusing on the development and potential of the most recent econometric techniques.

### **Technology foresight for advanced manufacturing in the Sheffield City Region: an analysis of economic strategy and policy debates**

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G07-O6 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 2:00 PM - 4:00 PM

Technology foresight is a critical component in the development of industrial strategy. It offers a promising new lens to address the challenge of regional growth. It holds the potential to help regions identify, absorb and exploit a variety of technological innovations that can drive transformation across UK manufacturing: save time, increase productivity, reduce costs, and respond more effectively to consumer demands. For this to become a reality a number of challenges need to be overcome. In regions that rely significantly on the industrial manufacturing sector, a high degree of specialisation and the existence of historically determined path dependencies may induce lock-ins or inhibit the ability to recognise and apply technological trends. Frequently the meaning of technological trends is unclear and results in the establishment of strategic regional development goals that are too generic. This often results in a disconnection between industrial strategy making and the technology foresight process. In order to address this disconnection, stakeholder participation, networking and the preparation of decisions concerning the future of regions is an increasingly essential dimension of managing technology foresight activities.

In various regional contexts, manufacturing is a sector topping the policy agenda but there remains a substantive opportunity to understand how technological innovation can be accessed and exploited. Focusing on the United Kingdom's Sheffield City Region as a manufacturing hub of the 'Northern Powerhouse', this paper addresses this issue with a technology foresight lens, and it explores how technology foresight is articulated within national and regional policy.

Indeed, future-oriented research methods require a comprehensive appraisal of regions' strategic policy, and a thorough understanding of existing structures, so as to adequately define visions that can be exploited by decision-makers.

The analysis presented in this paper is based on an extensive review of relevant regional documents undertaken for the ESRC-funded Regional Technology Foresight project ([www.regiotechforesight.org](http://www.regiotechforesight.org)). Following a critical discourse analysis approach to identify how discursive practices have both enabling and impeding implications and effects, the paper illuminates the role of strategy discourse, notably the goals and values carried in regional technology foresight strategy texts.

### **The effect over time of Related and Unrelated Variety on Types of Regional Innovation in Brazil**

Dra Suelene Mascarini<sup>1</sup>, Dr Renato Garcia<sup>2</sup>, Ms Ariana Costa<sup>3</sup>, Dr Veneziano Araujo<sup>4</sup>, Dr Emerson Gomes<sup>5</sup>

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G07-R1 Innovation and Regional Development, UdL\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM



See extended abstract online.

### **Can we apply Cost-Benefit Analysis to sport events ? A methodological survey**

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G04-O5 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 4:30 PM - 6:00 PM

Sport events have long been seen as an opportunity to foster local development. This view has however been more and more challenged in the last decades calling for independent and rigorous assessments. In this context CBA, together with CGE, have been increasingly used to provide policy guidance and may tomorrow challenge the dominant position that Input-Output has held for long in this area. More than twenty events have now been assessed with this approach, although many of them in documents that were subject only to limited peer review (this includes some master thesis, or some consultancy reports) and a more limited number of papers in scientific journals. Yet no systematic and critical analysis of this area of application is available. The purpose of the proposed contribution is to partly fill in this gap. It will review existing publication and investigate their possible limitations. Interestingly, one notes that these works are usually not published in evaluation journals but rather, whenever published in scientific papers, in sport economics reviews. This reinforces the need of critical examination by the profession.

The proposed contribution is to our best knowledge the first review of this type.

On the whole, existing studies provide a negative evaluation of sport and cultural events with a large majority of negative Net Present Value for host communities.

These studies, however, are moderately convincing. We find that many studies violate well established recommendations in the field of CBA (like computation of cost/benefit ratios without univocal distinction of benefit increase vs cost decrease), and are unclear about important underlying assumptions (like the definition of the relevant territory), and are discussible by many aspects (for instance considering visitors expenditures as a benefit, without consideration of the corresponding production costs).

We suggest guidelines for such studies, hoping that they can provide support in this incipient field, and contribute to establish the credibility of benefit-cost analysis in this area as well.

### **The unemployment turn in Cost Benefit Analysis : opening the Pandora box**

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S52-S1 Joint SBCA ERSA Session on Evaluation  
IUT\_Room 408, August 30, 2019, 9:00 AM - 10:30 AM

Abstract :

- We explore the reasons for the limited consideration of employment impacts in most CBA until the last decade.
- We look at the several modelling techniques that can be used for inclusion of employment in CBA.
- We examine a few applications in Italy, mostly related to road or sea transport investment. These examples show a large heterogeneity in the way practitioners proceed.
- Our analysis suggests that the issue is not handled consistently. The use of shadow costs did not reach the objective of insuring more consistent and homogenous assessment. We observe that shadow

costs are usually applied axiomatically, are not aligned with the methodological features stated in guidelines.

- Unless more discipline is not implemented, introducing employment benefits in the Cost Benefit Evaluation can increase the errors and thus decrease the relevance of the recommendation resulting from CBA.

## **Determinants of International Conference Venues in Japanese Prefectures**

**Dr. Kiyoshi Matsubara**<sup>1</sup>

<sup>1</sup>*Nihon University, Tokyo, Japan*

S42-S1 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 11:00 AM - 1:00 PM

In this paper, we attempt to show what is effective to attract more international conferences to a region, using Japanese prefectural data of 1998-2017. This article follows the methodology of Falk and Hagsten (2018), performing regression analysis on data of 943 European cities from 2012 to 2016 and showing that city size and other factors (culture, openness, etc.) work to attract international conferences. Our regression analysis shows mixed results of prefectural population, depending on model specification with prefecture/year dummies. Other independent variables, including tourism resources, international organizations, accommodation, and transportation infrastructure, also have mixed results, whose statistical significance changes with model specification. Therefore more analysis on the current independent variables as well as policy measures by governments is needed.

## **On the Return of the EU's Regional Financial Support. Difference-in-differences Estimator and Some Empirical Evidences at NUTS 3 Level**

**Dr. Kristina Matuzeviciute**<sup>1</sup>, Dr. Mindaugas Butkus<sup>1</sup>, Dr. Alma Maciulyte-Sniukiene<sup>1</sup>, Prof. Diana Cibulskiene<sup>1</sup>

<sup>1</sup>*Siauliai University, Institute of Regional Development, Siauliai, LITHUANIA*

S51-S3 Counterfactual methods for regional policy evaluation: Policies for regions and cities  
IUT\_Room 304, August 30, 2019, 2:00 PM - 4:00 PM

Assessing the return on the EU's regional financial support, the research examines whether financial support promotes economic growth, increases labour productivity, and creates new jobs. Since 2000, these issues have been widely discussed in scientific studies aiming to ascertain if the cost of regional policy is justified, and whether the return on Structural Funds (SF) investments is positive. However, scientific studies rarely discuss the effect of financial support in the light of the regional disparities despite the fact that cohesion is the ultimate goal of the EU's regional policy, and mainly test the proposed evaluation models at NUTS 2 or at country level. Moreover, previous contributions in this field show the importance of factors that foster or hinder, i.e. condition the effect of financial support, thus raising the question of heterogeneous effects across regions. In the light of these facts, this article aims to discuss a model that would supplement a new strand of literature based on quasi-experimental approach and be able to assess the return on the EU's regional financial support capturing heterogeneous financial support effects on regional disparities. Empirical application is based on NUTS 3 level data over 2000-2006 programming period and estimation of the effects on the dynamics of per capita GDP disparities between SF beneficiaries and control group. Estimations provide an evidence that EU's regional financial support diminishes disparities between financial beneficiaries and unsupported regions and that significance and size of the positive effect are highly conditioned on quality of institutions in the region.

## Evaluating the impact of aging population on labor market

Dr. Kristina Matuzeviciute<sup>1</sup>, Dr. Alma Maciulyte-Sniukiene<sup>2</sup>, Dr. Dovile Rupliene<sup>1</sup>

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G17-O1 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 2:00 PM - 4:00 PM

**Purpose** – aging population causes a number of economic and social problems related with changes in labour market. In this regard, this study aims to evaluate the effect of population aging on EU member states labour market main indicator – labour force, which has direct impact on economic growth potential. **Research methodology** – in order to achieve the aim of the study we applied: i) trend analysis for estimates and presentation population and labour force changes over period, and ii) decomposition method for examine effects of population and labour force structure by age changes on size of labour force.

**Findings** – countries can be divided into three groups: (1) countries where the volume of labour force has increased both as a result of population growth and an increase in activity rates; (2) countries with an increasing labour force, but declining population; (3) countries with a declining labour force due to depopulation.

**Research limitations** – research results support theoretical approach that population aging may negatively affect labour market, but do not provide ways for the solving of this problem and this is the direction for future research.

**Practical implications** – the obtained results are useful for labour market (including pension reforms) policy makers.

**Originality/Value** – the study contributes scientific literature by extend understanding of the aging population problems that occur in labour market and fill the gap in research of aging population impact on labour market using EU member state data.

## Determinants of the entrepreneurial resilience (or non-resilience) in the Spanish Regions: Place specific effects versus neighbourhood effects.

Dra. Begoña Cueto<sup>1</sup>, Dr. Matías Mayor<sup>1</sup>, Dra. Patricia Suárez<sup>1</sup>

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G05-O2 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 2:00 PM - 4:00 PM

In the definition of economic resilience, entrepreneurial activity can play a key role (Martin, 2012; Martin & Sunley, 2015). Therefore, the analysis of determinants of entrepreneurial resilience can help to understand why some regions can retain a higher level of entrepreneurial activity than others. At the same time, recent studies (Fotopoulos & Storey, 2016; Fritsch & Wyrwich, 2014) point out that entrepreneurship rates have risen in the last years, however, the regional differences remain constant over the time. On one hand, this finding implies the existence of a persistence spatial heterogeneity, and on the other hand, the reduced impact of entrepreneurial spatial spillovers. The aim of this research is to analyse the determinants of entrepreneurial resilience of the Spanish regions focusing on this spatial context. First, we discuss how the expected regional behaviour should be computed, second, we analyse the contribution of the local related and unrelated variety and industrial specialization together with the impact of these characteristics in the neighbouring regions using a spatial econometric model. Third, we consider in which measure a lower improvement in terms of accessibility is acting as a dead weight reducing the recovery capacity.

## **An evaluation of start-up subsidies. Does the territory matter?**

Dra. Begoña Cueto<sup>1</sup>, Dr. Matías Mayor<sup>1</sup>, Dra. Patricia Suárez<sup>1</sup>

<sup>1</sup>Universidad de Oviedo, Oviedo, Spain

S19-S1 Regional Entrepreneurship Policy  
UdL\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

During recent years, self-employment has been promoted as a means of reducing unemployment and increasing entrepreneurship. One of the main programmes is the one known as the 'Flat rate for self-employed workers', launched in February 2013, which comprises a reduction in the minimum contribution to the Social Security System. In this paper, our aim is to evaluate the second phase of the flat rate, when the programme is in force for all new self-employed workers older than 30 who had not been self-employed during the previous five years. To do this, we use the Continuous Working Lives Sample (CWLS) and a differences-in-differences approach. Our results show that the programme has no effect in terms of survival rates. However, there are interesting regional differences that can help to develop policies according to the regional context.

## **A Spatial Price Hedonic Analysis for AirBnB accommodations**

Mr David Boto<sup>1</sup>, Dr. Matías Mayor<sup>1</sup>, Mr. PABLO DE LA VEGA SUÁREZ<sup>2</sup>

<sup>1</sup>University Of Oviedo, , Spain, <sup>2</sup>Complutense University of Madrid, , Spain

S05-S1 Sharing economy and accommodation industry in urban and non urban environment  
IUT\_Room 402, August 28, 2019, 11:00 AM - 1:00 PM

The appearance of the sharing economy has disrupted the traditional business practices. In the hospitality industry, peer-to-peer accommodations are becoming increasingly demanded by travellers, representing an expanding share of the market. Originally, P2P accommodation services started as a way by which regular people rented spare bedrooms or properties to exploit the underuse capital. However, nowadays a non-negligible share of hosts behaves closer to business intermediaries and tends to fix prices efficiently. Thus, price fixing is a very important tool to understand the market. Previous literature has widely studied the price determinants for the P2P accommodations, focusing on properties' characteristics. Our aim is to extend the literature by estimating a hedonic price model including not only the listings' characteristics but also the effect of the accessibility to various sightseeing spots. Also, we use a spatial econometric model to control for the spatial heterogeneity that may affect price fixing by a spatial competition on prices among the close properties. To do so, we use a public-access database of AirBnB's in the central district of Madrid for the second trimester of 2017. To the best of our knowledge this is the first paper that jointly analyse spatial heterogeneity, accessibility and properties' characteristics on price for the AirBnB market.

## **Commoning the seeds: knowledge networks and the dynamics of territorial development**

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S20-S2 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?  
UdL\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

The development of peasant seed communities is a recent trend in European countries, bringing together professional farmers, city gardeners and other enlightened amateurs, as well as creating new interfaces between cities and rural areas. In this article, we analyze the role of knowledge governance in a leading French peer-to-peer peasant seed network as a major driver for reintroducing and maintaining cultivated agrobiodiversity and on-farm seed conservation of traditional and landrace varieties. Empirical data are based on a detailed network formalization and analysis of the governance rules. Our results highlight the various models of collective action and the organizational tradeoffs faced by opting out of peasant seed activities and in recreating a shared collective knowledge base about the benefits of maintaining cultivated agrobiodiversity. A number of policy implications and challenges are discussed regarding restrictive seed laws and the need for a more radical reorientation of R&D systems prioritizing alternative participatory driven models of grassroots innovation.

### **The role of digital tools in increasing stakeholder participation in the city branding**

**Ms Maia Maziashvili<sup>1</sup>**, Mrs. Izabela Kowalik<sup>1</sup>

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G01-R1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 11:00 AM - 1:00 PM

**Purpose** – The aim of this paper is to explore the role of digital technologies in the strategic city brand management process. In particular, it analyzes whether the digital tools are increasing internal stakeholders engagement in city branding practices or just substituting offline branding. The study aims to contribute to the understanding how the strategic city brand management components are affected by stakeholders' engagement through digital technologies.

**Design/methodology/approach** – The first part of the paper is based on theoretical insights drawn from the combination of the literature on place branding, marketing and governance. The second part of study includes qualitative research results based on the individual semi structured interviews among city officials responsible for city branding. In sum, 12 in-depth interviews were carried out in 6 cities. The research is characterized by an innovative approach to sample selection, which includes participation of officials from Georgian and Polish cities (3 cities from Poland, 3 cities from Georgia), and enables comparison of two country contexts (with the background of developed and emerging economy). For this purpose the content analysis of interviews' transcripts and MaxQDa software version PLUS have been applied.

**Findings** -The results of this study indicate the positive effects of using digital tools in increasing stakeholder engagement and strengthening long term relations between city authorities and stakeholders. Moreover, It has identified two groups of stakeholders -residents and business sector representatives-as the main groups, willing to establish long term relationships with the city government. The findings revealed which components of strategic city brand management are affected by stakeholders involvement through digital technologies. In this case, Polish cities show more advanced results, where stakeholder participation via digital tools is applied in the brand conceptualization, communication and brand evaluation processes. In Georgia, stakeholders are involved via digital tools in the process of communication and promotion of the place brand. The research identifies which digital tools are used at each participation stage for both stakeholder groups (residents and business) and how the participation in this channel is conducted.

**Contribution**- the study contributes to place branding research concerning the understanding of the role of digital tools in increasing the effectiveness of strategic city brand management process. The practical implications of the research concern the improvement of the local authorities' relations with internal stakeholders and enhancing the active involvement of stakeholders in the place branding practices.

## **Comparative city cluster dynamics**

**Prof. Miruna Mazurencu Marinescu Pele**<sup>1</sup>, Karima Kourtiti<sup>2</sup>, Associate Professor Daniel Traian Pele<sup>3</sup>, Professor Peter Nijkamp<sup>4</sup>

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G(01+02)-O1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 4:30 PM - 6:00 PM

The purpose of this study is to analyse city clustering dynamics by addressing the influence of city safeness indicators on the overall city performance of a selection of 40 world cities. We have performed a quantitative analysis on a combined data-set on cities, taking into consideration the Global Power City Index (GPCI Index ) and its dimensions and the Safe City Index and its components for the years 2015 and 2017. This is a step forward from previous research that only took into consideration city performance embedded in GDP Index. It appears that the city safeness is able to explain a great deal of city variability performance. For example, in 2017 Paris left the best performing cluster formed by Paris, London and New York in 2015, most likely due to the terrorist attacks that took place. Multidimensional approach on city performance that also includes safeness is nowadays preferable when analysing city clustering dynamics. The statistical analysis has been performed by using Python software, whose results are fully reproducible.

## **Tourism and economic resilience in Mediterranean islands: a comparison with mainland regions**

**Prof. Fabio Mazzola**<sup>1</sup>, Dr. Pietro Pizzuto<sup>1</sup>, Prof. Giovanni Ruggieri<sup>1</sup>

<sup>1</sup>*University of Palermo, Palermo, ITALY*

G18-O4 Tourism and Culture  
IUT\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

In recent years local development has been more and more dependent from tourism sector especially in fragile contexts, such as islands, and in coastal cities which combine urban/cultural attractiveness with the increased demand for leisure.

The potential role of tourism on economic growth has been widely analysed in international literature. From this evidence, it is expected that tourism will play a compulsory role in leading growth and bringing economic opportunities especially for small island destinations, which require a special consideration with respect to the mainland regions. These territories, indeed, sometimes appear to be like as independent states in the regional system. Tourism often is the only policy option for these contexts to overcome the structural gaps imposed by the small size of their economies and the physical constraints which cause several disadvantages in terms of transport connection and supply destination. The resilience of the tourism sector may have played a crucial role in affecting the vulnerability and the recovery of regions from the recent economic crisis.

By using a panel of 84 Mediterranean regions for the period 2000-2014, we investigate the potential contribution of the tourism sector to economic growth and assess its role in affecting regional resilience to the recent crisis. Our aim is threefold. First, starting from the identification of a set of strategic territorial elements which affect economic growth, we analyze the relationship between the local characteristics of the tourism industry (in terms of both supply and demand as well as accessibility) and regional growth. Second, we control for regional characteristics by contrasting islands vis-à-vis mainland regions. Third, we test whether the crisis has changed the role of some specific determinants of growth.

We find that the tourism sector appears to be relevant for regional growth in the case of islands. However, its positive effects on regional growth, also after the outbreak of the Great Recession, seem to be not sufficient to offset the negative effects of the economic downturn since we detect a larger negative impact of the crisis on islands' economic performances respect to mainland regions. Nevertheless, specific characteristics seem to be crucial in determining the ability of insular economies to react to shocks and recover from downturns.

### **Shedding light or casting shadows? Relations between primate cities and regional second cities in multicentric metropolitan regions**

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G04-O13 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 2:00 PM - 4:00 PM

Processes of spatial expansion and scaling-up of activity patterns and transportation patterns have led to the rise of multicentric metropolitan regions, in which multiple once distinct and relatively independent cities have become part and parcel of larger multicentric metropolitan entities. Such multicentric regions are even considered the dominant mode of urbanisation in many parts of the world, not least in the more densely populated parts of Europe. The Randstad Holland (Amsterdam – Rotterdam – The Hague – Utrecht and many smaller cities) is a classic example of such a multicentric region: wherever you are in this region, you are within the sphere of influence of at least a dozen different cities. The relative equal size and importance of the cities even makes it even polycentric. Building on the extensive literature on polycentric urban regions, we will contribute by exploring and characterising the position of secondary cities in such regions.

It has been suggested that this position can be captured with the concepts of 'borrowed size' and 'agglomeration shadows'. Borrowed size occurs when a regional second city possesses urban functions and/or performance levels normally associated with larger cities. This is enabled either to proximity to larger cities or through interaction in networks between cities, as these networks serve as a substitute for the benefits of agglomeration. In contrast, the concept of agglomeration shadows denotes that second cities close to primate cities may also experience a negative effect, related to competition for urban functions, households and jobs.

When and under which conditions a city 'borrows size' and when it will predominantly experience an 'agglomeration shadow' is unclear.

The aim of this paper is exactly to explore why some second cities in metropolitan areas manage to capitalise on their position close to a larger primate city ('borrow size'), whereas others predominantly experience negative effects (lie in the 'agglomeration shadow'). Factors such as socio-demographic composition, urban development pathways, sectoral profile, accessibility, network embeddedness (levels of integration/interaction) and/or relatedness to larger cities are likely to play a role. In this contribution we will classify the position of all cities and towns in the multicentric Randstad metropolitan region in the Netherlands and subsequently try to explain this position in a quantitative way. This will lead to a novel typology of regional second cities in multicentric metropolitan regions.

## **A spatial approach of Okun's law for Spain's provinces**

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G05-O1 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 11:00 AM - 1:00 PM

In the Spanish economy, economic fluctuations have had a great impact on the labour market and especially in unemployment. During the recent economic recession that took place between 2008 and 2013, the reduction in GDP in more than 16 percentage points resulted in an 18 percentage points unprecedented increase in unemployment rate, which reached 26 percent of the active population in 2013. The subsequent period of recovery also implied a strong variation in the unemployment rate that accounted in almost 9 percentage points. But, the Spanish territory has not been affected in a homogeneous way and a different unemployment sensitivity has been found (Villaverde and Maza, 2007, 2009; Melguizo, 2017). This work aims to contribute to previous literature by determining the effect of spatial spillovers in the relationship between GDP and unemployment rate for the Spanish provinces (NUTS-3 regions) for the period that ranges from 1985 to 2015. In order to do so, we resort to an Okun's law extended version. But, first of all, we check the stationarity of the series and the panel of provinces by using the traditional individual and panel unit root tests. Then, we perform the Spatial Autoregressive Model (SAR), which only considers the endogenous variable spatially lagged but with non-spatial effects in the GDP variable. Later on, besides the spatial influence of unemployment rate of the other provinces, a spatial effect of the GDP variable is also included. Therefore, a Spatial Durbin Model (SDM) is applied. Preliminary results provide interesting findings. In the spatially lagged version, we obtain that regional GDP coefficients are significant for all provinces which showed high levels of unemployment sensitivity ( $\beta_1 \leq -0.3$ ) in the baseline model (model without spatial effects). However, for provinces that showed a  $\beta_1 \geq -0.2$  or a not significant coefficient in the baseline model, relationship between the aforementioned variables turns out insignificant and, also, for most provinces in which Okun's relationship turns out insignificant, spatial effect has a significant influence.

## **The choice of pattern of spatial development: reasoning and constraints**

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S22-S2 The politics of local and regional development  
IUT\_Room 303, August 28, 2019, 2:00 PM - 4:00 PM

see extended abstract online

One may observe the evident imbalance between aims of equity and efficiency in Russian regional policy. Encouraging of agglomerations' growth acquire a force of federal law. The arguments used in strategic documents appear to be invalid or not verified enough. Difficulties in interpreting observable data relate to the use of macroeconomic indicators for testing the initially microeconomic models. This practice is stimulated by methodological challenges and is complicated by the lack of data. The assertions about clear advantages of the territorial concentration of economic activities in cities in terms of production efficiency, national growth, and reducing regional disparities must be tested carefully. If theoretical arguments implicitly contained in fundamental strategic documents are not supported by empirical evidence the proposed regional policies may be inadequate.

In the paper proposed the author tries to understand what kind of reasoning underlie the ongoing bias to large cities in regional policy; considers theoretical arguments and empirical estimates and methods of their assessment in strategic documents, scientific literature and in public discourse; provides for statistical



assessments of relation between indicators of efficiency and spatial concentration of economic activities, based on aggregated microeconomic performance; discusses some factors that influence on the choice of spatial priorities in strategic planning and its reasoning.

## **The impact of motorway expansion on urban growth patterns: the case of Portugal between 1991 and 2011**

**Prof. Patricia Melo<sup>1</sup>**, Prof. João de Abreu e Silva<sup>2</sup>

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G16-O6 Transport, Land Use and Accessibility  
IUT\_Room 110, August 30, 2019, 11:00 AM - 1:00 PM

Portugal experienced a massive growth in its motorway network after joining the European Union (EU) in 1986. The chart in Figure 1 shows the evolution of the motorway network. Just before joining the EU, the country's motorway network had about 200 kms, growing to 409 km in 1991, over 1000 kms in 1998, over 2000 kms in 2003 and reached 3000 kms in 2012, after which it remained stable. The fast expansion of the motorway network during the 1990s and 2000s had several implications on the economic geography of the country. The urban spatial structure has become characterised by growing suburbanization leading simultaneously to an increase in metropolitan area size and urban core decline. Data for the country's largest metropolitan area, the Lisbon Metropolitan Area (AML), illustrates this pattern clearly: the share of the city's population in the total AML population fell from 32% in 1980 to 21% in 2000 and 19% in 2010 (it is 18% in 2017).

In this paper, we investigate the extent to which the expansion of the motorway network contributed to a redistribution of population across the country favoring a pattern of suburbanization of the population and decentralization of employment. We combine SIG-based road network data with census data for population and employment in 1991, 2001, and 2011, and estimate the relationship between the growth of population, employment and motorways at three levels: central city or urban core, suburbs, and overall country's urban spatial structure. Issues of reverse causality are addressed using different model approaches, including instrumental variables and inconsequential units techniques. Similarly to existing studies for Spain, France, the Netherlands, and the US, the results indicate that motorways contributed to the suburbanization and decentralization of the spatial structure of urban areas, and overall the country, over the period.

## **An empirical examination of electricity price on regional Russian markets**

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G14-O1 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 11:00 AM - 1:00 PM

In this article the competitive electricity markets in Russian Federation were analyzed, the empirical analysis of restructured electricity prices was made. Based on asset-price specifications we model the price process and peculiarities of electricity price on Russian electricity markets. Some findings seems unique for electricity prices on competitive markets: such as "zero prices" and "positive jumps". We also find the most appropriate model for forecasting performance of electricity prices both on Europe and Siberia market. In Russian Federation there are two competitive regional markets: European and Siberian ones. On European market the nuclear power generation and fossil fuel generation are dominated. It means higher prices and less volatility as it's easy to forecast the generation of such type. On Siberian market there is the

high rate of hydro generation that means the cheaper price and the lower volatility level. Moreover the demand structure also differs: huge manufacturing companies are located in Siberia. So the goal of the research is to analyze the peculiarities of competitive prices on Russian regional markets. To achieve the goal we have these objectives:

- To analyze the dynamic of electricity price on day-ahead sector on regional electricity markets (European market and Siberian market) for 2016-2018 yy.
- To find out the seasonal, peak and weekend features, breaks and jumps on Russian electricity markets on regional electricity markets in Russia with modern econometric methods.
- Based on estimations make the conclusions about price dynamic on the regional markets and understand some features of supply and demand.

This research will provide empirical results that will help to understand the features of regional markets (Siberia and Europe), will help to make some recommendation about hedging the risk on the competitive electricity markets.

### **The Importance of National and International Links in Promoting Innovation among Developed and Less Developed Countries**

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G22-YS1 Institutions

IUT\_Room 205, August 29, 2019, 11:00 AM - 1:00 PM

The objective of this paper is to test the influence of national and international links on innovation, in developed countries as compared with less developed ones.

Although many studies focus on the impact of specific networks or collaborations on innovation, at the firm or at the industry level, there is a lack of quantitative studies that deal with these issues at a cross-national level. In addition, so far, no quantitative evidence has been found about the difference between developing and developed countries regarding the effect of various national and international links on innovation.

This study uses hierarchical polynomial regressions, based on the data of the Global Innovation Index (GII) for 2017 on 127 countries. It focuses on one specific aspect of innovation, the creation of knowledge, as measured in the GII by international patent applications filed under the Patent Cooperation Treaty (hereinafter: PCTs) and by national patent applications (both measured per the GDP of each country).

Other measures of knowledge creation (such as publications and business models) are not included, as well as other aspects of innovation (such as knowledge impacts, as measured by high-tech manufacturing, productivity growth, and employment creation).

The independent variable, which is used as an indicator of national links, is the extent of collaborations between universities and industries in research and development. The independent variables, which indicate international links, are telecommunications, computers, and information services imports, high-tech imports, intellectual property payments (each measured as a percentage of the country's total trade) and the number of joint ventures and strategic alliances of domestic firms with foreign firms (per the GDP of each country).

The main finding for all countries regardless of their income levels shows that the most significant link for the enhancement of both national patent applications and PCTs is university-industry collaboration.

However, in a separate estimation of high-income countries, university-industry collaboration increases national patent applications, while international alliances between firms decrease national patent applications. Furthermore, international alliances between firms have an inverted U shape relationship to PCTs. But in an estimation of low-income countries, high-tech imports are those which increase PCTs.

Hence, this study brings researchers and policy-makers one step closer to the formulation of effective public policies for promoting innovation in developed and less developed countries.

### **Location of Co-Working Spaces: A City Approach**

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S08-S1 New working spaces, digital transformations and peripheral areas  
IUT\_Room 408, August 30, 2019, 11:00 AM - 1:00 PM

The present paper investigates the location patterns and the effects co-working spaces (CWS) generate on the urban context. The focus is on Barcelona, one of the most important creative hubs in Europe in terms of knowledge-based, creative, digital, and sharing economy, and the city hosting the largest number of co-working spaces in Spain. The paper addresses three main questions: 1) Which are the location patterns of co-working spaces in Barcelona? 2) Do CWS agglomerate in the same areas? And, 3) Do CWS coagglomerate with specific firm activities? To do that, this paper uses open data on Barcelona neighbourhoods' socioeconomic composition provided by the Statistics Department of the Council of Barcelona and micro-geographic data of private CWS and creative labs in Barcelona. By using Geographical Information Systems (GIS) and Kd functions of agglomeration and coagglomeration, results show that CWS are highly concentrated in central areas of Barcelona where there are greater chances to meet customers and suppliers, the proximity to urban amenities and the fact of being associated to an specific place-image. Moreover, they coagglomerate with specific kinds of firms and to those most related to creative industries. These results are relevant when assessing what it should be the actual goal of urban policies in Barcelona.

### **Place the 'Candy' and 'Crush' it: Entry determinants of the Software and Video game firms in Barcelona**

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G12-O4 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 2:00 PM - 4:00 PM

This paper aims to determine which reasons lead Software and Video games firms (SVE hereafter) to locate in certain areas of Barcelona. This high-tech industry is a key industry in developed economies mainly located in urban areas. To carry out this analysis, we use SVE firm entries at neighbourhood level between 2011 and 2013 and a set of covariates that capture neighbourhood characteristics (localization and agglomeration economies, high-tech amenities, diversity, human capital and crime). Our results show that i) SVE firms tend to choose locations with a high diversity and good high-tech amenities (e.g. 22@ district), ii) the importance of the localization and agglomeration economies, since spatial spillovers are a key factor for this type of firms and iii) the role of the diversity in the location process of these firms, since SVE firms choose places with a high diversity of cultural and creative activity.

## Internal radial profiles of road transport times in European cities

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G16-O3 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 2:00 PM - 4:00 PM

The present study is part of a larger endeavour to formally and empirically establish the relationship between urban form and road network characteristics, and more specifically aimed at understanding how Euclidean distances, network distances, and travel times change with population size and vary across space. It is essential to describe transport networks in depth to understand their relationship with land use patterns, population distribution, and city size, in order to inform spatial planning policies and meet current societal challenges such as reducing traffic emissions and pollution intakes along travel paths. Currently, a systematic quantification of travel times across the European continent is still missing. Such quantifications can be seen as relevant indicators of the spatial extent of cities and eventually highlight the relative effectiveness of the internal morphology of cities in economic or environmental terms. We aim for important empirical insights about the spatial and temporal distribution of congestion on road networks.

The internal radial profile of 303 Larger Urban Zones, in terms of the Euclidean distance from all residential areas to the unique centre of the city, is examined and related to time distances after applying a shortest path algorithm on the real-world road network. The trips are computed around the clock, so in optimum and congested traffic conditions, which resulted in more than 7.5 million simulated trips in total.

In addition, we investigate how and why this relationship between those two distance measures vary across city population size and across Europe. The aim of this process is to find out whether the global properties of cities (here, the road transport properties) can apply to all urban systems, as a general scaling relation with size. Scaling laws have already been established between average transport properties and city size (for ex. the length of the road network or total traveled distance), but not yet on intra-urban radial profiles.

This very rich database reveals that road transport time is concave with Euclidean distance, which calls the persistent hypothesis of many urban economic models assuming linear transport costs into question. It also allows to observe the magnitude of congestion throughout the day, and to compare congestion between cities. The preliminary results show that city size is very likely linked to the congestion effect at the peak traffic time. Indeed, travel time scales with cities' size and is a major dis-economy associated with the high concentration of people.

## Measuring societal resilience of the European regions

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S40-S2 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 2:00 PM - 4:00 PM

In the last two decades, the EU society has been exposed to many challenges such as demographic ageing, migration pressure, financial and economic crisis, climate changes and transformations of geopolitical equilibrium. These developments require a fit and resilient society, able to adapt to new situations.

Resilience is the ability to thrive in a time of crisis. It embraces the capacity of a region to absorb a shock, adapt to a new equilibrium or transform towards a better future. The aim of this paper is to operationalize the concept of regional resilience using a novel approach, which, beyond merely economic dimensions, includes dimensions of social capital and social inclusion and overall quality of life.

Using the financial and economic crisis (2008-2012) as a shock, we assessed the resilience of the EU regions (NUTS2) through a three-step methodology. First, we select a large list of economic and non-economic indicators that span the entire process of societal well-being production. Second, we compute resilience indicators as the joint dynamic response to the crisis. Finally, we look at characteristics that differentiate resilient regions from the non-resilient ones.

Results show substantial heterogeneity across regions. Resilience performance is different between the reaction in the immediate aftermath of the crisis and in the longer run. Moreover, results confirm the importance of expanding to a broader list of variables. Finally, regions with a better inclusion of women in the labour market perform better in absorbing the effect of the crisis in the medium run.

### **The Greek Brain-Drain: a persisting process in a period of slow recovery of the Greek economy**

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G17-O4 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 11:00 AM - 1:00 PM

The recent slow recovery of the Greek economy (from 2016) seems to be accompanied by a relative slowdown in total emigration. Moreover, in accordance to the Hellenic Statistical Authority, during the last two years (2016 and 2017), the net migration rate (difference between the number of immigrants and the number of emigrants per 1000 inhabitants) is after six years, slightly positive. The weakness of the Greek economy explained that the above reversal does not concern all the aged groups: the net migration rate remains negative for the aged 25-49 and more especially for the young 25-29 years old with a rate around -6.0‰ against +1.0‰ for the entire population.

As highlighted by various studies, one of the most acute socio-economic consequences of the Greek economic crisis since the beginning of the decade was an unprecedented intensification of the Brain-Drain phenomenon. This is not a new situation because since the early 1990s, a number of highly qualified young people chose to emigrate, mainly to pursue studies at a very high level and / or to achieve a career advancement. What distinguish the present period of the pre-crisis one are the reasons for emigration as well as the intensity of the phenomenon. Nowadays, it is much more of a necessity (constrained decision) than a desired choice. In 2017, about 250,000 Greek researchers reside abroad and among them nearly 200,000 have left the country after 2010 (Labrianidis, 2018). Beyond the demographic problem raised by such a phenomenon, the economic challenge for the country is obviously major. Unless the brain-drain turns into a gain-drain, it is the whole process of Greek economic revitalization (with its corollary, its transition to the knowledge economy) that risks being compromised by the loss of human capital. In this context, the aim of the present paper is to assess the main motives for young scientists to emigrate today despite the slow recovery of the Greek economy, highlighting their main profiles as well as their choice of destination countries. The analysis is based on the results of a survey implemented at national level during the second semester of 2017 and involving a random sample of 1063 scientists 18-39 years old. Finally, referring to the various empirical studies carried out during the last years, the objective of the study is also to determine to what extent the reasons for young scientists to leave the country would have changed during the crisis.

## Co-location and innovation in high-tech companies, the case of Tunisia

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G07-O2 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 9:00 AM - 10:30 AM

Since the mid-1980s, small businesses have returned to the heart of local development analysis and have begun to attract the attention of researchers and policy makers around the world. These companies create jobs, wealth and innovation. In brief, they hold the keys to economic growth in the future (Amable, 2006). In developing countries, and in Tunisia in particular, these small enterprises operating in the field of ICT technologies should play a particularly important role as agents of industrial regeneration and technological catch-up. They are at the heart of government strategies for a "knowledge-based economy". Clusters are at the heart of these strategies for the competitiveness of companies and territories. They are considered as powerful catalysts for innovation and competitiveness.

Tunisia has deployed material, financial and institutional resources to promote the emergence of these supposedly pro-innovation environments. The creation of technoparks and industrial zones is part of this government strategy.

However, these environments are controversial, both conceptually and practically. It was first the economists who began to express their concerns about the enthusiasm of policy makers. Indeed, there is almost unanimity among the latter to consider local development and clusters as a matter of course. Second, there is not enough distance from the expected economic benefits of these policies. Thus, there is no evidence to admit that clusters promote the innovative capacity of companies.

Systematic evaluations of these impacts are then necessary. The purpose of this communication is, on the one hand, to assess the interest of high-tech companies in clustering in geographically and sectorally well-defined territories. On the other hand, to compare the factors affecting the innovation capacity of companies benefiting from a simple industrial agglomeration policy (industrial zone of the North-East of the Lake) and those benefiting from a technopole policy (Elgazala technopole).

## Intergenerational social mobility in Italy and Sweden: the role of institutional factors

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S45-S1 Social mobility & Inequality  
IUT\_Room 205, August 29, 2019, 4:30 PM - 6:00 PM

The literature on Intergenerational Social Mobility (ISM) measure the dependency of children's life chances on their parents. A number of contributions show that the degree of this dependency varies because of several factors specific to the person or to the society where the individual lives. Personal-specific factors include inherited abilities, gender, and ethnicity. Meanwhile, the degree of socio-economic development, the welfare system and other institutional factors shape society and are supposed to play a key role on upward mobility of young generations.

In this paper, we investigate upward mobility in Italy and Sweden. These are two European the extent to which city characteristics affect the likelihood of a generation to reach a better social status than previous generation in Italy and Sweden, two European countries characterized by very different institutional environment and welfare systems.

We use data provided by the National Institute of Statistics of the two countries containing information on offspring and their family background. We merge these data with provincial-level data (NUTS 3) on socio-economic conditions, and institutional factors.

## **Emerging economy in focus of digitalization: institutional features and specifics of state regulation in the Russian Federation**

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G08-O6 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 4:30 PM - 6:00 PM

The aim of the article is to study the effect of digital transformations on the potential development of Russian regions, taking into account institutional imbalances. The use of instruments of direct and indirect government regulation is investigated. Used empirical data obtained from surveys of regions of southern Russia. Applied methods of institutional, comparative, quantitative and qualitative analysis. The authors tested hypotheses about the inversely proportional relationship between the efficiency of stimulating instruments of indirect regulation and the degree of fragmentation and isolation of various orders and the predominance of their archaic forms, as well as an increase in public investment and the level of digitalization development in conditions of asymmetric development of regional markets. The authors proved that the tools of direct state regulation stimulate an increase in investment in digital infrastructure, and not in the generation of innovations in general. The effect of replacing innovation priorities by investment with an emphasis on the development of traditional industries in the South of Russia has been revealed. The article clarifies that the asymmetry of institutions and innovative deployment tools is determined by the reproduction constants of emerging markets (the share of the rental component, the level of scientific and technological development, the degree of natural monopolies, the type of financial sector, the maturity of the stock market, the ratio of tangible and intangible assets, the state of human and social capital ). It is shown that in the regional projection the effect of each permanent reproduction can be either enhanced or canceled under the influence of hidden institutional constraints. For the regions of southern Russia, such specific factors are multi-structured, multiculturalism, growth of glocalization phenomena. The nature of objectively given innovative passivity of some regions of the South of Russia is revealed. Conclusions and suggestions can be used in the development of programs of innovative development of regions and territories.

## **Territorial patterns of smart specialisation investments in Poland**

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S54-S2 Evaluating Smart Specialisation: early evidence on policy implementation and economic transformation  
IUT\_Room 304, August 29, 2019, 2:00 PM - 4:00 PM

Smart specialisation is a place-based policy approach which asks regions or countries to define the main strategic domains for research and innovation investments. Smart specialisation seems to offer policy makers a new integrated set of principles guiding investment in innovation through prioritisation and concentration of public resources, and the mobilisation of local assets and entrepreneurial capacity. European Commission regional policy grounded in the place-based approach made available the largest, pan-European industrial policy funding programme to apply those principles. In our paper we try to handle some critical for smart specialisation issues like the acquisition and transition of knowledge and ideas at the geographical level, the existing defragmentation of regional systems of innovations, the multi-level governance framework of smart specialisation implementation, the dependence of each territory on its specific characteristics. With our work we think we can contribute to an analytical

framework to monitor the regional variations during the smart specialisation implementation systematically.

For this purpose we analyse the 4,276 research and innovative projects in Poland in the mid-term of operational programmes implementation stage. They have been supported with grants or vouchers coming from the European Regional Development Fund and contracted under the Polish smart specialisation framework. First, we explore difference in policy mixes at national and regional level. Then, if there is a territorial concentration of smart specialisation projects. Finally, we look if smart specialisation has a regional or rather urban or rural territorial perspective associated with some factors characterising the projects' locations.

Our empirical analysis confirm the concentration of research and innovation investments in cities and that the smart specialisation implementation is affected by agglomeration of innovative activities in urban territories in Poland. The Polish main cities seems to match local research strengths with business needs and to build critical mass in terms of population, entrepreneurial potential, size of output of innovative activities measured by patents application as associated factors, but also their functions as capital of regions and state for generating research and innovation projects. These findings might signal a need to expand this inclusion in territorial sense either by the revision of the smart specialisation domains in order to expand their spatial dimension or by the improvement of the implementation mechanisms supporting the development of smart specialisation domains in less attractive and active territories.

#### **Implementation of the African Road Safety Action Plan. SaferAfrica first results and recommendations**

**Prof. Dominique Mignot**<sup>1</sup>, Prof. Laurent Carnis<sup>1</sup>, Mr. Eduard Fernandez<sup>2</sup>, Dr. Davide Usami<sup>3</sup>, Prof. Ruth Welsh<sup>4</sup>  
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S60-S1 Road Safety Management in Developing Countries: the case of Africa  
IUT\_Room 108, August 29, 2019, 4:30 PM - 6:00 PM

According to the Global Status Report on Road Safety 2015 of WHO, "road traffic injuries claim more than 1.2 million lives each year and have a huge impact on health and development". Using WHO classification of regions, there has been a further deterioration in road fatality rates in the WHO Africa region from 24.1 fatalities per 100,000 populations in 2010 to 26.6 fatalities per 100,000 in 2013. Road trauma in Africa is expected to get worse. Road traffic accidents resulting in deaths and injuries have an enormous impact on public health and the economy in Africa.

One objective of SaferAfrica project was to assess the implementation of Action Plan 2011–2020. This contribution presents the assessment supported by analyses completed at different scales (continental, regional, and country) (Mignot et al., 2018). The second main objective was to define some initiatives for different topics designed to foster the implementation of the Action Plan. The contribution focuses on the outcomes at the country level.

The choice was made to focus upon the analysis of the recommendations issued from the mid-term review of the African Road Safety Action Plan (ARSAP) and SWOT and PESTEL approaches through the different pillars of the Action Plan. Data was collected through a questionnaire (distributed among African road safety stakeholders) and international databases (mainly WHO data). Our analysis is based on inputs from questionnaires, international databases and expert's knowledge. Results are available for the 5 identified pillars by the action plan.

Our evaluation clearly highlights that ARSAP mid-term evaluation recommendations are still relevant and have to be enhanced in most African Countries. Secondly, ARSAP mid-term evaluation proposes few recommendations for the pillars 3 and 4. Our analysis is able to propose some additional recommendations



for those items, for example: Develop standards for full lifecycle of vehicles (old and news; Promote the use of child restraints).

At least, based on our analysis per pillar, two major recommendations could be made. They concern all pillars. African Countries have to: Develop consistent and systematic collection of data, in order to help public bodies for designing their public policy ; Enforce cooperation with NGOs and private sector representatives.

The main objective of SaferAfrica project is to provide African Countries tools for their road safety politics. These recommendations have now to be discussed with national contacts and authorities in charge of road safety, per country and with UNECA.

### **Retail and place attractiveness: The effects of big-box entry on property values**

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G04-O13 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 2:00 PM - 4:00 PM

We use big-box retail entry in Sweden to investigate how increased access to retail affects place attractiveness, proxied by residential property values. The opponents of big-box entry argue that large retail establishments generate noise and other types of pollution, and a variety of negative externalities associated with traffic. The supporters, on the other hand, argue that access to a large retail market creates a variety of positive spill-over effects and can thus be considered a consumer amenity that increases the attractiveness of the entry location. In our quasi-experimental design, we use a time series model to measure how the effects on property values change with distance from the entry location of five new IKEA retail areas. While prices of properties located at 1 km from a new IKEA store are not affected by the new entry, properties located at 1.5 km away experience an average increase of 6.87% after entry, to reach a maximum at about 2 km from IKEA at 6.95% and then decrease smoothly so that properties located 10 km away from IKEA experience an increase of only about 2%. Our results are in line with the argument that large external retailers have the potential to increase place attractiveness and may create favorable conditions for the long-run economic development of regions, but not in the direct vicinity of the new establishment where the positive spillover effects are cancelled out by costs from increased traffic, pollution, and crime.

### **The impact of edge-of-town shopping on small-city Sweden**

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G08-O6 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 4:30 PM - 6:00 PM

Although external trade is often pointed out as a principal determinant for the loss of city center attractiveness, we still have debatable empirical evidence about the direction and the extent of this relationship. External trade is not as major a threat to downtowns in larger cities where the customer base is often sufficiently large to cover several marketplaces, and resources for downtown redevelopment are usually easier to provide. In this article we focus instead on the challenges of small cities, many of which are struggling to create an attractive urban environment in their city centers in a time of structural change, increasing urbanization, and (often) inadequate financial resources and human capital.

To determine the effects of edge-of-town shopping centers on firms in city centers we use a difference-in-difference regression model with 'random effects' that control for heterogeneity at industry and geographical level. The results show, for example, that entry by edge-of-town shopping centers determines a 10% decrease, on average, in the CPI-adjusted real revenues of firms located in the city center. This effect seems to be mainly due to the impact on retail firms, which experience an average decrease in real revenues by 13%, and on the lower population quartiles of our sample (i.e., cities with less than 12,500 inhabitants). The market shares of the city centers are also negatively affected. This is an indication that new edge-of-town shopping centers 'steal' customers from city center retail firms. However, downtown firms in the hospitality sector do not seem to be affected the same extent, indicating that the hospitality sector may be the key for redevelopment in small city centers. Thus, competition makes these city centers willing to adopt, in line with the Schumpeterian value creation idea, innovative responses to the challenge posed by the development of external trade.

The ambition is that this knowledge can be used to increase the city center's attractiveness in the smaller cities, thus contributing to their importance as meeting venues and destinations.

### **The Determinants of Waste Crime: Empirical Evidence from Italy**

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G24-O5 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 2:00 PM - 4:00 PM

This study conducts an econometric analysis on the main factors influencing waste crime in Italy, applying the System Generalized Method of Moments on panel data from 2009 to 2015 at provincial level. The results show that socio-economic factors are important drivers of this crime type. High population density and GDP per capita reduce illegal waste management, while higher levels of education increase the reporting rates of illegal environmental activities. Waste crime is also associated with the presence of organized crime and other criminal factors such as criminal association and money laundering, as well as performance-driven factors such as waste sorting.

### **Bank branches in Russian regions: estimation of the role of distances and other factors of spatial distribution**

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G09-O1 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 11:00 AM - 1:00 PM

In the past two decades, Russia has seen a decrease in the number of banks, both as a result of the concentration and consolidation processes taking place in the banking industry throughout the world, and as a result of the Central Bank's "cleaning" policy.

As a result, there is a weakening of the positions of medium, small and regional banks, which leads to a reduction in the number of regional banks in favour of large interregional banks with extensive office networks and head offices mainly in Moscow.

Studies in financial geography indicate that the geographically centralized financial system may hamper financial development and sufficient lending in regions away from financial centres.

The significant distance between the local office and the head office of the bank creates problems of control, motivation of local managers and information asymmetry between the head office and the local office of the bank, which can reduce the effectiveness of remote bank branches. As a result, banking networks tend to open more branches in the vicinity of the head office, and fewer branches in remote regions or countries. The fact is the evidence of the important role of distances in the sector and raises the question of the consequences of the concentration of head offices of banks in one financial centre for such large country like Russia. At the same time, different banks and types of banks may have a different strategy for the spatial distribution of their offices. The presence in the locations of a sufficient number of banking offices is still a significant factor, especially for the households and small firms, despite the development of remote financial services technologies.

Based on the information available on the Central Bank of Russia website on the availability of bank offices in Russian regions we analyse how the number of bank offices in the region depends from the characteristics of the banks and the regions where the offices are located and from the distances between banks' headquarters and regions.

The purpose of the study is also to identify differences in this regard between different categories of banks, especially between private banks, subsidiary banks of foreign structures and banks with different types of state participation.

Estimation is made using Poisson regression method used to estimate the gravity models of interregional trade.

### **Peer signals on local labor markets and the migration response along the work-life cycle**

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G17-R2 Population, Migration and Mobility Behaviour  
IUT\_Room 110, August 28, 2019, 2:00 PM - 4:00 PM

We analyse the role of peer signals in explaining internal migration along the work-life cycle. In this context, peer signals are defined as age-specific labor disparities between alternative migration locations. While there is a large body of empirical research that has studied the migration response to aggregate local labor market disparities, the distinct novelty of this work is that we adopt an explicit work-life cycle perspective by testing for the strength of migration responses to these peer signals across age groups. Using data for internal migration flows and local labor market indicators in Denmark, our results show that peer signals are a significant factor in determining in the net in-migration rate of Danish municipalities in 2007-2015. In comparison, we do not observe significant effects when replicating the estimations with aggregate local labor market disparities instead of age group-specific peer signals. Moreover, while the estimation results generally support the neoclassical migration theory, we also detect significant alterations in the magnitude of the migration response across age groups. Similarly, rural-urban differences are found to be another key conditioning factor for the link between local labor market disparities and internal migration.

### **The Impact of Spatial Concentration on Total Factor Productivity in British Advanced Manufacturing, 1984-2016**

Prof. Richard Harris<sup>1</sup>, Dr John Moffat<sup>1</sup>, Dr Emil Evenhuis<sup>2</sup>, Professor Ron Martin<sup>3</sup>, Professor Andy Pike<sup>4</sup>, Professor Peter Sunley<sup>2</sup>

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The United Kingdom's economy is one of the most regionally imbalanced in Europe. The government's recent industrial strategy discusses various means of addressing this, one of which is the strengthening of existing clusters. This accords with the view that firms benefit from membership of localised groupings that provide access to skilled labour markets, specialised suppliers and knowledge spillovers. Most of the extant empirical evidence on spatial concentration in the United Kingdom has employed measures that suffer from areal unit problems. Using plant-level indices of spatial proximity derived from postcode district data, this paper investigates the extent of spatial concentration and its impact on total factor productivity in advanced manufacturing sectors in Great Britain. Separate indices of spatial concentration are calculated to take account of distances to plants in the same industry and distances to plants in 'related' industries as well as different distance decay factors. The extent to which, and where, clustering occurs is shown to vary considerably across advanced manufacturing sectors. The results from estimation of production functions indicate that, in most advanced manufacturing sectors, spatial concentration has a negative impact on productivity in small plants and a positive effect in larger plants. This suggests that small plants operating in clusters suffer from congestion diseconomies. However, large plants experience a positive net effect since they benefit more from knowledge spillovers due to their higher levels of absorptive capacity.

### **Investigating regional income mobility and inequality using EU-SILC longitudinal microdata**

Dr Zbigniew Mogila<sup>2</sup>, Prof. Patricia Melo<sup>1</sup>, Dr José M. Gaspar<sup>2</sup>

<sup>1</sup>ISEG - University of Lisbon, , PORTUGAL , <sup>2</sup>CEGE – Research Centre in Management and Economics, Católica Porto Business School, Universidade Católica Portuguesa, Porto, Portugal, Porto, Portugal

S46-S1 Recent Trends in Regional Socio-Economic Inequalities  
IUT\_Room 203, August 30, 2019, 11:00 AM - 1:00 PM

In this paper, we use the panel data component of the EU-SILC for the longest period of data available to date (2005-2016) to investigate geographical heterogeneity in individual labour income mobility and inequality across NUTSII regions and by degree of urbanisation (i.e. large urban areas, small urban areas, and rural areas) for Spain and France. Measuring income mobility over time is important as it can help to evaluate the extent to which there is upward/downward social mobility along the income distribution. Given the four-wave rotational design of EU-SILC, we can only study individuals' income trajectories up to a maximum of four years (if individuals respond to the survey every year). We consider income mobility for 2-year (i.e. transitions between t-1 and t) and 4-year (i.e. transitions between t-3 and t) income trajectories. There appears to be greater variation in the level of income mobility across regions in France, than in Spain. However, discrepancies in upward mobility across regions appear to be high in both countries. There is some indication of a negative correlation between regions' population size and the degree of upward mobility in all countries, which corroborates the results for income mobility by degree of urbanisation. To investigate the level of income inequality we compute different indicators, including the Gini Index (GI) and the income ratios P90/P10, P90/P50, and P50/P10. Overall, the results suggest that income inequality tends to be higher for larger urban areas and lower for rural areas, but there is variation across the income distribution as revealed by the different income ratios. Finally, we investigate the extent to which there is a relationship between income mobility and income inequality. Although the estimated coefficient of correlation suggests that higher income mobility is associated with lower income inequality, the correlation coefficient is not statistically significant.

## **The impact of governance on economic growth: a panel analysis of selected countries in MENA region**

**Mr Mokrane Mohamed<sup>1</sup>**

<sup>1</sup>*Tlemcen University, , Algeria*

G06-O4 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 2:00 PM - 4:00 PM

This study is focused on the impact of governance and other economic growth determinants on economic growth of 13 Middle East and North African (MENA) countries during the period 1996 -2017. We used World bank data for World development indicators (WDI) and Worldwide governance index (WGI) data on institutional quality and governance. The principal components analysis is used for reducing the six governance indicators created by the world bank. Panel regression was run using fixed effects method of estimation based on Hausman specification test results. After all corrections, the generalized least squares estimation given the best results. Findings reveal that, namely governance, trade openness, and Final consumption expenditure have a positive and significative effect on economic growth which is according to theory. On the other hand, results show that foreign direct investment, inflation, Gross fixed capital formation and Net official development assistance received have a negative and significative effect on economic growth for the selected countries.

## **Cohesion Policy effects on investment at the extensive and the intensive margin**

Prof Riccardo Crescenzi<sup>1</sup>, Prof Ugo Fratesi<sup>2</sup>, **Dr. Vassilis Monastiriotis<sup>1</sup>**

<sup>1</sup>*London School of Economics, London, United Kingdom, <sup>2</sup>Politecnico di Milano, Milano, Italy*

S55-S1 The EU Cohesion Policy after 2020 – How to achieve faster and more impactful spending where it is needed the most?

IUT\_Room 303, August 30, 2019, 9:00 AM - 10:30 AM

A large literature has investigated the growth effects of Cohesion Policy, finding on the whole positive effects albeit often with a number of qualifying conditions. The rationale of Cohesion Policy, however, concerns predominantly not the enhancement of regional growth per se but rather the enhancement of productive capacities in the targeted regions. Motivated by this observation, in this paper we examined the contribution of Cohesion Policy expenditures on private capital expansion (regional investment), focusing both on the extensive and the intensive margin (capital expansion and the productivity of capital, respectively). Our analysis unveils a very favourable picture for Cohesion Policy with regard to the extensive margin, implying a very successful role in mobilising private capital and raising local capacities for growth. At the same time, it also shows that the effect of Cohesion Policy on the intensive margin (the productivity of capital) is if anything negative, implying no additional 'productivity dividend' for Cohesion Policy interventions with regard to private investments. We discuss the implications of these findings in relation to the future of Cohesion Policy post-2020 and in particular in relation to the recent and prospective shift towards 'new instruments' for leveraging private investment and encourage high-returns entrepreneurial risk-taking.

## **International students' permanent temporariness in cities.**

PhD João de Abreu e Silva<sup>2</sup>, S. Haustein<sup>3</sup>, J.P. Sousa<sup>1</sup>

<sup>1</sup>*FEUP - Faculdade de Engenharia da Universidade do Porto, Porto, Portugal, <sup>2</sup>Department of Civil Engineering, Architecture and Georesources, CERis-Civil Engineering, Research and Innovation for Sustainability, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, <sup>3</sup>Technical University of Denmark, Kongens Lyngby, Denmark*

Migration is not a recent phenomenon, it has been occurring along human history, where people have migrated for several reasons, including survival. Despite it, the way it occurs has changed.

Regardless the fact that short-term stays associated to work and study are increasing and this movement of people with a short-term perspective is becoming increasingly relevant due to crescent globalisation, it is difficult to find official statistics about this phenomenon. This lack of information arises the need to search for information that can provide evidences about this group in the official data and complement it with non-official information.

From an urban scale perspective, the short-term residents represent a long-term impact, since this population is renewed constantly (Collins, 2012). What all this movement means for the cities is the emergence of new issues and needs related to their transportation systems and the process of adaptation of newcomers, that need to familiarize themselves in a short time span. For many in this group, the immersion in a new city will mean having to deal with a complex multimodal transport network, mostly unknown to the individual.

In this context and observing the state of the art, to the best of our knowledge, we are contributing to the understanding of how short-term residents respond and adapt to the new configuration of systems, spaces and norms by examining the intra-urban mobility behaviour in their host city in a context of transnational short-term relocation.

This paper draws on semi structured interviews that were conducted with the aim to explore the travel and spatial-related behaviour of transnational temporary migrants. Their main focus was on verifying the existence and nature of the influence of relevant factors that could be affecting people's behaviour in the context of transnational relocation. As a proxy for Millennials temporary residents, international exchange university students were chosen as they share relevant aspects, such as: transnational relocation, education level, age range and the need to adapt themselves in the host city. The sample is composed of 10 international students from 9 different nationalities that were living in Porto or Lisbon during January of 2018. In total, 11h15min of interviews generated 160 pages of content that were codified and categorized according to their relation with relevant themes and emerging similarities or divergences. After the main categorization, each theme was analysed individually in its content and sub-categories were assigned.

### **The effect of culture on home-ownership**

Miss Marina Morales Catalán<sup>1</sup>, Dr Miriam Marcén Pérez<sup>1</sup>

<sup>1</sup>*University Of Zaragoza, Zaragoza, Spain*

G18-O2 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM

In this paper, we analyze the role of culture in determining whether, or not, an individual is a homeowner. We use data on first-generation immigrants who arrived in the United States under six years old. Following the epidemiological approach, those early-arrival immigrants grew up under the same US laws, markets, and institutions, so any dissimilarity in the proportion of homeowners by country of origin may be interpreted as a consequence of cultural differences. Our estimates indicate that there is a positive and statistically significant relationship between the cultural proxy, that is, the proportion of individuals who are homeowners by country of origin, and the immigrants' choice of home-ownership. Results are maintained after controlling for home-country observable and unobservable characteristics, and are consistent in several subsamples. Neither the differences in the formation of couples (same or different origin) nor the existence (or not) of mortgage financing appear to be driving our findings. Additionally, we present evidence

of different mechanisms of transmission of culture (horizontal transmission, respect for elders, and gender roles), which reinforces our results on the cultural effect.

### **The effect of same-sex marriage legalization on interstate migration**

Miss Marina Morales Catalán<sup>1</sup>, Dr Miriam Marcén Pérez<sup>1</sup>

<sup>1</sup>*University Of Zaragoza, Zaragoza, Spain*

G17-O4 Population, Migration and Mobility Behaviour

IUT\_Room 101, August 30, 2019, 11:00 AM - 1:00 PM

The aim of this paper is to estimate the effects of welfare benefits on homosexual people migration by using the evolution of same-sex marriage regulation across the United States. Given that interstate differences in the treatment of homosexual households may attract welfare prone individuals, our study is supposed to be reasonable. For the main analysis, we use data from the American Community Survey of Integrated Public Use Microdata Series (IPUMS) from 2001 to 2015 US census. Our empirical approach makes use of the variations in the timing of homosexual marriage legalization across states. Our results show that the legalization of same-sex marriage permanently increases the proportion of homosexual individuals moving from another state. These findings are robust to alternative specifications and controls for observed (the legalization of homoparental adoption, the prohibition of discrimination based on gender identity in employment, housing and public accommodation, the approval of gender marker change on birth certificates, and the introduction of the repeal of sodomy laws) and unobserved state-specific factors, as well as time-varying factors at the state level. We also extend this analysis to the examination of both migration across contiguous and non-contiguous states, separately.

### **Urban Employment Subcenters: the case of Curitiba, Brazil**

Mr Eduardo Moreira Thomé<sup>1</sup>, Prof. Alexandre Alves Porsse<sup>1</sup>

<sup>1</sup>*Federal University of Paraná, Curitiba, Brazil*

G05-YS2 Regional and Urban Labour Markets

IUT\_Room 306, August 29, 2019, 11:00 AM - 1:00 PM

Several studies have been developed to assess the presence of polycentric cities analyzing the spatial distribution of employment into urban space. Most of these studies are concerned to cities in developed countries and few have explored the polycentric urban structure of cities in developing countries, particularly to Latin America. This paper aims to assess the presence of employment subcenters in the city of Curitiba, Brazil. Since the 70's Curitiba adopted a TOD oriented urban planning policy searching to promote polycentricity. The core of this policy is the BRT network which was established over the last seven decades and is the main force influencing distribution of economic activities and people across the city. We use the semi-parametric approach developed by McMillen (2001) to identify the polycentric structure of employment in Curitiba. The employment database contains formal employment data at the firm level provided by the Ministry of Employment for the year of 2010, representing 50,553 firms and 658,937 employees in the city. These data were georeferenced in grid cells of 1 square mile over the city. The preliminary results show that Curitiba has a polycentric structure organized in nine employment subcenters. The spatial distribution of these subcenters is highly correlated to the BRT network, evidencing the role of TOD urban planning policy in shaping the polycentric structure.

## **Do residential change influence students travel mode choice? A qualitative analysis from University of Lyon**

**Ms Chloé Morhain<sup>1</sup>, Mr Louafi Bouzouina**

<sup>1</sup>*Entpe, Lyon, France*

S16-S1 Students, University and the City: Location Choice and Mobility Behaviour  
IUT\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

Young people's behaviours are a key issue in transportation research for several reasons: two of them are because they will be the users of tomorrow, and because their mobility are often indicative of new practices. We are now witnessing changes in mobility behaviours, which young people are often at the origin: lowering of driving licence (Evolmob, 2016) growth of shared mobility, mobility as a service, etc. These changes are also witnessed in housing behaviours: strong increase of flat sharing, studentification of some districts. Despite all these changes, students practices remain unclear today. The student population, although it has been studied for several years in the United Kingdom for many years (Alamel, 2018), is still little studied as a central object in the French literature. A recent literature review notices few articles or reports on student mobility for example (Baron et al., 2017). Beyond this student population still little studied, many studies tend to show that a link between the residential environment of individuals and their preferences for travel. Beyond this link that we can now consider established, there remains a large number of issues about the understanding of explanatory factors this relationship between residential choices and travel, especially for this student population. This is the issue we want to question in this article.

## **Investigation of optimal relative risk aversion degree for use in VSL measurement based on happiness survey**

**Dr. Ryuta Mori<sup>1</sup>, Dr. Kazunori Nakajima<sup>2</sup>, Dr. Naoki Sakamoto<sup>3</sup>, Dr. Masafumi Morisugi<sup>1</sup>, Dr. Eiji Ohno<sup>1</sup>**

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G19-O3 Health and Environmental Issues  
MILC\_Room 409, August 30, 2019, 11:00 AM - 1:00 PM

In recent years, based on data of the happiness survey aimed at clarifying determinants of subjective happiness, economic evaluation of various mortality risks can be implemented. So, we conducted the happiness survey through the internet-based questionnaire survey about thousands of people in Japan, estimate a happiness function using an ordered response model, and measure the value of a statistical life (VSL).

As a result, the characteristics of VSL by attribute are similar to the tendencies of existing studies. On the other hand, the VSL measured by us was smaller than VSL (about estimated by the Japanese government agency) commonly used in Japan by about one order of magnitude. By the way, VSL depends greatly on relative risk aversion degree. In fact, there are cases where existing research uses the value of relative risk aversion degree different from ours. In other words, it is thought that this is why the VSL measured by us has become a small value.

Therefore, we tried to solve the problem with the following procedure. Firstly, VSL measurement was performed again using data obtained in the above survey and the relative risk aversion degree used in the existing study. Next, we calibrated the VSL that we first estimated to the VSL which is commonly used in Japan, and tried to estimate the relative risk aversion degree. Finally, based on these results, we examined the optimal relative risk aversion degree for use in VSL measurement based on the happiness survey.



## **Agglomeration externalities and offer of firm sponsored training : evidence from France**

Mr Yoann Morin<sup>1</sup>, Dr Lionel Védrine

<sup>1</sup>CESAER, Dijon , France

G08-YS1 Regional Competitiveness, Innovation and Productivity  
IUT\_Room 103, August 29, 2019, 11:00 AM - 1:00 PM

Previous literature on training and agglomeration economies have interpreted the negative effect of employment density on the access to training as an evidence of poaching effects prevailing over pooling effects. However, the consensus on previous studies of the empirics of agglomeration economies is to consider employment density as a proxy for all agglomeration economies. If we decompose them in sharing, matching and learning, then pooling is only a part of sharing economies. As such, previous studies have neglected a huge part of agglomeration economies when interpreting its effects on training. Because identifying each type of agglomeration effect is still a complicated work to undertake, we instead propose a methodology to identify poaching effects. If the coefficient associated with employment density is still negative when controlling for poaching, then the negative effect of agglomeration on training need to be interpreted differently than is has been done in previous works. In the case of training, poaching effects occurs when employees who were trained by their employer are poached by other firms because they can offer higher wages by not having to pay for the training. Thus, our identification strategy is based on the construction of an indicator of the turn-over in each firm. To study this, we use data on french firms : our data contains informations about individual characteristics of firms, but also about each of their employees. Using the informations about their employees, we construct our indicator of the turn-over. Our preliminary results show that when we control for the turn-over, the effect of employment density is still negative and significant, so we suggest a new interpretation of the effects of agglomeration on training.

## **Firms returns to training and agglomeration : a generalized propensity score matching approach.**

Mr Yoann Morin<sup>1</sup>, Dr Lionel Védrine<sup>1</sup>

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S51-S2 Counterfactual methods for regional policy evaluation: Social and labour policies  
IUT\_Room 304, August 30, 2019, 11:00 AM - 1:00 PM

Previous literature on training and agglomeration economies have shown that local labour market characteristics impact firm sponsored training negatively. In the French case, firms have an obligation to invest a part of the payroll in training by the law of 1971: thus, in denser areas, this obligation to train could lead firms to over-invest into training. This effect in denser areas is explained by matching effects: firms are more likely to find workers with the proper skills and their need to train workers could be therefore less important. On the other hand, it has been shown that when local sectoral competition is harder, firms are more likely to offer longer training. Indeed, in denser areas firms who can't find the right worker for a job could also provide longer training to train their workers for the specific skills they need. This could lead to heterogeneous returns to training for firms. The first part of this study uses a generalized propensity score matching approach to identify the effects of training on firms' economic activity. Then, we study how these effects could be heterogeneous depending on local labour market characteristics. We use French data about firms' workers, firms economic activity (balance sheet) and a unique dataset of training investment for every french firm with more than 10 employees.

## **Adequate Timing to Implement Sewage and Water Supply System in the Developing Countries**

Prof. Masafumi Morisugi<sup>1</sup>, Ms. Hyorim Lee<sup>2</sup>, Mr. Gou Tomoda<sup>1</sup>, Dr. Ryuta Mori<sup>1</sup>, Prof. Eiji Ohno<sup>1</sup>, Prof. Kazunori Nakajima<sup>3</sup>, Prof. Naoki Sakamoto<sup>4</sup>

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G19-O1 Health and Environmental Issues  
MILC\_Room 409, August 29, 2019, 9:00 AM - 10:30 AM

Mortality risk due to water pollution (ex. diarrheal diseases and digestive organ diseases) is one of the serious problems, especially for Asian developing countries. The timing to carry out a policy or a project (implementation of sewage and water supply system are typical examples) against such a problem is the typical debate issue as ever.

In the precedent researches, we have conducted surveys in Vietnam and Laos asking citizens' willingness to pay (WTP) for such a hypothetical water service which is assumed to reduce one's mortality risk due to water quality, namely Option. We also found a relatively robust relationship between their age and WTP (=Option Price) in both of theoretical and econometric perspectives. Especially the level of income seems to affect WTP positively. It means that there should be a certain point of time on their way of economic developing those nations achieve such status to pay water and sewage bills sufficiently.

Subsequently in this study, with a new survey data set in Cambodia, we also derive Option Value that is namely a non-use value of the hypothetical water service. For a reason that there is a number of insolvent people to pay the fee of such water service and sanitation in developing countries, we propose an alternative benefit index which is combined with Option Price, Option Value, and also their annual income properly. Regarding this measurement and comparing the countries that have implemented sufficient level of water and sewage system with the ones that have not done any yet, we examine whether there is such a turning point on the depicted trajectory graph. Finally, we discussed the adequateness of the Environmental Kuznets Curve Hypothesis about environmental load which likely makes water quality worsen off.

## **Conceptual and empirical underpinnings of local wellbeing**

Prof. Philip S. Morrison<sup>1</sup>

<sup>1</sup>Victoria University Of Wellington , Wellington, New Zealand

G20-O1 Social Innovation for Resilient Regions  
IUT\_Room 203, August 29, 2019, 4:30 PM - 6:00 PM

This paper focuses on the concept and measurement of context effects which are central to an understanding of local wellbeing. Context is a combination of the objective characteristics of the locality as well as their subjective interpretation by the individual.

I explore the extent to which context effects vary with definitions of wellbeing, the type of individual (their attribute mix) and the characteristics of the locality or place they live in. The results are designed to inform local policy and planning following the passage of the revised (New Zealand) Local Government Act which will allow greater focus on the so-called 'four wellbeings' (social, economic, environmental and cultural wellbeing).

While the primary empirical source of testing is the 2018 New Zealand Quality of Life Survey, key propositions are also tested on the more extensive 2016 European Social Survey multilevel data file. Among the questions motivating this study are whether the wellbeing impacts of wider and deeper social connection are more positive in some localities than others, what place characteristics might account for these differences and the degree to which their impact (association) varies by the type of individual.

## **Production Dynamics in Multi-product Firms' Exporting**

Prof. Kazunobu Hayakawa<sup>1</sup>, Prof. Hayato Kato<sup>2</sup>, Prof. Toshiyuki Matsuura<sup>2</sup>, **Prof. Hiroshi Mukunoki<sup>3</sup>**

<sup>1</sup>*Institute of Developing Economies, Chiba, Japan*, <sup>2</sup>*Keio University, Tokyo, Japan*, <sup>3</sup>*Gakushuin University, Tokyo, Japan*

S42-S2 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 2:00 PM - 4:00 PM

To create rooms for production capacity for exported products, new exporters may decrease either or both the production of the other products and that of exported products for the domestic market. Namely, when starting exporting, firms need to reallocate their resource across products and markets. The purpose of this study is to investigate the within-plant resource reallocation across products and markets when multi-product firms start exporting. To this end, we employ the Indonesian manufacturing surveys during 2000-2012. As a result, we found the different pattern of resource reallocation between when the first exported product is a core-competence product or not. Also, it is found to be different according to firms' resource abundance.

## **Integrating Cost Benefit Analysis with Economic Impact Analysis to evaluate government assistance for staging regional events: Motor Racing Bathurst Australia**

**Dr. Thomas Murphy<sup>1</sup>**, Dr John Hicks<sup>2</sup>

<sup>1</sup>*Charles Sturt University, Bathurst, Australia*, <sup>2</sup>*Charles Sturt University, Bathurst, Australia*

S52-S1 Joint SBCA ERSA Session on Evaluation  
IUT\_Room 408, August 30, 2019, 9:00 AM - 10:30 AM

Local, State and Federal governments in Australia sometimes provide financial assistance for the staging of events in regional centres to enrich the cultural experience in these centres and to stimulate the local economy in terms of economic growth, employment and household income. The economic efficacy of this government support is usually assessed by two separate techniques Cost Benefit Analysis (CBA) and Economic Impact Analysis (EIA). Some argue that the two approaches are complementary while others argue strongly for the primacy of CBA over EIA. It is argued in this paper that integrating the two approaches is the most appropriate technique for evaluating government assistance for regional events. The approach is illustrated using the case of the Mount Panorama Motor Racing Circuit at Bathurst Australia.

## **Importance of Social interaction for Next-Gen Cities**

**Dr. Vinko Mustra<sup>1</sup>**

<sup>1</sup>*Faculty Of Economics, Business and Tourism University Of Split, Split, Croatia*

S03-S2 Engaging with the Digital World: the effects for society, places and individuals  
IUT\_Room 404, August 29, 2019, 4:30 PM - 6:00 PM

In the current urban century, recognition and documentation of the presence of agglomeration economies has been well defined (e.g. Puga, 2010, Glaeser, 2011, Kourtit and Nijkamp, 2016, 2018). Yet, understanding the causes of agglomeration economies is still open process without clear results (Puga, 2010, Martinus and Stigler, 2018) but with no doubts about the importance of the knowledge. The key ingredients of theoretical approaches lie in the fact that knowledge is conceptually distinct from information (Feldman and Audretsch, 1999) and that knowledge "is best transmitted via face-to-face interaction and through frequent contact (Feldman and Audretsch (1999)). As a result, importance of social interaction (Akerlof, 1997; Glaeser et al.,

1996; Ballester et al., 2006; Calvó-Armengol et al., 2009) and especially the critical role of space for social interactions has been recognized (Brueckner, Thisse and Zenou, 2002; Helsley and Strange, 2007; Brueckner and Largey 2008; Zenou, 2013; Helsley and Zenou, 2014, Buchel and von Ehrlich, 2016). At the same time, digital revolution and the underlying new technoeconomic paradigm are associated with creating drastic social changes (Tranos and Nijkamp, 2012) resulted with increasing attention to the role played by information and communication technologies for social interactions (e.g., Bruni & Stanca, 2008; Shapiro, & Sinkinson, 2011; Kearney & Levine, 2015; La Ferrara, Chong, & Duryea, 2012; Misra, Cheng, Genevie, & Yuan, 2016; Pénard, Poussing, & Suire, 2013;). However, it seems the exiting literature and research offers space for many questions on its space-time trajectories and its social implications. Thus, the paper tries to analyse does and how digital transformation affect the social interactions in urban areas. In first place it tries to offer conceptual framework that will confront exiting empirical evidence claiming higher efficiency of social networks in urban areas (Buchel and von Ehrlich, 2016) with the studies showing higher level of society digitalization not only leads to less time for face-to-face social interactions (e.g. Olkean, 2009; Mumford & Winner, 2010) but also to the reduced quality of face-to face social interactions (Misra & Stokols, 2012, Pea et al., 2012, Rotondi et al, 2017). Finally, the digital revolution and knowledge creation, transmission and accumulation are a highly interdependent processes requiring analysis and focus that should stimulate researchers to pay more attention on theoretical explanation for possible channels through which digital transformation might affect space-time trajectories of the knowledge but also lead policy makers to better understand agglomeration forces and deliver more effective policy measures.

## **Benefit evaluation of Linear Chuo Shinkansen with the SCGE model**

Dr. Shinichi Muto<sup>1</sup>, Mr. Kazuki Hirabayashi<sup>1</sup>

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G17-R1 Population, Migration and Mobility Behaviour  
IUT\_Room 110, August 28, 2019, 11:00 AM - 1:00 PM

### **INTRODUCTION**

The Maglev called by the Linear Chuo Shinkansen is going to open from Tokyo to Nagoya by 2027, and extended until Osaka by 2045 in Japan. The required time of the Linear Chuo Shinkansen from Tokyo to Nagoya which has 500 km distance will be 40 minutes from 90 minute that is the present required time of Tokaido Shinkansen. Its reduced ratio of required time is 56%. The required time from Tokyo to Osaka by extended the Linear Chuo Shinkansen until Osaka will be about 70 minutes from 190 minutes that is present time. Its reduced ratio of required time is 63%. The Linear Chuo Shinkansen is going to connect Tokyo largest metropolitan area, Chukyo metropolitan area and Kinki metropolitan area in around one hour. So people trips will be more active, and large economic effects are expected be generated for sightseeing, business and so on. However the fee of Linear Chuo Shinkansen is necessary to be set appropriately to occur those benefits certainly. Though appropriate fee is generally marginal cost pricing, Linear Chuo Shinkansen's fee is not necessarily appropriate because to existing fixed costs such as constructing costs. When Linear Chuo Shinkansen's fee is set by marginal cost pricing despite existing fixed costs, JR Tokai (the Central Japan Railway Co.) which is operating entity of Linear Chuo Shinkansen suffers a deficit because he cannot collect fixed costs. When fixed costs exist, a deficit is eliminated by average costs pricing. However, it is afraid that JR Tokai may set higher fee than average costs pricing, because he owns constructed infrastructures, can eliminate new entry and will be regional monopoly. Higher fees occur to decrease user's benefit, so it is necessary to evaluate benefits of Linear Chuo Shinkansen by being considered setting fee.

In this paper, we show marginal each fee by marginal cost pricing, average cost pricing and monopoly pricing estimated by producing cost data which is published by JR Tokai. Next, we try to build the SCGE model incorporating high speed railway network, and introduced explicitly a producing behavior of

transport sector. And we incorporate fixed costs or monopoly to the SCGE model to measure impacts for difference of set fee. As a result, we become able to treat transport cost endogenously that must change by carrying out transport projects. Finally, we calculate benefits of Linear Chuo Shinkansen for each set fee.

### **Territorial intermediation device in the entrepreneurial ecosystem: the case of students incubators**

Dr. Fabien Nadou<sup>1</sup>

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S18-S2 Entrepreneurship and local development: symbiosis and/or dissonance?  
UdL\_Room 103, August 30, 2019, 9:00 AM - 10:30 AM

The systems and structures for supporting and developing entrepreneurship have enjoyed a strong growth over the past twenty years in all French territories. This important deployment is based on strategies, relationships and behaviors between public and private actors, in a reach an entrepreneurial ecosystem of resources, value creation and attractiveness. This relationship and coordination dynamic within the system requires anchor points and intermediation processes between actors to make the ecosystem operational and sustainable. Incubators, particularly student incubators, carry potential in setting up these intermediation processes that favor the creation of new spaces and territories for entrepreneurial support. We propose here to put the notion of territorial intermediation in an exploratory perspective, resting the question of the conceptual links between territories and entrepreneurship, but also on the empirical level, by the observation of the "Inside" incubator in Normandy, which has developed initiatives to make the support model for young creators more efficient and innovative. The case study is about a business school incubator, which try to develop a territorial ecosystem to promote the creation economic activities by students.

The issues related to entrepreneurial support require the integration of explanatory models that take into account the spatial and territorial dimensions (Bacha et al., 2016) as their role becomes a key factor in the implementation and sustainability of the ecosystem.

The conceptual question that we ask is that of the organization of the entrepreneurial ecosystem, which still lacks theorization (Acs et al., 2014, Stam, 2015), in relation to the territory. Do the processes of territorial intermediation, which correspond to relational dynamics and behaviors between actors inscribed on a territory (Lacour, 1996, Nadou, 2013), can they contribute to better understanding the functioning of entrepreneurial ecosystems? On the empirical level, our objective is to examine, the role of incubators, in particular students, in the development of entrepreneurship and to see if these they allow the definition and the formalization of new spaces and territories of entrepreneurial accompaniment (Bories-Azeau et al., 2018). To what extent do certain schemes developed by incubators enable the emergence of new relationships between territorial actors and form part of a process of territorial intermediation favoring the establishment of entrepreneurial ecosystems geared towards students?

Data on the ability to organize new entrepreneurship support spaces, to federate competing, complementary, but sometimes unreadable devices for young creators come from both semi-structured interviews with responsible for the incubator and support program, specifically observed and analyzed.

### **Working towards agile entrepreneurial ecosystems: The “French Tech” case**

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G21-O3 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 4:30 PM - 6:00 PM

For around a dozen years, public economic development policies have focused on innovation, competitiveness and regional structuring processes that help businesses to collaborate and innovate. Many local development agencies and organisations have begun to introduce or implement support and facilitation measures. From this perspective, the “French Tech” initiative, launched in France in 2013, raises the question of the value added and the ripple effect that this type of public policy can have in consolidating entrepreneurial ecosystems and helping to develop innovative start-ups. The present paper shows the need for public policies to cultivate agile schemes that can draw together all the main local stakeholders by means of proximities that boost innovation and the globalisation of start-ups.

### **Regional economic impacts of flood due to climate change in Japan: A Computable General Equilibrium Modelling Approach**

Dr. Kazunori Nakajima<sup>1</sup>, Dr. Masafumi Morisugi<sup>2</sup>, Dr. Naoki Sakamoto<sup>3</sup>, Mr. Go Tomoda<sup>2</sup>, Dr. Ryuta Mori<sup>2</sup>, Dr. Eiji Ohno<sup>2</sup>

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S32-S1 Spatial CGE, land use and transport modeling,  
IUT\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

To examine damages of increase in the long-term flood due to climate change on prefectural economic activities in Japan, we develop a quasi-dynamic multi-regional computable general equilibrium (CGE) model and measure flood damage costs and adaptation benefits using some climate scenarios. The findings in this study are shown as follows.

(1) In 2031-2050, the average flood damage costs were estimated respectively as 581.2 million yen per year in RCP2.6 and as 585.0 million yen per year in RCP8.5 (MIROC5). On the other hand, the average prefectural flood damage costs were estimated respectively as -0.20 million yen per year (benefit) to 10.30 million yen per year in RCP2.6, and as -0.22 million yen per year (benefit) to 10.31 million yen per year in RCP8.5. We found that, in spite of increasing in flood damage due to climate change, some prefectures had positive impacts of flood on economic activities.

(2) In 2031-2050, decreases in the average GDP were estimated respectively as -0.805% per year in RCP2.6 and as -0.811% per year in RCP8.5 (MIROC5). On the other hand, decreases in the average prefectural GDP were estimated respectively as -0.14% per year to -2.63% per year in RCP2.6, and as -0.14% per year to -2.68% per year in RCP8.5.

(3) The primary industry, the petroleum and coal products sector, and the electronic equipment sector were affected negatively by decreases in their outputs due to flood damage. On the other hand, the machinery sector, the construction sector, and the tertiary industry had insignificant impacts on their outputs. Additionally, whereas prefectures in Kyushu region had relatively negative impacts of flood on their industries, some industrial sectors in Tokyo, Kanagawa, Osaka and Fukuoka had positive impacts.

### **Flamenco as an example of sustainability: factors to take into account to boost consumption among young people**

Dr. Jesús Manuel De Sancha Navarro<sup>1</sup>, Dra. María Dolores Oliver-Alfonso, Juan Lara Rubio

<sup>1</sup>University of Seville, , Spain

S67-S1 Sustainability, water and energy use in the productive sectors: tourism, services, industry, agriculture and administrations

MILC\_Room 409, August 29, 2019, 2:00 PM - 4:00 PM

Flamenco is a musical genre which, according to the Royal Spanish Academy (RAE), can be defined as certain sociocultural manifestations generally associated with the gypsy people, and which has special roots in Andalusia. This musical genre was declared intangible heritage by UNESCO on 16 November, 2010 in Nairobi (Kenya).

Focusing on the economics of flamenco, we concur with Ortega (2006) who states that the importance of flamenco in all its meanings is undeniable in the development of Andalusia's cultural industry, and is key to Spain's image overseas, being an exportable product. In addition, a study carried out by the Ministry of Tourism confirms that flamenco is one of the main motivations for visiting Andalusia, with the most attractive being singing and dancing (Turismo Andaluz, 2004). Flamenco is thus inextricably linked to Andalusian culture. Seville, where our empirical work was carried out, is one of the main centres for its development, and is where there has been sustained growth recently in terms of its supply (Palma et al. al., 2017).

The analysis of the work we present, from the demand standpoint, is framed within a quantitative approach using the survey method. For this, we first designed a questionnaire and then selected the sample, in accordance with the data offered by the latest available University of Seville statistical yearbook (2014-15). Subsequently, an artificial neural network of the Multilayer Perceptron type was used, a non-parametric model with a better performance than the parametric techniques (logit, probit, etc.).

The objective of this research is twofold: to identify the explanatory factors of the intention of the youngest to attend flamenco, and to elaborate a series of proposals that help to boost their consumption, favoring the sustainability of Flamenco as a cultural economy. Among the results, we highlight that one of the main issues influencing attendance is human and cultural capital.

This work may be interesting for cultural programmers, who try to estimate and predict a minimum level of attendance to their shows, in order to achieve the economic-financial sustainability of them.

### **Resilient metropolitan areas in Romania – the shift from forced cooperation to collaborative governance. A case study**

**Prof. Bogdana Neamtu<sup>1</sup>**, Prof Calin Hintea<sup>1</sup>, Prof Viorel Stanica<sup>1</sup>

<sup>1</sup>*Babes Bolyai University, Cluj-Napoca, Romania*

S40-S2 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 2:00 PM - 4:00 PM

The paper addresses the issues of collaborative governance in the context of the metropolitan areas from Romania. As secondary cities are becoming the engines of the national economy, there is a growing interest in how these cities can function better, develop even further, and moreover, determine spillover effects in terms of economic growth, better service delivery, and increased quality of life into the surrounding rural communities. The central government has mandated a type of "mandatory" cooperation in the framework of metropolitan areas attached to the growth poles, as a precondition for receiving European money. However, the communities that are part of these areas are currently searching for ways to move away from this top-down induced cooperation towards more bottom-up collaborative partnerships. Based on the literature review, we developed an analytical model for understanding how one specific metropolitan area, namely the Cluj-Napoca one, functions. The empirical research includes interviews with the mayors of all local communities from the metropolitan area. The results are rather interesting – legal and policy context are currently not very conducive for bottom-up cooperation and some of the drivers which foster cooperation, especially leadership, are emerging but not fully developed yet.

## **From being smart to becoming wise: how capable are innovation policies to foster a knowledge driven strategy that promote growth?**

Dr. Daniela Nepote<sup>1</sup>, dr Filomena Berardi<sup>1</sup>

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G08-O4 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 9:00 AM - 10:30 AM

The economic and financial crisis that hit the world economy in 2008, has led Europe to question itself on the redefinition of the role of companies and their positioning within the economic ecosystem in relation to restarting economies. Amongst the innumerable economic policy tools to promote economic development and to foster growth, the majority of current cluster policies in European countries have targeted emerging industries and emerging technologies. This is especially the case when those policies are strongly related to innovation and R&D support, as well as to Smart Specialization Strategies (S3). Accordingly, the most important measures for clusters support refer to the engagement of SMEs, research and development, and internationalization. It is important to note that interventions may have an effect on economics which are not easy to measure. In fact, according to the “regional innovation paradox” (Oughton C., Landabaso M., & Morgan k., 2002) innovation does not translate automatically and everywhere in better economic performance, posing a problem of a reliable performance’s evaluation. Moreover, quantitative attempts to measure the impact of innovation may be made difficult by the well-known problems of defining innovation, and the obvious pitfalls of using R&D expenditure as a proxy (Boschma and Frenken, 2006). The final scope of this paper is to outline a number of reasons for which a comprehensive approach on cluster evaluation is needed and therefore to elaborate a number of possible strategies to define it. This paper highlights the development of the cluster strategy in Piedmont Region as a case study.

## **Determinants of technology-specific R&D collaboration networks: Evidence from a spatial interaction modelling perspective**

Ms Martina Neuländtner<sup>1</sup>, Dr. Thomas Scherngell<sup>1</sup>

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G07-O5 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

It is commonly acknowledged, that the creation of knowledge is the result of interactive, collaborative learning processes among organizations of different types located in different geographical spaces (regions). Especially, in a strongly knowledge-based economy built on fast-growing and R&D intensive technologies such as Key Enabling Technologies (KETs), collaborative knowledge creation is increasingly gaining importance to rapidly enable access to external, nation-wide and global new sources of knowledge. With the focus on technology-specific R&D collaboration networks in six different KETs, each representing different knowledge bases and modes of (collaborative) knowledge creation, we emphasize the determining role of technology-specific heterogeneities. The objective is to estimate determinants of these technology-specific R&D collaboration networks, with a special focus on spatial separation and network structural effects. We employ a spatially filtered negative binomial spatial interaction model with a set of 506 metropolitan and non-metropolitan regions to identify differences in the determinants of technological knowledge flows, proxied by EU-funded collaborative projects. The results show that the role of the determinants under consideration indeed differ across the inter-regional collaboration networks in the six KETs, not so much in terms of significance and direction, but in terms of their relative importance. Geographical barriers are significant, both regarding geographical distance and country border effects. Moreover, network structural effects are of high importance, but do not remove spatial effects in all KETs.



Both spatial and network effects seem to be of higher relevance for more industrial and engineering based than more science based technological fields.

### **Sorting in an urban housing market - is there a response to demographic Change?**

Dr. Uwe Neumann<sup>1</sup>, Lisa Taruttis<sup>1</sup>

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S38-S2 Housing Markets: information, taxes, prices  
IUT\_Room 108, August 28, 2019, 2:00 PM - 4:00 PM

In urban areas, there is considerable neighbourhood-level variation in population characteristics. Using Dortmund as a case study we analyse whether and to what extent rents, housing prices and segregation dynamics corresponded with demographic ageing in urban neighbourhoods between 2007 and 2016. In a two-step analysis based on a hedonic pricing model and a discrete-choice model of housing location we find that in Dortmund so far there has been no slump of the housing market in neighbourhoods where the population ages more rapidly. Nevertheless, over the study period demographic segregation was on the rise and, according to a hedonic analysis, prices for apartments were higher in districts with a comparatively “younger” population. In the course of further demographic change in Germany, which has come to a contemporary halt due to immigration, the response to ageing on urban housing markets in terms of location choice and prices may therefore become more evident. A large-scale urban regeneration project has revitalised the housing market of a declining Dortmund community during this decade. Since local ageing has not affected housing markets severely so far, it appears to be within the scope of urban policy to upgrade the attractiveness of ageing neighbourhoods as perceived by younger generations.

### **Structural effects of cluster policies : Evidence from France**

Mr Konan Alain N'ghauran<sup>1</sup>

<sup>1</sup>University Of Saint-Etienne, Gate LSE, Saint-Etienne, France

S14-S1 Collaboration-based innovation policies: theory, empirics and practitioner feedbacks  
UdL\_Room 106, August 30, 2019, 9:00 AM - 10:30 AM

This paper investigates the effects of the French cluster policy during the period 2005-2010, with a focus on the structure of local innovation networks. It evaluates how cluster policies influence the structuration of innovation networks following four topologies: embeddedness or connectivity, efficiency, resilience and geographical anchoring. We run panel regressions (with fixed or random effects) using 4 periods data and 94 NUTS2 French regions. Although the French cluster policy has significantly increased network connectivity for all the French departments, our preliminary results indicate that there is substantial heterogeneity in the effects of the policy, especially regarding the other topologies.

### **Mean Reversion of the German City System After WWII: To What Mean?**

Mr Duc Nguyen<sup>1</sup>

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G12-YS1 Location of Economic Activity (EPAINOS)  
IUT\_Room 202, August 29, 2019, 11:00 AM - 1:00 PM

This paper uses the synthetic control method to construct comparison units for West-German cities. We use these as counterfactuals to assess the long-run impact of the WWII bombings on the economic activity of 52 West-German cities, and the West-German city size distribution. We extend the literature in that we do not only look for whether cities following the WWII bombing shock are mean-reverting or not, but the use of counterfactuals allows us to distinguish whether individual cities experienced a positive or negative impact as well. We find a permanent impact on the majority of cities, where the ratio of positive to negative impact cities is around 5 to 6. Also higher populated metropolitan cities before WWII tend to either return or be positive impact cities, while negative impact cities mostly consist of lower populated places with the exception of Berlin. We also find a non-random decline of the majority of counterfactual cities around the 1960s. Overall, our findings support a hybrid theory, where the determinants of a city's size are underlying mutable locational fundamentals, and increasing returns.

### **Carpooling in Paris Region : the question of the critical mass**

**Mr Dany Nguyen-luong<sup>1</sup>**

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S31-S1 Carpooling for daily trips  
IUT\_Room 103, August 30, 2019, 2:00 PM - 4:00 PM

We propose two presentations in one. The first one concerns the results of an experimentation conducted by Ile-de-France Mobility, the Transport Authority. In Paris-Île-de-France Region (12 M people, 12 000 sq km), the last known figure (HTS 2010) of the car occupancy rate is 1.30 for all purposes and only 1.05 for home-work. So there is a huge potential in carpooling to reduce car traffic if you manage to increase significantly the car occupancy. IDFM conducted from October 2017 to September 2018 an experimentation, with a dozen of intermediation platforms (Karos, Klaxit, IdVroom, etc), of a monetary incentive to encourage carpooling (2 € per trip limited to 2 trips per day). The main result is that the monetary incentive is not attractive enough, in view of the constraints (detour, uncertainty about the return, fear of the unknown), to generate the famous critical mass which is necessary to turn carpooling into a massive mode. Other incentives such as travel time reduction seem more interesting with, for example, dedicated HOV lanes. Secondly, we will present mainly a methodology to model simply mixed lanes on highways dedicated to HOV and express buses in case you do not have any reliable intermodal traffic model, just a classical static monomodal model, since most models are more or less still monomodal today. The application of this methodology is under way, the first results may be presented, otherwise it will be interesting to discuss about this methodology with the participants.

### **How do local stakeholders consider transport and housing energy precariousness? An example of new territorial governance issues**

**Dr. Jean-Pierre Nicolas<sup>1</sup>**, Dr Marie-Clotilde Meillerand<sup>1</sup>, Dr Sébastien Gardon<sup>2</sup>, Dr Vincent Warwzyniak<sup>3</sup>, Dr Natacha Gondran<sup>4</sup>

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S23-S1 Territorial and place-based governance, (new) processes for local coordination  
IUT\_Room 303, August 28, 2019, 4:30 PM - 6:00 PM

In the framework of that session on territorial and place-based governance, we would be pleased to present the result of the RESILIENCE project on the interplay of local actors involved in energy precariousness in 3 French territories with distinctive characteristics (rural, peri-urban and urban).

Despite their growing interest for energy price issues, local stakeholders have difficulties to take into consideration the combined impact of household location on their housing heating and their daily mobility gasoline consumption. First, there is a lack of local databases crossing household expenses for housing and transport, which would allow better territorial diagnosis; second, and this is what we would like to point out in that communication, the local governance is structured by sector of action (housing, transport, energy, social, etc.), and it could be difficult for stakeholders to provide coherent answers when facing such a transversal issue.

How do these stakeholders coming from different sectors interplay? How do the territorial specificities interfere with their positioning and their local actions? These specificities can be economical, institutional, geographical, etc., but we will also emphasize on the historical dimension that can strongly affect the cooperation between actors.

The 3 territories that have been investigated are the Trièves 'communauté de communes', a rural territory located 30-40 kilometers in the south of Grenoble conurbation, the urban municipality of Saint Fons, integrated into the 'Métropole de Lyon', and the peri-urban territory of the 'SCOT du Rovaltain' (Roman, Valence, Tain-l'Hermitage, in the Rhône valley). These 3 territories are representative of French local collectivities with different fields of competence, at different scales and with different household energy issues: how does it influence the local stakeholders and their action? In the same time, the selection of these 3 territories is due to their very soon implication on energy and social issues, and the experimentations they then have been able to conduct.

Our presentation will focus on the way of housing and transport precariousness is ownershiped by local stakeholders of these 3 territories, with a particular attention on how they work together on that issue, the data and knowledge they mobilise, the difficulties and blocks they meet, how they identify the consequences of some spatial planning choices. The question of transversality and cross-sectorial cooperation will be a core issue of our presentation.

### **Work experience and graduate migration in Germany – new evidence from an event history analysis**

Ms Annekatrin Niebuhr<sup>1</sup>, Mr Christian Teichert<sup>2</sup>, Ms Anne Otto<sup>2</sup>, Ms Anja Rossen<sup>2</sup>

<sup>1</sup>Institute For Employment Research, Christian-Albrechts-Universität zu Kiel, Kiel, Germany, <sup>2</sup>Institute for Employment Research, Nürnberg, Germany

S41-S6 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 29, 2019, 4:30 PM - 6:00 PM

We use administrative social security records and event history analysis to investigate the significance of previous work experience for the migration decision of German university graduates. The regression results suggest that work experience gained previously and while studying in the university region reduces the likelihood of graduates out-migrating, while extra-regional work activity enhances the probability of labour market entry outside the region of study. The size of the effect depends on the type of work experience. The findings point to the importance of knowledge about local labour markets and social networks for graduates' migration decision at the start of their career.

## **Intermodal terminals in an urban context**

**Mr Nierat Patrick**<sup>1</sup>

<sup>1</sup>*Ifsttar, Marne La Vallée Cedex 2, France*

S30-S2 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 4:30 PM - 6:00 PM

In many cities, local government implements urban logistics measures to achieve sustainable development. At the same time, national authorities promote the use of combined transport for long-distance trade because of its environmental qualities. For this solution, the economic analysis shows that it is cost effective when the carrier finds its customers within a market area around the terminal. The location of the terminal therefore appears as a fundamental factor in the efficiency of combined transport.

Where the terminal should be located in relation to the carrier's interest? Should it be closer to the city or should it be located away from it? What will be the induced nuisances, especially in terms of traffic?

To shed some light onto these issues, a case study has been carried out on a rail-road carrier. It makes use of rail services between the south-east of France and Paris terminals; it collects and delivers the goods by trucks. The activity of the 74 trucks assigned to pre- and post-haulage around Paris has been monitored. We collected detailed data such as origins, destinations, filling ratio and repositioning routes. Company's performance parameters (daily mileage, empty load rate, number of operations per truck...) have been used to calculate its theoretical market area.

Through a comparison between theoretical and observed market areas, we question the location of the terminal in relation to the center of Paris. This work shows in a new light the issues of location of a terminal as well as the counterproductive effects that can have the transport policy yet focused on the promotion of rail services.

## **Train stations as an attractor for business**

**Dr. Désirée Nilsson**<sup>1</sup>

<sup>1</sup>*Malmö University, Malmö, Sweden*

G12-O3 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 11:00 AM - 1:00 PM

Public transport is often discussed as having a structuring effect on land use in cities and spatial interaction and development (Bjerkemo, 2011). Investment in infrastructure also influence how business organise production, distribution and location decisions (Holl, 2006). Rail infrastructure usually has more impact on surrounding society than other transit systems. The purpose in this paper is to study if new centrally located railway infrastructure influence location decisions of business and in such case what type of business is more attracted to train stations? Chatman & Noland (2011) provides a theoretical discussion on how public transport improvements can have an impact on productivity. Mejia-dorantes, Paez, & Manuel (2012) studies the impact of public transport infrastructure and finds that urban accessibility is related to economic activity.

The case studied is Malmö city tunnel, which opened in 2010. Two new city stations opened, which connect to the old city station. The three stations have different attributes, one station was built on undeveloped land and the other in parts of the city which already had a built environment with established businesses. The original city station was changed to a through station, with easier access to other parts of the city. Data used for analysing spatial changes of business is a micro-level data base where business sector is identified as well as employee educational level and other business characteristic.

## **Food deserts in Sweden**

**Ms Helena Nilsson<sup>1</sup>**

<sup>1</sup>*Jönköping International Business School, 55314, Sweden*

G04-O13 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 2:00 PM - 4:00 PM

In many of the advanced economies there has been a spatial concentration of people as well as economic activity occurring in the past couple of decades. In some industries the concentration of firms, however, has outpaced the concentration of the population, giving rise to increasing distances from inhabitants to different service providers. Food store desertification has been a growing phenomenon in a number of countries. With the increase of online retailing and home delivery, the pressure on the physical store has increased with the result in a decline in the number of stores. The present study examines the state and development of food deserts in Sweden between 2000-2013. Using a panel of 2500 neighborhoods, the median distance to the nearest food store is calculated and the development of food deserts between two points in time is examined. In a subsequent analysis the drivers of the change are investigated using a spatial panel fixed effects framework. It is found that despite the growth of e-commerce, there has only been only a minor increase in average distance to nearest food store, while the maximum distance even has decreased. A spatial-temporal analysis of the data however shows that there is a correlation between distance and population size, and that, in the long run, the access to food stores will continue to decline in areas with shrinking populations.

See extended abstract online.

## **The risks involved and determining factors over the stagnation period of tourism area life cycle (TALC) in the Onsen-tourism destinations**

**Prof. Kazuo Nishii<sup>1</sup>**

<sup>1</sup>*University Of Marketing And Distribution Sciences, Kobe, Japan*

G18-O3 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

This study is motivated by the news that the earthquake struck Hokkaido last September and caused damage to tourism related industries at Noboribetsu, reporting anxiety that the damage will last long. The Noboribetsu Hot-Springs Resort is one of the Onsen tourism destinations, where a varied set of spa-related services and health-oriented activities are required for the attraction and satisfaction of wellness travelers. This study aims to quantitatively analyze the Tourism Area Life Cycle (denoted TALC) in the Onsen tourism destinations and to identify involved risks and determining factors over the stagnation period. In this study, we start to review the TALC researches referring to recent advances by Butler et.al (2006) and summarize them as follows: The first perspective is that there exists the variety of the TALC evolutionary processes depending on differences in both external and internal impacts. The second perspective concerns the diversified situations during the reorientation period of the TALC. Such diversification covers situations that range from decline to rejuvenation. Tourism destination marketers take evasive action to reorient forward to the post-stagnation period. Nonetheless, the types of destination management strategies vary from case to case corresponding to the circumstances specific to the surrounding areas. This means that a better understanding of the actual situation of the TALC should be required for better decisions with respect to area management strategies.

Based on these perspectives, the TALCs in Hokkaido and the Noboribetsu destination are quantitatively analyzed comparing with other hot-springs spa resorts. The analysis specifies evolutionary growth patterns and identifies what period they are actually positioned in their life cycles. It also intends to explore the risks and factors determining the fluctuation, especially in the stagnation period.

The results show that the TALC in Hokkaido can be classified into a stepped-up growth pattern: In the stepped-up stage, positive social capital impact caused pushing up the carrying capacity. They also indicate that the actual situation in Noboribetsu has been positioned into the stagnation period since 1970s. When our focusing on the risks involved over 40 years, it can be found that several earthquakes significantly offer negative impact on the number of visitors to Hokkaido and that the range of negative impact accounts from 2.4 to 9.6 points in a decreasing rate of the previous year.

Finally, we will try to clarify challenges on how we can inclusively manage the risks inherent in these stagnated tourism destinations to move the rejuvenation period.

### **Effect of Bilateral Free Trade Agreement on Technology Choice**

Mr Ryoichi Nomura<sup>1</sup>

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S42-S1 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 11:00 AM - 1:00 PM

This paper examines how the formation of bilateral free trade agreement (FTA) affects firms' technology choice in a three-country model, where each country has a domestic market and a local firm. We construct a following model: In the first stage, firms choose production technologies simultaneously and independently. We assume that firms can reduce their production cost by engaging Research and Development (R&D) activities. In the second stage, governments determine the tariff levels so as to maximize own national welfare. Governments set their tariff level under the Most Favored Nation clause when there is no FTA, while governments of FTA eliminate tariff each other and set only eternal tariff against non-member country under the FTA. In the third stage, firms compete a la Cournot in all markets. Our main conclusions are as follows: (i) a formation of bilateral FTA tends to encourage member firms' R&D investment, (ii) it discourages an adoption of new technology by non-member firm under some condition, and then decreases the number of investing firms, and (iii) it may discourage member firms' R&D investment and encourage non-member firm's R&D investment.

### **Neighbourhood attainment after partnership dissolution: Disentangling penalties and gains in the adult life course**

Dr. Viggo Nordvik<sup>1</sup>, Prof Liv Osland<sup>2</sup>

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G17-O1 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 2:00 PM - 4:00 PM

Over the adult life course, the hierarchic quality of the residing neighbourhood could be understood as a kind of path or trajectory. On average for both men and women, the housing trajectory tend to be an increasing function of age. The trajectories may be seen as the realization of a dynamic forward-looking plan. However, various events in life may cause interruptions in the execution of the plans. A partnership dissolution or a divorce are an important example of such an event, and this is studied in this paper.

Inspired by the life course perspective, we treat these dissolutions as transitions that may generate shifts in the expected trajectories. Moreover, we use the concept of neighborhood attainment, operationalized by the median of middle-aged male income in each defined neighborhood. Using a difference-in-difference approach, we contrast trajectories of impacts of neighborhood attainment across a range of different dimensions such as age, gender, divorcees, and intact couples, with and without children (before and after dissolution). Finally, utilizing a quantile regression frame we demonstrate that the effects differ significantly across the distribution of (change in the) neighborhood attainment.

Our studies are undertaken using a longitudinal register based data set with complete coverage of the total Norwegian population. We follow the population, 31-50 years of age from 1993 up to 2014.

### **Patterns of specialization and robots adoption: A regional perspective in Italy and UK**

Dr. Massimiliano Nuccio<sup>1</sup>, prof. Marco Guerzoni<sup>2</sup>, Prof Aldo Geuna<sup>2</sup>, dr. Riccardo Cappelli<sup>2</sup>

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S11-S2 The regional socio-economic impact of the 4th industrial revolution  
UdL\_Room 104, August 28, 2019, 4:30 PM - 6:00 PM

Most of the recent literature on the development of AI and robotics has scrutinised the correlation between robots adoption and employment at the country level and only in a recent report OECD (2018) has addressed the risk of automation for jobs at the regional level. The paper aims at investigating the interaction between regional specialization/diversification patterns and robots adoption. We provide new evidence on the relationship between industrial structure and robot penetration, considering the 2008 financial crisis as either an opportunity for firms to change and move into Industry 4.0 or a threat to survival.

The contribution of the paper is also methodological since we apply an innovative unsupervised algorithm (SOM) to classify regions based on their industrial structure and, therefore, we compare our results with the more traditional measures of related and unrelated variety.

The analysis relies on NACE industrial re-classification of employment data for 137 NUTS2 regions in the five largest European economies (Germany, France, UK, Italy and Spain), respectively observed over two periods of growth in between the crisis: 2002-2007 and 2013-2016. After selecting and outlining the 12 clusters generated by the SOM algorithm, we used them to in relationship to the initial regional provision of robots and the robots growth rate.

Key words: Industrial structure, industrial specialization, robotics, innovation

JEL classifications: E32, R11, R12

### **Testing the farm size and productivity in Nicaragua: A panel data non-parametric analysis**

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G23-O4 Rural Issues  
MILC\_Room 410, August 30, 2019, 2:00 PM - 4:00 PM

The main goal of this paper is to examine the well-known inverse relationship hypothesis (IR-H) between farm size and productivity in Nicaragua using non-parametric methods designed specifically for panel data. The data employed are from the Living Standards Measurement Study (LSMS), a nationwide household survey carried out by the Nicaraguan Statistical Service and the World Bank for the years 1998, 2001, and

2005. An unbalanced panel made up of 3,088 observations is used. The main results suggest that: 1) there exists a systematic inverse relationship between farm size and productivity; and 2) the IR strengthens when unobserved heterogeneity across farm households is taken into account. Both findings are observed from the parametric results but is weakened from the non-parametric estimations. However, using other indicators of farm productivity such as family labor used per hectare farmed, both parametric and non-parametric results, we found a robust evidence that corroborates the IR hypothesis for Nicaragua.

### **Household expenditures in Brazil: a non-parametric analysis using panel data**

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G10-O4 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 2:00 PM - 4:00 PM

Food expenditures, mainly in low-income families, have a substantial weight in the household budget, deserving special attention. The estimation of the Engel curves, relating the share of food in total household expenditure to income levels, is relevant for public policy design, both for poverty reduction (e.g. cash-transfer programs) and to agribusiness decisions, (e.g. definition of retail prices of food). In this paper we apply parametric and non-parametric methods to pseudo-panel data from four household expenditure surveys, for six product groups (food, housing, transport, education, health and clothing). The surveys cover all 11 major metropolitan regions in Brazil. The use of panel data allows for controlling for unobserved characteristics. In addition, non-parametric methods allow verifying if the function is adequately specified according to the nature of the data and its functional form. We estimate alternative models, including fixed effects and non-parametric panel data estimators. The results for the mean values of non-parametric estimates are not different compared to fully parametric estimations. However, in different percentiles, the non-parametric estimates of household income and household components produce different impacts of these on the share spent by households on each product group. We also conclude that non-parametric methods with controls for the unobserved characteristics of household heads in panel data produce similar results to those of non-parametric methods in cross-sectional data. For the fully parametric models, similar coefficients of the independent variables were also found with cross-sectional (pooled) and panel data (fixed effects) for six consumption goods analyzed.

### **Willingness to pay for road safety: A conceptual study and pilot survey for Germany**

Dr. Andy Obermeyer<sup>1</sup>, Prof. Georg Hirte<sup>1</sup>

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S59-S1 Road Safety Economics for Resilient Countries and Regions  
IUT\_Room 108, August 29, 2019, 2:00 PM - 4:00 PM

For the assessment of transport infrastructure projects, the use of cost-benefit analysis is a conventional procedure. One component within those analyses is the reduction of traffic accident victims, which has to be expressed in monetary units. Following the current literature, the value of a statistical life or, more generally, the value of risk reduction can be determined based on the individuals' willingness to pay. In a pilot study for Germany, we developed a stated choice approach to estimate the monetary values of four different injury categories. As original (and representative) studies for European countries using this state-of-the-art method are rare, the insights of this pilot survey might also be of interest for other countries. In



our analysis, we focused on the issue of risk presentation and measures to reduce the artificial character of the experiment. One of these measures is a driving simulation which, to the best of our knowledge, has not been used in SC studies on road safety valuation before.

### **Big data based tool for assessing perception of smart cities**

PhD, MArch Eng. Dorota Kamrowska-Zaluska<sup>1</sup>, MArch. Eng. Hanna Obracht-prondzynska<sup>1</sup>, Dr Karima Kourtiti<sup>2</sup>, Prof. Peter Nijkamp<sup>2</sup>

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G24-O1 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 11:00 AM - 1:00 PM

Emerging disruptive technologies such as AI, advanced machine learning, IoT, real-time data-based adaptive systems, virtual and augmented reality, particularly if embedded in urban space change the way it is perceived by users. A public realm full of wireless devices and sensors allow citizens not only also to be connected but to interact with the urban space or even to co-create it. It also allows researchers, planners and decision makers to conduct new types of analysis, which can further enhance evidence-based policy making, since Internet users by posting their opinions provide information allowing to assess how changes connected with smart cities are perceived by its dwellers. This paper is aiming to:

- introduce Big Data based-tools for assessing how strong (if at all) is the correlation between implementing smart strategies and solutions and the achievement of the high quality of urban space taking into consideration both urban morphology and quality of life;
- test the above mentioned tools on the basis of selected case studies in order to seek an answer to the question whether implementation of smart strategies and solutions can change the way how users perceive urban space.

By using multiple data sources at various levels in the open information urban systems, both user-generated content (“social” sensors - information generated by online activity) and governmental or public data (both open and confidential micro-data), a testbed based on selected cases is conducted. The proposed study consists of phases resulting from our elaborated theoretical framework, where within each:

- case studies are chosen based on a selected framework measuring smartness. Additionally, for selected cities (Gdańsk&Stockholm) implementing both smart strategies and solutions, data based models for assessing quality and users’ perception of smart spaces, are designed.
- empirical studies on selected cities are conducted. In this part data sources are used to provide tools designed in relation a priori chosen frameworks. In this phase, based on data mining methods, the quality of urban space is measured based on administrative and open data, while the perception of urban space is based on social media sources.
- a matrix analysis based on studied cases, aiming at finding a correlation between quality of urban spaces of cities and their index of smartness, is introduced.

This study aims of a verification of hypotheses and definitions in both conclusions and recommendations related to the role of Big Data in assessing the perception and implementation of smart cities.

### **How can we take advantage of the multisector approach to monitoring smart specialization? A Central European perspective**

Dr. Artur Ochojski<sup>1</sup>

<sup>1</sup>*University of Economics in Katowice, Katowice, Poland*

See extended abstract online.

### **Proposal and Evaluation of Business Model for Original Renewable Energy System which Contributes to Sustainable Resource Recycling Society**

Dr. Eiji Ohno<sup>1</sup>, Dr. Ryuta Mori<sup>1</sup>, Dr. Masafumi Morisugi<sup>1</sup>

<sup>1</sup>*Meijo University, Nagoya, Japan*

G07-O3 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

In paddy fields in which rice to be used as staple food by many people in the world is cultivated, organic matter such as rice straw is decomposed anaerobically by flooding, and a large amount of methane, which is a greenhouse gas, is released. To convert the modern society maintained by mass consumption of such energy and mass emission of greenhouse gases into a sustainable resource recycling society is an urgent issue to be solved by contemporary science and technology is there.

A project team of Meijo University has been promoting establishment of original technology to produce energy and chemical products from greenhouse gases and waste using biological functions. As a result, the team has established the GET system, which is a technology for conveniently recovering methane generated with high efficiency by rationally applying anisotropic decomposition to rice paddy flooded with rice straw generated after rice cultivation with high efficiency; GET means "Get Energy from Tanbo", and Tanbo is Japanese for paddy field. By using this technology, the team succeeded in producing 300 liters of biogas (bio-methane) with a methane concentration of 60% from 1 kg of rice straw.

Then, the team developed a control system for storage supply system and gas engine generator to supply bio-methane produced by the GET system to gas engine generator without purification and to generate power stably. After that, the team improved the control system further and succeeded in generating electricity with output power of 800 W using bio-methane produced from rice straw and weeds as fuel. On the other hand, in paddy fields containing a large amount of fermentation residue after production of bio-methane, it was shown that rice cultivation without fertilization could be realized. However, in considering social implementation of the GET system, it turned out that there was a problem in terms of profitability. In this study, we first showed how much subsidy by local government and labor support by local resident are necessary for the GET system to become profitable. And, by constructing a method to evaluate whether the GET system has social and economic values corresponding to the subsidy and the labor support, we proposed a business model for the GET system, and evaluated its social and economic values.

### **Search costs and anchoring in the housing market – the influence of buyer distance and public information**

Prof. Heidi Falkenbach<sup>1</sup>, Prof. Elias Oikarinen<sup>1</sup>

<sup>1</sup>*Aalto University, Helsinki, Finland*

S38-S1 Housing Markets: information, taxes, prices  
IUT\_Room 108, August 28, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

## **Economic Integration and agglomeration of multinational production with transfer pricing**

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S42-S1 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 11:00 AM - 1:00 PM

Do low corporate taxes always favor multinational production in the course of economic integration? We build a two-country spatial model with different corporate tax rates where multinational enterprises (MNEs) can manipulate transfer prices in intra-firm trade. Using transfer pricing, MNEs can shift profits between domestic production plants and foreign affiliates. As trade costs decline, more MNEs locate their production plants in the low-tax country. However, a further decline reverses this location pattern. Agglomeration of production in the high-tax country does not lead to greater tax revenues there. The results give implications for empirical studies and tax competition between unequal-sized countries.

## **A Consumption Model of Foreign Visitors in Japan: For Identifying the Beneficiary Area of International Flights**

Prof. Takaaki Okuda<sup>1</sup>

<sup>1</sup>Nanzan University, Nagoya, Japan

G16-O1 Transport, Land Use and Accessibility,  
IUT\_Room 110, August 28, 2019, 4:30 PM - 6:00 PM

In this paper, we proposed a travel consumption model of foreign visitors in Japan, which consider their travel trips for tourism. The origin-destination table of foreign visitors has the same table format as input-output tables. If the expansion table of travel consumption in each region can be estimated, we can perform the calculation similar to the input-output analysis, by using the expansion table. If the number of foreign visitors in Japan from an international airport is increased, you can analyze which area travel consumption will increase.

And the Origin-Destination table of Chinese is picked up and we built a travel consumption model of Chinese. In addition, we checked the accuracy of the model, by using the total number of foreign visitors in each prefecture which is listed in Japanese tourism and accommodation statistics. In Japan, the number of Chinese visitors to Japan who are arriving from Kansai Airport greatly increased from 2014 to 2016. If the estimated consumption in each prefecture is compared with its actual value, the correlation was a relatively high value of 0.994.

And using this model, the beneficiary area of a Chinese budget airline into international airports is identified in three metropolitan regions. As a result of this analysis, in the case that a Chinese budget airline is in service to Narita or Haneda airport, it is shown that the travel consumption of Chinese increases mainly in Tokyo metropolitan region. On the other hand, in the case that a Chinese budget airline is in service to Kansai or Chubu airport, it is cleared that the travel consumption of Chinese increases not only in Osaka and Nagoya metropolitan regions, but also in Tokyo metropolitan region.

## **The social cost of rail noise in France: an econometric estimation using hedonic prices approach**

Dr. Carlos Augusto Olarte Bacares<sup>1</sup>, Dr. Julien Brunel<sup>1</sup>, Mr Damien Sigaud<sup>1</sup>

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Generally speaking, the less a transportation mode uses fossil fuels, the more it will be considered as an environmental friendly mode. Given its characteristics, railway transportation is considered as the most ecological transportation mode. Nonetheless, it does not mean that rail does not produce negative environmental externalities. One of its biggest externalities concerns the traffic noise on surrounding communities along the railway corridors, especially those located in urban zones where density is higher. In order to overcome this market failure, social costs of rail traffic noise should be calculated. Furthermore, rail traffic noise has direct impact on several areas like health or housing market among other areas.

In France, several reports and studies had developed different methods to estimate the socio-economic impact of the French railway traffic noise (Boiteux, 1994, Boiteux, 2001, Faburel et Maleyre, 2007, or Quinet, 2013). However, these researches present several limitations for the assessment of initiatives tackling railway noise. There are based on approximations or are using average data from other European countries or from other transport modes like road or air traffic (e. g. Sogel, 1990, Grosclaude and Soguel, 1994, Vainio, 1991, and Andersson et al., 2010, 2013).

In this context, the present research aims to determine the economic impact of rail noise in France on the housing market using the hedonic price method. This supposes that this article fills the noticeable lack of studies about the impact of railway traffic noise in France with original French data. For this purpose, this paper focuses to study two specific areas in the region of Paris that have three main characteristics: they are highly urbanized, they are subject of high level of rail traffic and precise data about the level of railway noise have been successfully collected.

Results suggest that regardless of the type of housing between apartments and houses, the average loss of value for all the properties exposed to rail noise is around 6% of their market value. Hence, the social cost of noise depends on traffic, density of urbanized perimeter and the number of housing affected by railway noise. In the case of these two Parisian urban areas, the costs of these two examples are very close to each other even if their characteristics in terms of density of housings and of rail traffic are different.

### **Effects of Climat on Finance Default**

Dr. Guilherme Oliveira<sup>1</sup>, Dr. Rodrigo Oliveira<sup>2</sup>, Dr. Daniel da Mata<sup>3</sup>, Dr. Edson Severnini<sup>4</sup>

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G08-R1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 30, 2019, 11:00 AM - 1:00 PM

In Brazil, public banks are used to implement regional development policies. The Brazilian Regional Funds aim to decrease the economic inequality between regions. The Fund of the Northeast (FNE) financed more than US\$ 20 billion in loan contracts since 1989. This study analyzes the FNE's delinquency rates and its correlated factors between 2002 and 2013, focusing in climate, because big part of the resources go to semiarid area and developing countries are more vulnerable to climate change. The fixed-effects panel data model results suggest that the main factors correlated with the default rate are the standard deviation of temperatures around the annual mean, standard deviation of rainfalls around the annual mean and the

municipality's GDP. Drought shocks are associated with a decline in agriculture production and that the delinquency rate is higher in the agricultural sector.

### **New Governance for Protected Areas Networks: a potential framework for economic development based on ecological resources**

Dr. Andrea Omizzolo<sup>1</sup>, Dr. Luca Cetara<sup>1</sup>, Dr. Maria Coronato<sup>2</sup>, Prof. Maria Prezioso<sup>2</sup>

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G07-O2 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 9:00 AM - 10:30 AM

Networks of Protected Areas are well-known for playing a role in ensuring nature conservation and enhancing regional ecological connectivity. However, they show impressive governance capacities extending beyond the narrow field of ecology and nature management, especially if analysed in the perspective of EU green infrastructure policies (EC 2013a and b).

We intend to present the results of a targeted analysis focused on Systems of Protected Areas across Europe developed under ESPON Programme, particularly concerning an assessment of the competences available within Protected Areas' management structures and their networks to support the development of SMEs and the creation of regional green jobs (Prezioso et al. 2018).

Based on ecosystem services and corporate ecosystem services reviews, authors aim to show how the materiality of the assets and resources stored in Protected Areas for specific business activities can be evaluated. Authors also aim to propose how the resulting outcomes can be used for shaping appropriate policies for attracting SMEs by using standard categories of policy instruments.

More in general, we show the potential of Networks of Protected Areas to enhance the sustainable utilization of regional ecological, economic and cultural assets stored in Protected Areas, also by analyzing specific case studies in Europe.

We describe the characteristics of, and skills required by a governance model for Protected Areas and their Networks, which may support consistent private decisions and public policies concerning SMEs' location and regional economic growth, based on distinctive ecological assets and ecosystem services available or originating in Protected Areas (Bishop 2012, EC 2018, WRI et al. 2008). We also recall a set of non-strictly environmental policies formally linked to the EU Green Infrastructure approach (EC 2013a) that Protected Areas and some specific categories of their Networks show the competence to implement – that we tried to formally assess.

### **Environmental Payment Services (PSE): What place for Africa (sorting and bibliographic analysis)**

Mr Axel Ongram<sup>1</sup>, Prof Oumhani Eddelani

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S12-S1 Socio-spatial equity in the light of post-industrial restructuring, modeling exercises in Africa and Asia  
IUT\_Room 205, August 30, 2019, 2:00 PM - 4:00 PM

At the current social and sociospatial disparities, multidisciplinary research that address the theme of the deterioration of ecosystem services is facing the issue of implementing certain environmental policies because of the geographical and spatial complexity around these services.

To overcome these issues, some integrated environmental policy tools can be considered an asset. Payment for Environmental Services (PES) is often presented as an innovative and particularly promising

instrument for ecosystem conservation, and is meant to provide solutions to the shortcomings of traditional conservation and preservation tools. However, the effectiveness of PES is related to many issues.

The following article is a study carried out within the framework of the GIRE-PSE (Gestion Intégrée des Ressources en Eaux et paiement pour les Services Environnementaux) \* research project on climate change adaptation in Tensift basin in Morocco through improved management of watershed and payment for environmental services.

This work aims to make a meta-analysis on issues related to the application of PES in developing countries.

### **Does distance matters? Assessing the role of partner proximity in servitized companies: A Basque example**

Dr. Marco Opazo<sup>1</sup>, Dr. Lorea Narvaiza<sup>1</sup>, Dr. Tontxu Campos<sup>1</sup>

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S10-S1 Territorial Servitization

IUT\_Room 402, August 28, 2019, 2:00 PM - 4:00 PM

Servitization strategy is increasingly recognized as a key source of value with important competitive and economic potential across the globe. Over the years, it has been proven to contribute to territorial performance through the provision of services to manufacturing businesses. Such contribution, however, has been to a large extent consequential to the configuration of local industrial structures, and most importantly, by interconnectedness between manufacturing firms and knowledge intensive business services sector (KIBS). Hence, the process of territorial servitization is highly conditioned to the association between manufacturing businesses and KIBS firms. To date, territorial servitization literature mostly describes the implications of KIBS for service deployment and service innovation in manufacturing, considering knowledge and technological capabilities as a key variable for its success. Nevertheless, the literature is silent on how geographical distance between KIBS and manufacturing companies may infer in servitization success. Therefore, this research attempts to disclose the importance of geographical distance between KIBS and manufacturers. In doing so, we analyse two manufacturing companies located in the Basque country collaborating with KIBS “within” and “outside” the Basque region. Consequently, through a qualitative study based on in-deph interviews preliminary results suggests that partner proximity plays a key role on the KIBS-Manufacturer relationship, and require to be considered as an important aspect for successful territorial servitization.

### **The link between job polarization and productivity in Dutch local labor markets**

Prof. Raquel Ortega-Argilés<sup>1</sup>, Mr Nikolaos Terzidis<sup>2</sup>

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S69-S4 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)

IUT\_Room 101, August 29, 2019, 9:00 AM - 10:30 AM

This paper considers the contemporaneous relationship between two prevalent phenomena in the industrialized labor markets; namely job polarization and skills mismatch. For this we rely on extensive microdata from Statistics Netherlands and estimate quantitative indexes for job polarization and skills mismatch for the Dutch national and regional labor markets between 1999 and 2012. In addition, we advance the labor economics literature by investigating the interplay between job polarization, skill mismatch and regional productivity within a simultaneous equation regression framework.

## Market valuation of GIS-derived spatial amenities

Professor Liv Osland<sup>2</sup>, Dr John Östh<sup>1</sup>, Professor Viggo Nordvik<sup>3</sup>

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S33-S1 Modelling place attractiveness in the era of Big and Open data  
MILC\_Room 310, August 28, 2019, 11:00 AM - 1:00 PM

Hedonic house price models have long been used to improve our understanding of determinants of house prices and their market valuations. In recent years, rich registers containing detailed accounts of home-qualities, location, views, etc. has successfully been coupled with spatial qualities such job-accessibility, distances to transport facilities, cultural institutions and similar, which has increased the explanatory power of the models. However, additional open data sources provided by Open data communities, NGOs, data created by governmental agencies on regional, national and international level are being more or less used. In addition, recent methodological advances in GIS and spatial analysis have not extensively been employed in the development of hedonic price models. The availability of data means that one may integrate more complex patterns in the models, describing the spatial structure of amenities and opportunities surrounding individual buildings. In this paper we expand the hedonic price modelling toolbox with spatial measures describing access to restaurants, cultural amenities and services. In addition, measures describing the viewshed, and more varied measures of access and qualities of green and blue amenities will be employed.

## Regional economic resilience – does scale make a difference?

Dr John Östh<sup>1</sup>, Dr Karima Kourtiti<sup>2</sup>, Prof Peter Nijkamp<sup>3</sup>

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S40-S1 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 28, 2019, 11:00 AM - 1:00 PM

Measuring regional resilience is of great importance both for the understanding of the effects of a shock and for preventing or limiting the effects of the shock. The regional statistics used in studies of regional resilience are often aggregated to larger administrative regions by statistical agencies, which means that variations in resilience on any scale ranging from neighbourhoods to labour-market regional levels are difficult or impossible to estimate. In our study we make use of the Swedish longitudinal register data that contains disaggregate statistics on individual level and with variables describing sociodemographic, economic and work-place related characteristics. Instead of using regional economic resilience statistics to study the rate of migration from less affluent areas, we make use of multi-scale bespoke neighbourhood methods for studying at which spatial scale-level the explanatory power is doing the best job in explaining migration from the studied regions.

The preliminary results indicate that different components used to measure regional economic resilience, respond more or less well to different spatial scales, but the explanatory power is in all tested variables significantly better than traditional regional aggregate levels. The results from this study indicate that regional economic resilience acts at different spatial scales and that improved resilience measures would benefit from using multiple-scale approaches.

## **Dynamics of Central Place Structures derived from Mobile Phone Use: The Case of Sweden**

**Dr John Östh**<sup>1</sup>, Professor Aura Reggiani Reggiani<sup>2</sup>, Dr Laurie Schintler<sup>3</sup>

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S27-S1 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?  
MILC\_Room 309, August 28, 2019, 11:00 AM - 1:00 PM

The Central Place Theory (CPT) originates from the works of Walter Christaller (1933), in which he sets up a set of rules in terms of population threshold and commuting range for the provision of any specific service such as schooling or the running of a hospital. The model became very influential and guided the regional delineation of Estonia in the 1930ies and Sweden during the post-war years. In this study, we revisit the underlying principles of population threshold and commuting range as used in the CPT by comparing the delineation of municipalities (designed to follow the CPT) to the functional distribution and use of mobile phones. We follow (for 24hours at a time, then phone IDs are renewed) the diurnal mobility patterns of phones over the course of a week. We have no information about the phone user, but we have geocoded data that can be used to link user to likely socio-economic and demographic belonging on the basis of the night-rest locations of phones. By observing duration and timing of trips, and the socio-economic and demographic characteristics of the area of origin, trips are categorized into commuting, service trips, long-distance travel and other trips. By comparing trip-characteristics and flow-direction to delineations of regions, municipalities, and city parts we can compare to what extent observed phone mobility replicate the geography of the functional regions on different hierarchical levels.

## **Gendered cities: Studying urban gender bias through street names**

Dr. Dolores Gutiérrez-Mora<sup>2</sup>, **Dr. Daniel Oto-Peralías**<sup>1</sup>

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G10-O2 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 9:00 AM - 10:30 AM

This paper uses text analysis to measure gender bias in cities through the use of street names. Focusing on the case of Spain, we collect data on more than 12 million street names to analyze gender inequality in urban toponyms. We calculate for each Spanish municipality and for each year from 2001 to 2018 a variable measuring the percentage of streets with male names over the total number of streets with male and female names. This indicator of street gender bias is useful as a cultural measure of gender inequality at the city level, which arguably reflects the attitudes about the role of women in society. Our results reveal a strong gender imbalance in Spanish cities: the percentage of streets named after men over the total named after men and women is higher than 80%. We also observe that there are substantial differences across the Spanish regions, and that, concerning new streets, gender bias is much lower, although if we aim to achieve a balanced representation of men and women in cities' toponyms, more prominence should be given to women in the street naming process. In the final part of the paper (work in progress) we analyze the correlation of our indicator of gender bias in street names with the cultural factor it is supposed to capture, and how political factors affect the dynamics of street naming process from a gender perspective. This research has important policy implications since it helps quantify a phenomenon largely overlooked but with potential consequences given the strong symbolic power attributed to street names.



## **Spreading civilisations: Ancient colonialism and economic development along the Mediterranean**

**Dr. Daniel Oto-Peralías<sup>1</sup>**, Dr. Dimitris K. Chronopoulos<sup>2</sup>, Dr Sotirios Kampanelis<sup>2</sup>, Dr John O.S. Wilson<sup>2</sup>

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S25-S2 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 2:00 PM - 4:00 PM

This paper investigates the long-term effects of ancient colonialism on economic development. In an early form of colonisation, the Phoenicians, Greeks and Etruscans spread around the Mediterranean from the 11th to the 6th centuries BCE transferring their superior technologies and institutions to new geographic areas. We find that geographic areas colonised by these civilisations are more developed in the present day. Our results hold after controlling for country fixed effects and splitting the sample by continent. Moreover, our findings are robust to the use of alternative measures and different historical data sources on ancient colonies. Overall, the results suggest that ancient colonialism along the Mediterranean left a positive economic legacy which persists today despite two millennia of historical turbulence.

## **Residential prices in movida areas: up or down?**

**Prof. Elisabetta Ottoz<sup>1</sup>**, Dr. Piermassimo Pavese<sup>3</sup>, Dr. Lisa Sella<sup>2</sup>

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S33-S2 Modelling place attractiveness in the era of Big and Open data  
MILC\_Room 310, August 28, 2019, 2:00 PM - 4:00 PM

In the last three decades European cities have been affected by a particular type of noise pollution stemming from recreational activities generally located in the city centers, the so-called movida. The adverse environment for an apartment located in a “movida” district will result in a lower market value as compared to an apartment with similar characteristics, except for recreational noise. This occurs because potential buyers reduce their demand, as they discount present value of the costs of annoyance, loss of tranquility, and possible health effects. A measure of the noise-induced damages is the difference between the market-determined values of the two apartments. On the contrary, some claim that the price per square metre of properties has increased after “movida” developed, at least in certain districts, which were previously dilapidated and where nighttime economy was seen as a means to restart an area. Patrigest, an Italian company specialized in Valuation and Advisory for real estate, conducted in 2011 a research in Rome and Milan reaching the conclusion that excessive recreational noise depreciates the real estate’s value by 10 to 20% . The two statements are not necessarily contradictory because we face a fragmented situation where two neighbors may report very distant night experiences, according, for instance, to the location of bedrooms. If bedrooms overlook a protected courtyard, the estate is rather quiet and inhabitants may not suffer from noise pollution, but enjoy the lively atmosphere at no environmental costs.

Specifically, we address the following two research questions:

1. Do housing market responses to the noise pollution from recreational activities evidenced in previous studies from urban rail or traffic noise?
2. What are the underlying mechanisms that drive heterogeneity in housing market responses?

The aim of this paper is to examine the effect of recreation noise on house prices. We use an original highly detailed housing transactions dataset from the City of Turin covering the period from 2017 to 2018. Using

data on all recreational activities placed in the Turin in 2018, we calculate the distance from every property that is sold to the nearest commercial activities. A property represents not only an amount of structural characteristics, but also a set of specific locational characteristics. Disamenities have a negative effect on house price, which means people have a low demand and do not have the willingness to pay more for these characteristics and we use hedonic model urban to estimate this discount.

### **Territories: management of complex systems for sociospatial equity in Africa**

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S12-S1 Socio-spatial equity in the light of post-industrial restructuring, modeling exercises in Africa and Asia  
IUT\_Room 205, August 30, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

### **Revisiting the link between resource windfalls and Fiscal Lazy Collection for local mining economies in Chile**

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G06-O7 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 11:00 AM - 1:00 PM

Curse resource literature argues that resource windfalls, such as those derived from a price boom commodity, crowding-out several determinants of long-term incomes (Papyrakis & Gerlagh, 2006). While empirical literature tests this theory for inter country contexts, there is not similar attention to explore it for subnational governments. This different spatial scope would reveal how the low-tier governments would strategically behave for covering the local costs according to the resource windfalls. Thus, any strategic behaviour will directly impact the local community well-being especially due to the key role played by subnational governments to provide local public goods. We contribute to this gap analysing how the resource windfalls from mining taxes crowds out the local collected revenues such as the residential property tax and commercial property tax by means of the case of Chile. Using a panel data for 345 Chilean municipalities between 2008 and 2017, we pursue the causal effect derived from Fiscal Lazy Collection hypothesis measured as the cross substitution between an additional monetary unit received from windfalls. We take advantage for exogenous allocation rule for distribution of mining taxes in the mining municipalities via National Mining Code. Our results do not reject the hypothesis, we observe that mining taxes crowds out property tax collection. Tax laziness is maintained after considering potential endogeneity and heteroskedasticity imposed by spatial autocorrelation. The results suggest the need for local policies focused on discouraging strategic behavior in the collection of local taxes in mining municipalities.

### **Social Justice for Smarter Cities: Digital Divide and Social Policy**

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In our urban world, cities are growing in both number and size, while they become increasingly complex and multi-faceted living and working areas. Smart city approaches refer to innovative and knowledge-based solutions to the threats and challenges faced by urban agglomerations. Clearly, this new understanding aims to improve the quality of life in urban areas. The transformation to a smart city represents a strategic approach to urban planning for improving life quality indicators. A smart city aims to give smart responses to economic, cultural, ecological and social issues.

In this study, the disadvantageous position of citizens who are not able to benefit from the opportunities offered by smart cities -due to the negative effects of factors such as age, gender, education, mental and physical health and income- are discussed. The scope of the research is an elderly, women, low educated persons, mentally and physically disabled persons and poor people, who face relatively strong barriers in access to technology and its use. In a multi-faceted and multi-disciplinary approach and with the help of an integrated literature review and case studies, this study aims to raise awareness of this digital divide in smart city discussions.

In this study, the question of "under which condition is social policy a facilitator of smart city policy" is addressed. It should be noted that, one of the main purposes of social policy in a smart city is to enhance the life quality of city residents. However, social policy refers to increasing the quality of life in a more fair way and a wider social base. Clearly, local social policies are an important tool in combating the digital divide. In addition, social policies do not only provide solutions for technology-based issues of smart cities, whether smart or not, but it also contributes to social justice in cities.

Obviously, having a smart city label does not mean having more liveable cities in itself. Clearly, not any smart city initiative will balanced urban quality of life automatically. Better living conditions in smart cities can be achieved by a combination of elements such as individual participation, good governance, more educated people and a better technological infrastructure. In the present study, we argue that digital technologies can be more accessible and useable for more city residents through social policy. Moreover, it means an increase in urban quality of life shared by more people in smart cities.

## **Valuation of Human Capital and Gender Wage Gap in Europe**

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This paper investigates the gender wage gap in relation to the multi-dimensional human capital measure across 17 European countries. We employ a definition of human capital, which measures a set of classical and novel human capital components, including (i) formal education degree and field; (ii) total work experience and work experience related to current employment; (iii) cognitive skills in literacy and numeracy domains; (iv) task-specific cognitive and non-cognitive skills, measured by the on-job use of skills and frequency of performing specific job tasks. Up to date, the role of cognitive and task-specific skills have had a limited empirical evidence in the gender wage gap literature. We narrow down this research gap relying on the PIAAC (Program of International Assessment of Adult Competencies) data and applying Gelbach (2016) decomposition methodology. Our study verified that gender human capital gap should be addressed as a multiple of numerous components, which altogether shape human capital profile. However, each component has different valuation on the labour market and, thus, different effect on the gender wage disparity. The analysis revealed that occupation-/industry-specific work experience and task-specific

cognitive and non-cognitive skills are the most rewarding human capital attainments. These are also the characteristics revealing systematic male-favouring gender gaps. Literacy and numeracy cognitive skills matter relatively less than their actual on-job use, suggesting that cognitive skills are valued when directly applied and developed at work. Unlike the studies stressing the decreasing importance of human capital in gender wage gap assessment, we argue that human capital cannot be generalized. Therefore, human capital should be viewed as a combination of multiple characteristics and traits, each having specific valuation on the labour market and, thus, particular role in explaining the gender wage gap.

## **Underground Built Heritage as catalyst for strategies of community engagement and regeneration policies**

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S47-S2 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 2:00 PM - 4:00 PM

Underground Built Heritage (UBH) is a unique cultural resource, context-specific and characterised by an historical and cultural exclusivity, which influences people's sense of belonging and of 'ownership' of particular localities, as well as daily routines, local rituals, traditions, and atmospheres. Its significance contributes to individual and collective identity, social cohesion and inclusion, and represent a valuable resource for the sustainability challenge. In particular, it has the potential of catalysing urban/rural regeneration, raising community awareness and making local communities more resilient to globalised systems of production and consumption by preserving their unique environmental and cultural aspects. Although UBH success stories have captured the attention of the world, this resource's valorisation finds relevant constraints, such as knowledge gaps and geotechnical and geo-environmental concerns. This paper takes origin by the recently started Cost Action CA18110 "Underground Built Heritage as catalyser for Community Valorisation" (2019-2023). As main reference for promoting a UBH sustainable use, it uses UNESCO "Recommendation on the Historic Urban Landscape (HUL)". It implies the application of a range of traditional and innovative tools, based on civic engagement, knowledge and planning tools, regulatory systems, and financial tools to adapt to different local contexts and built heritage. However, the HUL approach demands for a cultural transition to make planning systems mature. This process can be considered as a sustainability transition, which requires further changes in society and implies complex and uncertain processes, mainly depending on experimentation, learning and sharing ideas. These processes demand to acquire and test tools for encouraging dialogue and engaging stakeholders across society, by stimulating and facilitating communities' empowerment and connecting natural, social, cultural, political and economic environments, gauging impacts across different spheres of life, and grasping the importance not only of 'hard' but also of 'soft' infrastructures". The paper investigates two community management tools - such as Strategic Stakeholder Dialogue (SSD) and Transition Management (TM), and their integration into a new tool, the Strategic Transition Management (STM), based on local communities' experiments and empowerment, and a multi-level strategic dialogue (e.g. Living Labs). Finally, it describes objectives and outcomes, which reveal practices, imaginaries and local cultures associated with the UBH, renews interpretation, and stimulates new knowledge and the perspective vision of local communities. UHB landscape might become a place of equilibrium for nature, identity and attractiveness, by re-associating multiple uses and giving capacity for development at all levels and all temporalities while generating positive and self-sustaining "natural" interdependencies.

## **The role of regional entrepreneurial ecosystems in the occurrence of productive firms**

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S19-S1 Regional Entrepreneurship Policy  
UdL\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

The local knowledge stock and R&D has a particularly important role in creating new and productive firms, since it serves as a source of entrepreneurial opportunities. However the different contexts may influence the impact of these spillover effects. The effect of different industrial structure, organizations, universities and other factors have already been investigated, but separately from each other. The regional entrepreneurship ecosystem consists a set of interconnected actors, organizations, institutions and processes. Entrepreneurial activity serves as an output of the entrepreneurship ecosystem and it provides the background for individuals to create opportunities for innovation. However productive entrepreneurial activities also vary across regions, as the regional conditions of individual and institutional factors within entrepreneurship ecosystems are different. Therefore this paper addresses the question whether the quality of regional entrepreneurial ecosystem has impact on the occurrence of productive firms. Data for 2011–2014 years have been collected from the regional dataset of Global Entrepreneurship Monitor, OECD Patent statistics and Eurostat. The modified rate of high-growth oriented firms has been applied as dependent variable. It serves as a measure for productive entrepreneurship, since it captures not only the number of new workplaces (as in the original measure of high-growth orientation), but also the innovation-orientation, technology use and export-orientation. In order to capture the effect of local knowledge, the number of patents and the high-qualified human capital have been applied. The quality of regional entrepreneurial ecosystem has been determined by the Regional Entrepreneurship and Development Index (REDI Index) and regions have been clustered through their REDI Index scores. The first results suggested that the lack of efficient entrepreneurial ecosystem may hinder the occurrence of productive firms. The effect of patents and high-qualified human capital seems to be smaller in regions that have a weaker performance in terms of entrepreneurial ecosystem. While regions with more efficient ecosystem may rather provide a supportive environment for productive firms as the patents and high-qualified human capital have indicated more significant impact.

## **Lost in Translation: The Challenge of Institutional Factors in Comparative Studies of Transaction Processes and Costs on the Housing Market**

**Dr. Peter Palm<sup>1</sup>, Dr. Ola Jingryd<sup>1</sup>**

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S26-S1 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

## **The use of retrospective CBA to assess the long-term effects of infrastructure projects**

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S52-S1 Joint SBCA ERSA Session on Evaluation  
IUT\_Room 408, August 30, 2019, 9:00 AM - 10:30 AM

A retrospective exercise is an opportunity to learn and improve. This is recognised by the European Commission and it reflected in the regulatory obligation to systematically carry out ex-post evaluation of Cohesion Policy Programmes. A specific evaluation effort concerns major infrastructure investments which represent an important part of the Cohesion Policy expenditures. Recently, the DG REGIO has launched a round of ex-post evaluation studies addressing major projects in four different sectors: transport, environment, energy, ICT and RDI. The scope of this effort is to look retrospectively at 10 of major projects co-financed by the Commission over the period 2000 to 2013 under each of the four above-mentioned sectors with a consistent evaluation framework.

This paper draws from the first two studies which involved the evaluation of 20 projects (ten in the transport sector and 10 in the environment sector) carried out by an international consortium led by CSIL. In particular, the paper focus on the discussion of the evaluation framework developed to consistently assess a set of infrastructures. The original contribution of such framework is that it combines retrospective CBA with qualitative evaluation of the factors that can influence a project's performance. The approach involved extensive field work and interaction with stakeholders to collect data and information used to prepare the retrospective CBA. This information was also used to reconstruct the project history and to assess effects that, although observable from an ex post perspective, are difficult to translate into monetary terms as well as to identify the key drivers of observed project performance.

In fact, the objective of this evaluation exercise was not limited to verifying the correctness of the ex ante CBA and/or discovering deviations from the ex ante results. Rather the goal was also to analyze the long-term contribution of major projects to economic development and well-being. Therefore, the methodology goes beyond a simple update of the ex ante CBA with observed data. Rather, the added value comes from performing a new CBA from today's standpoint and understanding the reasons why some deviations occurred.

The paper argues that retrospective or intermediate CBA (when appropriately implemented and integrated with qualitative evidence) is a valuable tool for policy learning. If this exercise is part of the project cycle and feeds into the decision-making process, the lessons learned can be used to improve the ex ante appraisal process by taking corrective action to counteract forecasting errors and spur result-oriented behavior.

## **Spatial proximity to cultural facilities of European citizens: empirical analysis and policy implications**

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G18-O1 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 9:00 AM - 10:30 AM

In a context where social inequalities are high and generalised discontent keep growing, the role that participation in arts and cultural activities can play in the achievement of broader social policy goals, such as countering social exclusion, is increasingly addressed in the European public policy debate. Culture can "bring Europeans together to experience what connects us instead of what divides us" (European Commission, A New European Agenda for Culture, 2018, p. 1).

This paper looks into one of the aspects which might act as facilitators or bottlenecks to the propensity of an individual to take active part in cultural life. In particular, this work focuses on the proximity patterns of cultural venues in different European cities, providing an initial comparative measure of population covered by cultural offer. Using geo-located data on museums, theatres and cinemas for a diversified sample of 179 cities from 28 European countries coming from the “The Cultural and Creative Cities Monitor” – a novel dataset first released by the European Commission in 2017 – and population data.

The paper will address three main research questions: In Europe, how many people can reach cultural facilities in a reasonable amount of time? Are the proximity / distribution patterns of cultural venues related to the size of cities? To which extent are cultural venues reachable by public transport?

The paper superimposes population data and cultural venues concentration data, along with a basic measure of potential accessibility via public transport, to lay ground for future work extending the analysis to include also socioeconomic data on the local population.

### **Building a gravity model to explore drivers of internal student migration movements in Greece**

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S41-S2 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 28, 2019, 2:00 PM - 4:00 PM

The introduction of gravity models in economic literature to explain variations of flows between different locations, focusing on trade, transportation, economics or population dynamics, has long been a productive field of study. Their application in migration research has often been at the center of attention, investigating internal migration phenomena focusing mostly on students’ and graduates’ movements (Alm and Winters, 2009; Biagi et al., 2011; Pietrzak et al., 2012; Faggian and Franklin, 2014; LeSage and Thomas-Agnan, 2015; Cullinan and Duggan, 2016). The investigation of “push” and “pull” factors, that affect migration decisions, as well as the evolution of migration flows within a country, can be focused either on: (i) individual attributes, like family structure and background, acting as facilitators or blockers for migration movements; or (ii) regional characteristics, where the masses of the origin and destination regions could be determined by their economic and demographical characteristics, e.g. population size and density, unemployment rates, salaries and wages.

The study, first, develops a gravity model towards exploring the student migration flows in Greece during their transition from high-school to university. It explores potential “push” and “pull” regional factors that form the synthesis of the migration flows, focusing on socio-economic regional attributes. Secondly, it aims on exploring students’ decision to migrate by investigating the effect of individual characteristics, such as gender, family background and structure. For the analysis, we use individual data covering a 9-year period (2006-2014), including all student movements within Greece. Data coverage offers an opportunity to investigate an important period for Greece, characterized by structural reforms and income variations, and identify any existing patterns or changes in the factors that affect migration decisions and form migration flows.

The analysis indicates that distance, regional and family characteristics, such as parents’ educational background and occupation type, play a key role in migration decisions, as they are found to be significant parameters. We argue that understanding the main determinants of these migration patterns is fundamental for policy makers to better identify potential actions that could strengthen the attractiveness of a place.

## **Identifying agglomeration and location patterns of economic activities: a spatial inequality-based measure**

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S46-S1 Recent Trends in Regional Socio-Economic Inequalities

IUT\_Room 203, August 30, 2019, 11:00 AM - 1:00 PM

Spatial concentration of economic activities has been analysed in the literature using different indices and measures. However, the use of current methodologies cannot retrieve information about spatially clustered or evenly distributed across the area of interest. In this study, we try to tackle some of the drawbacks in the current methodology based on common inequality-based index as the locational Gini index. This brings up the importance of defining a measure which accounts for these differences, focusing on both concentration of activities and their location patterns. Our aim is to develop a methodology to consider information on the geographical distribution of the activities of interest, potentially due to extensive presence of patterns that may characterize the analysis of spatial data. Building on previous literature (Lerman and Yitzhaki, 1984; Schechtman and Yitzhaki, 1987) we propose a spatial decomposition of the Gini index defined as spatial locational Gini. To test our approach, the properties of this measure will be explored, and it will be illustrated through an empirical analysis focused on different NACE sectors for Italian provinces.

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## **The role of cultural heritage on tourism attractiveness in European countries: analogies and discrepancies**

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G18-O3 Tourism and Culture

IUT\_Room 104, August 29, 2019, 4:30 PM - 6:00 PM

Cultural heritage represents a unique and irreplaceable resource for European countries. The main means to share, experience and appreciate cultural heritage across Europe is tourism. As well as being an enrichment for both individuals and communities and an opportunity for different cultures to meet, tourism represents a significant industry for European economies. The present article focuses on empirically testing the assumption that the presence of tangible cultural heritage (i.e. monuments, museums, landscapes) influences tourism attractiveness of European regions. Furthermore, we are interested in analyzing the analogies and discrepancies that emerge in the functioning of the relationship between tangible cultural heritage and tourism attractiveness across different European countries endowed with dissimilar typologies of cultural heritage. Using panel data on tourism flows at NUTS2 level, a gravity model will be applied on various European countries domestic tourism flows focusing on the role played by the presence of tangible cultural heritage. A further analysis will be performed to understand the determinants of the similarities or differences emerging in the behavior of tourism flows related to tangible cultural heritage across the analyzed countries. Because of the idiosyncratic nature of cultural heritage, we hypothesize heterogeneity



in the results mainly being due to diverse typologies of cultural heritage and dissimilar characteristics of the countries.

## **The impact of cultural heritage on tourism flows: a meta-analysis**

**Prof. Dr. Henri L. F. de Groot<sup>1</sup>, Ms Elisa Panzera<sup>2</sup>**

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G18-O2 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM

Both national and international public institutions acknowledge that cultural heritage plays an important role in boosting tourism flows towards countries. Empirically testing the influence of cultural heritage on tourism attractiveness and assessing its quantitative importance represents a relevant topic in the economic scientific literature and can provide important input for, for example, cost-benefit analyses. Even though a considerable body of literature has been published in the field, it is hard to find consensus on the outcomes. Since tourism is considered by the literature as either a form of trade or a special type of migration, gravity or spatial interaction models have been applied extensively to tourism flows. The present article presents a meta-analysis on existing primary studies that implement gravity or spatial interaction models on tourism flows worldwide. The selected articles include a cultural heritage measure as explanatory variable. Because of the heterogeneity of the adopted measures of cultural heritage, the main focus of the article is on significance and sign of the cultural heritage coefficient rather than on the elasticity. For that purpose, an ordered probit estimation technique is implemented. A meta-analysis on this topic is relevant to increase the awareness on the determinants of inconsistent results throughout different studies. The sample size, number of analyzed countries, time span, the period that is considered, disaggregation level, econometric estimation technique, stage of development of the countries, and inclusion of specific explanatory variables are among the investigated determinants of differences across studies.

## **Housing Demolition and Property Tax Delinquency: Evidence from Detroit**

Ms Camila Alvayay<sup>1</sup>, **Dr Dusan Paredes<sup>1</sup>**, Dr Mark Skidmore<sup>2</sup>

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G13-O1 Real Estate and Housing Markets  
UdL\_Room 106, August 28, 2019, 4:30 PM - 6:00 PM

The purpose of this paper is to evaluate the degree to which the demolition of low-quality structures in Detroit affects property tax compliance. During the real estate crisis, the rate of property tax delinquency exceeded 50 percent. During this time the Hardest Hit Fund (HHF) provided federal assistance to places that were most heavily affected by the housing crisis that began in 2007. Detroit was one of the cities to receive funding. The demolition of dilapidated structures could lead to improvements in tax compliance in two ways. The first is through an amenity effect; removal of blighted structures improves the neighborhood and thus may increase the likelihood that neighbors pay their property taxes. The second is via the existence of spatial contagion in tax delinquency. In this context, we use spatial analysis to examine the effects of demolition on tax delinquency. As a prelude to the full set of results, we find that tax delinquency is reduced when nearby properties are demolished, though we are unable to disentangle the amenity and contagion effects. However, we show that these effects are strongest for nearby properties. The panel nature of the data combined with exogenous shocks generated by demolitions gives us confidence that our estimates are robust results against potential endogeneity. Also, our results are robust when we incorporate additional information on the demolition of land-bank properties.

## **A New Approach to the Estimation of Selective Migration with an Application to Italy**

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S41-S1 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 28, 2019, 11:00 AM - 1:00 PM

This paper presents a new methodology to estimate the self-selection of migrants using an intertemporal random utility maximisation model. This methodology, which accounts for multiple destination choices grouped into nests, overcomes some of the issues typically discussed in the literature, such as the lack of available data on migrants and the presence of unobservable variables. We apply this methodology to inter-regional migration in Italy in the period 1992-2016, and we find strong evidence of self-selection among Italian regions on geographical base. Specifically, we quantify the return to education to be higher in the best Northern regions compared to the worst Southern regions by approximately 2 percentage points, which leads to a comparative higher inflow of skilled workers in Northern regions. However, at the same time, some Northern regions, as Lombardy and Piedmont, also show a relatively high outflow of skilled workers in favour of other Northern regions such as Emilia Romagna and Veneto.

## **Does the implementation of the Schengen agreement boost cross-border commuting? Evidence from Switzerland**

**Dr. Angela Parenti**<sup>1</sup>, Dr. Cristina Tealdi<sup>2</sup>

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S41-S3 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks, IUT\_Room 201, August 28, 2019, 4:30 PM - 6:00 PM

In this paper we study the effects of Switzerland implementing the Schengen agreement on cross-border commuting from regions of neighbouring countries. As vehicles are allowed to cross borders without stopping and residents in border areas are granted freedom to cross borders away from fixed checkpoints, commuting costs are severely reduced. Using data from the European Labour Force Survey, we estimate that the individual probability to cross-border commute to Switzerland in response to this policy has increased by a factor in the range between 3 and 6 percentage points, according to different model specifications. Our result is particularly important due the meaningful policy implications, in a time in which the Schengen agreement is under scrutiny and at risk of termination.

## **A Study on the Characteristic and Conservation Measures for Traditional Residential Area – Case of Gwangyang Urban Regeneration Area, Korea**

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The old city center of Gwangyang town was formed from Gwangyang-eupseong Fortress that was the center of the region for a long time. Currently, urban decline phenomenon has arisen from the decrease in population and growth of unoccupied houses resulting from new town development. As a result, Priority Projects for Urban Regeneration of Ministry of Land, Infrastructure, and Transport of Korea is in motion. 'Hanok(Traditional house types of Korea)' and 'Alley' are conserved built environment that clearly showing the change of residential area and characteristic of life in Gwangyang town. However, Hanoks were worn out and allies lost vitality. The deterioration of housing accelerated the decline of this area.

The purpose of this study is to find the characteristic and to make a conservation plan of the traditional residential area for the urban regeneration of the old city center of Gwangyang.

The results are as follows: 1) The urban tissue of residential area in the old city center has been maintained so far and Hanoks are preserved in various forms. 2) There are several types of Hanok such as southern style folk house, 1970s and 80's improvement one and extended Hanok. 3) Hanoks are generally getting worn out and there is concerned about exacerbating housing problem in high dense Hanok area on a narrow through alley.

In the current trend continues, it will be obvious that Hanok, cultural heritage of the community, are going to be disappeared and entire living conditions are getting worse.

Gwangyang Hanok residences will be regenerated through the following maintenance process.

First, the maintenance of a public house that worsen the living conditions of the surrounding area should be given priority. Also, Hanok which does not have a room occupant, is having difficulties in its own maintenance. It is considered that the support for individual Hanok maintenance is inevitable from the standpoint of the public.

The next step is to dismantle the parts of the extension that lost its need. In the 1980s, the rapidly increasing number of attached buildings, such as doorways, in order to secure housing, have lost their necessity now. If space is secured by the demolition of surplus space, it will be able to reveal the characteristic of Gwangyang Hanok which is characterized by relatively large lots. Also, it is necessary to construct new public housing and inflow of residents by utilizing surplus space.

### **Residential Migration and Commuting Flows: Impact of landscape and Local Labor Market Characteristics in France**

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Migration and commuting flows are two mechanisms reducing aggregate unemployment and accelerating adjustments to asymmetric regional shocks, combined with labor force participation and unemployed workers (Partridge et al, 2012, 2017). In this paper, we focus on the two mobility types (commuting and residential) to disentangle the professional and the residential motivations in both flows. Using zero-inflated negative binomial model (ZINB), we estimate gravity models, explaining both flows between employment areas in France. To capture the impact of local labor market characteristics, we introduce in particular (i) predicted local change in employment using sectoral structure, employment potential for qualified and non-qualified workers (local employment by category/active residents of that category). Different amenity indicators are built to capture local residential characteristics: after testing classical indicators such as presence of protected zoning, share in forest or costal area, we tested indicators built on Corine land cover and following Paracchini et al (2014). We show that flows of qualified workers are more impacted by local

labor market characteristics (origin and destination areas) than flows of non-qualified workers. We also show that heterogeneous landscape at destination increases the residential arrival flows while heterogeneous landscape at residential area increases commuting flows.

### **Tourism and regional resilience. Evidences from European Union**

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S40-S5 Regional Resilience: How can regions survive?  
IUT\_Room 203, August 29, 2019, 2:00 PM - 4:00 PM

Tourism activities are seen as an engine for sustainable economic growth and an instrument for regional convergence, contributing to the catching up of less developed countries and regions. Its performance as convergence producer is highly related to the tourism multiplier effect and the ability of tourism activities to integrate other economic activities. Additionally, due to its dynamism and strong connections with related economic branches, tourism is also considered a resilience provider. However, its influence on both regional convergence and regional resilience is currently understudied, as traditional approaches to the study of tourism impact are focused rather on economic growth generated by tourism activities. This article focuses on identifying the impact of tourism on regional convergence and regional resilience in European Union. We used stepwise regression to evaluate the influence of tourism on both convergence and resilience capacity. The preliminary results of the study showed that the development of tourism in the Union had a strong potential to contribute to the reduction of intra-EU regional inequalities. Furthermore, in particular cases, tourism activities manage to generate higher resilience capacity for destinations. These findings could potentially have important implications for policy making in European Union. The indication is that our preliminary results seem to be supporting the principle of integrating tourism into growth, resilience, and convergence-oriented policies. These results can be used by policy makers to develop targeted interventions aimed at enhancing the multiplier capacity in peripheral and lagging regions in order to reduce regional disparities and increase tourism competitiveness throughout the European Union.

### **The Impacts of Disaster on Tourism Economy in Kyushu Region, Japan**

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G18-O2 Tourism and Culture  
IUT\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM

Kyushu Region is a third largest island in Japan, located southwest of the main island Honshu. Kyushu offers many tourism destinations: hot springs, fascinating history, fresh culinary, natural beauty, and welcoming friendly local people. Many tourists have been visiting there and generate income for the Kyushu area. Similar to other regions in Japan, Kyushu is also known to be prone to a disaster. A strong earthquake disaster in Kumamoto and Oita prefectures, Kyushu Region occurred in April, 2016. Those areas were worst affected, even some tourist attractions around Kumamoto and Oita remain closed. Furthermore, the cancellation of lodging from the number of tourists both domestic and inbound gave growth to a significant impact on the tourism industry. In this paper, a methodology to evaluate the effects of earthquake disaster on tourism consumption in Kumamoto and Oita prefecture will be developed. The input-output table of Kumamoto and Oita prefectures in 2011 will be used to estimate the Inter-regional input-output (IRIO) table. In addition, the tourism final demand also will be estimated. The IRIO table of municipalities in Kumamoto and Oita prefectures consists of 36 sectors and 18 regions including the prefecture border areas

of Kumamoto and Oita prefectures, with the whole country and the world treated as an exogenous sector (for imports and export). The IRIO table will be constructed to calculate the spillover effects on the economic damage between cities and towns in Kumamoto and Oita prefectures before and after the earthquake disaster. Then, the gravity model will be estimated using data from IRIO table to adjust them through repetitive calculations until they corresponded. Hereafter, some numerical simulations will be conducted.

## **The Role of Territorial Capital and Innovative Milieux in Shaping Paths of Development of Central and Eastern European Regional Centers**

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G04-O6 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 4:30 PM - 6:00 PM

Our paper is aiming at the conceptualization and operationalization of the development of the regional centers of Central and Eastern Europe in the framework of the concept of territorial capital.

According to our basic hypothesis, territorial capital is the unique combination of socio-economic and cultural-intellectual capital generated in cities over time and varies from one spatial entity to another. The stock of territorial capital, and the points of emphasis of factors influencing it are in permanent evolution in a similar way to urban development processes and the interactions between the various components are constantly being reshaped. In the background of these shifts we can primarily detect the diverse economic, social, administrative-management, regional functions of cities and their realignment.

In our research programme, we conduct a longitudinal analysis of 95 cities in 10 Central and Eastern European countries (Austria, Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia, Slovenia), identifying the main factors behind socio-economic development. Our objective is to provide a description and evaluation of the innovative milieux and their evolution in the respective cities, presuming that as a product of the temporal evolution of territorial capital these milieux are subjects to change. We presume that cities dispose of diverse components of territorial capital may vary in its conditions, structure and forms of manifestation. The research seeks to detect the development paths of the examined cities determined by the various capital types and the innovative milieux constructed on their basis, and to identify the groups of CEE regional centers characterized by identical development patterns.

Our project is in the stage of elaboration of the framework of empirical analysis, so this paper concentrates on the identification and measurement of elements and types of territorial capital.

## **Digital Applications in Urban Public Transport: a Comparative Analysis of Shared and Sustainable on-demand transport solutions in Germany and Greece**

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G02-YS1 Mobility and Digital Transformations  
IUT\_Room 207, August 29, 2019, 11:00 AM - 1:00 PM

Digital applications are transforming the functioning of cities, proposing solutions to urban challenges. Digital transport solutions have become a representative example of the implementation of sustainable mobility strategies in cities. This master thesis focuses in the case of on-demand Ridepooling and aims to investigate whether on-demand Ridepooling is a sustainable urban mobility solution. Can on-demand Ridepooling contribute to the sustainable development of urban areas and can it really provide solutions to the urban mobility challenges cities face today? What is a sustainable mobility solution and how is it measured? These are the driving questions of this research, that presents an interdisciplinary comparative assessment of on-demand Ridepooling in Germany and Greece. Unique operational data of on-demand Ridepooling in Germany are published for the first time. Operations are predicted and simulated for Greece, where on-demand Ridepooling doesn't exist yet. Moreover, significant literature review on sustainable mobility indicators is presented. The relation of on-demand Ridepooling to the three pillars of urban sustainable development is examined. Furthermore, a selection of interviews with key stakeholders, planners, and transport experts provides unique insights regarding the differentiated paths those two countries are following in shared transport solutions. Finally, policy recommendations are extracted, regarding a) the applicability of digital shared mobility solutions, such as on-demand Ridepooling and b) the synergies between public policies and market forces in order to achieve effective and sustainable mobility solutions for the urban ecosystem.

### **The Role of Accessibility and Spatial Interaction in a Doubly Constrained Model: Evidence for Domestic Tourism Flows in Italy**

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G16-O6 Transport, Land Use and Accessibility  
IUT\_Room 110, August 30, 2019, 11:00 AM - 1:00 PM

Spatial interaction models (SIMs) are extensively used, in many socio-economic contexts (such as commuting, migration, tourism, international trade, communication networks, FDI, citation networks, etc.) to model all kinds of bilateral interactions between spatial units. Typically, municipalities, regions or nations are the reference level of spatial aggregation. However, in this wide literature making use of SIM, very few studies make use of a complete, more proper estimation based on origin and destination constraints (ODC). In particular, ODCs allow to carry out comparative statics (e.g. simulating shocks) while maintaining consistent totals of the origin-destination matrix containing all flows. While ODCs can be numerically approximated for a specific cross-section by sets of fixed or random effects, or by what in international trade are known as multilateral resistance terms, they depend on the explanatory variables in the model, and therefore are dynamic. Their typical nonlinear estimation represents an obstacle, for most researchers, to their utilization. The analysis of tourism flows by means of SIMs has been limited by such difficulty as well. In this paper, we propose an easy-to-use algorithm and software for the estimation and calibration of doubly constrained SIMs. We employ a 12-year panel of domestic tourism flows for the 20 Italian regions, as well as a related database of regional characteristics and tourism push/pull factors for empirical verification and comparative statics. We stress that the proposed calibration method/software may be applied in SIMs for any other type of origin-destination flow data. In addition, based on the cost-sensitivity parameters emerging from the calibration of the doubly constrained SIMs, the accessibility of the most touristic regions will be computed, in order to test whether the most attractive regions in Italy are also the most accessible.

## **Considering environment, health and inhabitants' wellbeing in urban planning: a modeling approach**

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S56-S1 Transport, health and socio-territorial disparities  
IUT\_Room 108, August 28, 2019, 4:30 PM - 6:00 PM

Cities, as major population and activities hubs, have to consider in addition to their operational constraints, environment and human health preservation, and especially in protecting their inhabitants in all their diversity. Traffic and domestic heating are crucial aspects of a functioning city. They and are recognized as major anthropogenic urban sources of air pollution and noise, and consequently as major sources of health impacts in urban context.

A geo-localized modelling method has been developed. The focus was put on supporting decision making by proposing an integrated approach, replicable on different cities. After a diagnosis of the current situation based on local data, prospective scenarios are designed, especially regarding traffic and energy production. Then punctual, linear and surfacic emissions are modeled and resulting air pollutants concentrations within the city are estimated using a Gaussian air pollution dispersion model. Finally, effects on inhabitants' health are determined, including effects on more sensible population either from a health point of view (children, elderly) or from a social one.

The method was successfully applied in two contexts, Strasbourg (France), and New York City (USA), each time in partnership with local stakeholders. In the first case, data were provided by the city and the local partners whereas in the second case they were mainly found in the open data systems. It is adaptable to the stakeholders' needs: focus on air pollution in New York City, air pollution and noise in Strasbourg.

This approach may be reinforced with other indicators such as greenhouse gases emissions, urban heat island, cost-benefit analysis or affordability of the solutions on short and long term.

## **European Capitals of Culture: unkept promises or real development assets?**

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G04-O9 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 2:00 PM - 4:00 PM

Since 1985, the designation of the European Capital of Culture is an object of intense public attention. As of 2008, the designation has become competitive, with significant amounts of resource invested by bidding cities and with consequent high levels of social pressure and expectation from local civic societies. The program has been thought to foster stronger links and exchanges among European citizens, and has met a growing success and an increasing cultural and socio-economic impact. The competition between the cities is very intense and the initial investment made by the local communities to participate is high. Various cities have attempted to capitalize the title in different ways, but it is not easy to make long-term evaluations of the program's actual outcomes for a specific city. The different types of performances of the cities that have had this recognition lead to wonder what are the variables of a success that has lasted for this initiative. This paper aims at carrying out a meta-analysis of the impact of ECoCs as measured in the available, vast and rapidly increasing literature. We classify such studies in terms of the preferential orientation of each capital in terms of one of the 5 macro-categories of developmental factors as developed in the theoretical framework of system-wide cultural districts. The meta-analysis allows us to draw some general conclusions



and policy implications for future ECoCs and about the overall significance, viability and sustainability of the program, focusing our attention on the impact that the policies adopted to date have also had in terms of land and local development.

### **Urban regeneration with large neighborhoods to achieve a decrease in sprawl: educational experiments**

**Dr. Piero Pedrocco**<sup>1</sup>

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S47-S2 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 2:00 PM - 4:00 PM

Starting from three educational experiments conducted at the University of Udine, the contribution attempts to identify a new viable path for urban planning. It is a matter of moving from the key diagram to the urban project and urban design, equipped with models and volumes, and then going back, questioning the urban project to draft a local neighborhood plan. At the basis of the reasoning conducted is a reversal of the traditional urban planning process. This usually starts from the plan that offers homogeneous zones to the market on which to expand or complete the consolidated city. Here, on the contrary, starting from a possible example of an idealized city, we want to put it into question with the plan, which is inspired by it. It is therefore proposed to identify models of future cities, respectful of the models of the past, returning to the compactness and livability of the Italian Renaissance city and more generally of the European city. And this without undermining the need for an architecture that is always innovative and in step with the times. In this way it is also treated the theme of land consumption, linking it to a better balance between city and countryside. An equilibrium put in difficulty by the sprawl of the last decades, with the random spread of civil and industrial buildings throughout the territory of the plain between the consolidated cities. The contribution proceeds through the examples of the projects carried on, which, although utopian and didactic, are focused on the concrete research of new ways and methods of planning the future city. A research that could provide, even if in littler districts, useful results for the practice, even without the need to change too much the current planning laws.

### **Labour mobility effects of a firm level shock**

**Prof. Guido Pellegrini**<sup>1</sup>, Dr. Augusto Cerqua<sup>1</sup>

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S51-S2 Counterfactual methods for regional policy evaluation: Social and labour policies

IUT\_Room 304, August 30, 2019, 11:00 AM - 1:00 PM

In a period dominated by an economic crisis, there is a greater demand for place-based policies that help in the areas most influenced by the effects of the crisis. Most governments offer subsidies that claim to protect jobs, reduce unemployment and foster local economic activity, particularly in disadvantaged geographical areas. However, place-based policies have a significant influence on both the local and neighboring labor markets, also linked to the possibility of commuting. The reason is that while restricting where businesses may locate in order to receive subsidies or tax, there are few constraints on whom subsidized businesses must hire. The purpose of this paper is the study of the labor mobility response in respect to supply shocks. In particular, we want to assess the effects on employment, both of the subsidized company and the area where it is located, of an incentive for the replacement or establishment of new capital. The study uses two particular and rare archives: the INPS archive that follows over time individual workers identifying where they work, and that of Law 488, which allocates incentives to companies

following a scheme that uses a ranking with discontinuity. Using a multiple regression discontinuity design, we can evaluate the effects of incentives on the labor market, identifying where new hires are coming from (from the LLS, from neighboring ones, from outside, unemployed, students, others), and evaluating human capital. This allows us to understand the geographical extent and wage effects of a place-based policy on the local labor market.

See extended abstract online.

### **A new theory of the development of the Arctic and the North: a multi-scale interdisciplinary synthesis**

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G04-O2 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 11:00 AM - 1:00 PM

An ambitious task has been undertaken to create a new theory of colonization on three main sources - the Soviet development school, the European school of regional science, the North American school of frontier. The tradition of linking the development process with the location of productive forces is taken from the Soviet school. From the European regional science, the idea has been taken that any social process in the regions is subject to general laws in the spirit of the theory of endogenous economic growth. From the North American frontier theory, an idea was taken of the innovative search for new opportunities for economic development in the newly developed territory.

A comparison has been made of the nature of the development process then and now, and it had been concluded that today, in general, the modern process of economic development is characterized by a significantly greater spatial unevenness, center-periphery, multiactor, unprecedented role of resource corporations as agents of glocalization; the heterogeneity of time according to the stages of the development process (which was expressed significantly weaker in the planned administrative-command model of colonization) and the enormous role of project management (project financing, project legislation, tailored to a specific project of a new resource development). The peculiarity of modern development is that it implies the coexistence of two schemes - mastering "from scratch" and on the foundation of the former infrastructural development, which have different effects and patterns on territorial structures, development cycles, etc.

Integration of global and local scales is considered on the example of resource corporations as superactors of colonization of the Northern territories, in whose activities both a global and a local element are present. The study of spatial strategies and behavior of MNCs is first used to study the territorial configurations of new development in three northern and arctic territories: for example, the territorial structure of licensed areas of the oil and gas corporations of Ugra, the oil capital of Russia, the territorial structure of license areas of oil and gas companies in the Arctic Nenets autonomous Okrug, and the territorial structure of NovaTEK in the Yamal, the gas capital of Russia.

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### **Complexity of Innovation in Education: The case of Bilbao City**

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G07-O1 Innovation and Regional Development  
UdL\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

To speak of education, training, and technology from a territorial level where the city as a complex system with educational institutions in and for society, these heterogeneous and interacting elements. Interdisciplinarity is needed to solve the problem of the evolution of innovation in education and the change that universities have now and for the future, a permanent challenge for a complex society in constant transformation.

To be able to analyze the functionality of the different subsystems within the territory within the general system and respond to the demands of its users and society and, at the same time, anticipate the realities that present themselves should be one of the priorities, focusing on processes of creation and management of new knowledge.

The importance of institutional data management and the use of digital information assets is well known, not only to satisfy academic needs but also for the establishment of a culture of decision-making based on data, but the question to be resolved within this complexity would be whether we are technically prepared and socially committed enough to facilitate a change that remains in time and being aware that it can revert to an improvement in the educational reality, after the failed attempts of many reforms implemented in many countries in recent years in the field of education.

Many factors affect this change (use of ICT, internationalization, fundings, collaborators, modernization of teaching and learning methods, processes, organization, teaching staff, quality, the reality of the territory in which they are located)....

The needs and possibilities of each territory and its respective society must be taken into account: the ageing of the population, lack of young people to take over, change in the productive model of many cities based on technological services, digital economy, energy, health...

The objective of this work is to offer a descriptive analysis that may show to what extent the territory and its socio-economic configuration implies a complexity for innovation in education through the study of the case of the city of Bilbao, through their respective educational agents and its transmission to the rest of the economic sub-sectors in order to question and/or validate in later research the role of cities and their territorial planning as guarantors of the development of innovation in Education.

## **Union, International Trade and Unemployment**

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G05-O2 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 2:00 PM - 4:00 PM

We adopt Montagna and Noccas (2013) unionization framework and introduce search frictions into homogeneous sector to study how the unions bargaining power affects the unemployment rate before and after trade. When the unions bargaining power increases, the minimum production threshold required to stay in the market decreases. It allows the entry of relatively less productively firms. The selection soften effect may be generated through the reduction in the toughness of competition via different labor demand elasticity of firms. Firms with higher productivity pay higher wages to labors. That is, raising unions bargaining power do harm to the firms with higher productivity, and then it may leave the market space for firms with lower productivity. The number of entrant is decreasing and the number of surviving firms depends on the magnitude of unions bargaining power. In autarky, we find out that when the unions bargaining power is low enough, and increase in the bargaining power would cause the fall of

aggregate unemployment rate. The effect of increasing in surviving firms outweighs the shrinking in average labor demand of firms. When the bargaining power is in the median level, the number of firms is still increasing but the average labor demand per firm decreases significantly. The later effect dominates the former; therefore, thus the total number of unemployed labors is increasing. When the bargaining power is high enough, then the unemployment rate increases in the bargaining power. After international trade is allowed, firms now could choose to serve domestic and foreign market or only producing for domestic market. Labor unions negotiate wages with distinct profit centers within a firm, that is, domestic and exporting departments. Labors in each department may earn different wages because of the variable price elasticity faced by different departments. We highlight the case that unions have asymmetric bargaining powers in two countries. Increasing in unions bargaining power of one country always lowers the total number of employed labors in exporting sector, while the number of employed labors in domestic sector depends on the trade-off between the magnitude of trade openness and bargaining power, so does the unemployment rate.

### **The ecological value of urban regeneration. Green as a founding element of the project.**

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S47-S1 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 11:00 AM - 1:00 PM

Starting from interpretative and functional matters, the paper analyzes the complexity and the themes of the regeneration, focusing the attention on the possible ecological strategies that the project must face.

It is necessary to frame the regenerative approach from a terminological point of view, underlining the peculiarities and differentiating it from the other terms used in past: recovery, renewal and rehabilitation; not to incur in a fast trivialization.

The regeneration must face and accept the experimental and innovative character of its process, with a long term sense-making vision, seeking equity and integration through unpublished formal and functional situations.

The green public spaces will have a key role how innovative elements for new forms of interaction between “urban” and “nature”. The regeneration will look for a new cohesion considering the public spaces through a multi-level and multi-disciplinary approach.

The “Cities and Biodiversity Outlook” reports questions and challenges to the urban design. It points out, in the biodiversity investigation, a strategic element to develop urban resilience, building up complex natural habitats, rich and attractive, redefining the environmental governance agenda.

The core of the paper is the experience of the “Re-active Strategies” project, started in 2016 at Politecnico di Milano, Mantua Campus. The reading of around eighty projects has delineate some themes that focus the characters of urban regeneration, between plurality of actions and activities to revitalize marginal places inside the cities.

Starting from the development of the social and ecological resilience strategy and promote a network of urban spaces is underlined the necessity to insert strong natural elements in the urban centers, facing the attention to the design of the contact frame between city and nature.

The regenerative approach needs to know the characters of the places pay attention to verify the design coherence of the urban actions, both to the local and territorial scale.

The research ultimately underline five strategy and work themes, in which it is deduced the needs to: assume the history and the historical evidence as a design materials; recognize the value and the role of the new ecosystem; deeply integrate the project in the policy agenda; adopt a multi-scale approach to generate attractiveness on the main points of the urban grid and start a progressive planning process refers to a multiple visions, defining what is called “open design”.

### **Solar Power Diffusion in Urban Area: Complexity and Structural Changes**

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G14-O2 Energy and Ecological Transition

MILC\_Room 410, August 28, 2019, 2:00 PM - 4:00 PM

Decentralized generation of solar power has become one of the great energy alternatives for the world and it is in its first stages of dissemination as a new disruptive technology, with diverse effects on the economic development and the organization of the urban centres, generating structural changes that reach the functioning of the energy market, the urban centres dynamics and the household's behaviour whose play a simultaneous role as consumer/producer. Currently, there are few models for diffusion of decentralized solar generation which despite of using agent-based. We designed a diffusion model to overcome the existing limitations by modelling a city of hypothetical topology that integrates several layers and add several micro and macroeconomic variables that are important for a systemic understanding of the problem. Relevant contributions include:

- a.) a model capable of dealing with the problem from the urban centre perspective;
- b.) spatially oriented diffusion that depends on the topological distribution of residences in an urban centre;
- c.) a real time-line with hourly solar radiation incidence, consumption and production in the short-run, synchronized with monthly households decision and accountability going up to 10 years of projection.
- d.) integration between the physical network (IEEE 33 standard) and economic decisions;
- e.) endogenous price setting considering different rules and market regulation framework;
- f.) cash flow of system operators and households; and finally,
- g.) evaluation of public policy, such as subsidies, minimum prices, tax and investments.

### **Wage Differentials in Brazil: How far agglomeration explains?**

Mr Jefferson Pereira<sup>1</sup>, Mr Adelson Silva<sup>2</sup>, Mrs Roberta Rocha<sup>3</sup>

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G15–YS1 Population, Migration and Mobility Behaviour

IUT\_Room 108, August 29, 2019, 11:00 AM - 1:00 PM

The main purpose of this study was to identify the contribution of the worker, firm and region's effects, focusing on the density of employment as a measure of agglomeration, on the wage differential in the Brazilian regions in the period from 2010 to 2014. The analysis was made in panel, from RAIS data, which allows the monitoring of the individual over time. Initially, mincerian equations was applied to the OLS models, with analysis focused on the fixed effects results. Afterwards, the regression method was applied by instrumental variables in order to eliminate the possible endogeneity of the employment density. The results indicated that there is a wage differential, although small attributed to the density of employment, accordingly to the literature. It has been found that education, the sector which the worker is inserted, and the size of the firm have a strong influence on wage differentials, especially to, higher level education individuals, workers form the industry sector and those workers of big firms. Finally, it is conclude that the

density of employment, characteristics of individuals, firms and region contribute to the existence of wage differentials.

### **Creative tourism as a challenging proposal for peripheral territories: insights from an ongoing case study in Portugal**

Dr. Maria Gato<sup>1</sup>, **Prof. Margarida Perestrelo<sup>1</sup>**, Dr. Elisabete Tomaz<sup>1</sup>, Dr. Ana Rita Cruz<sup>1</sup>, Prof. Pedro Costa<sup>1</sup>  
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G18-O4 Tourism and Culture  
IUT\_Room 104, August 30, 2019, 11:00 AM - 1:00 PM

In many countries around the world, the tourism sector has been gaining particular relevance in the development of several cities and regions. However, it has also been raising several concerns about the negative impacts of the growth of these activities. In Portugal, several cities seek to benefit from the wave of tourist attractiveness that has been projecting the country in several international rankings. At the same time, rural areas and small sized cities try to find new tourist products as alternatives to counter the congestion and massification problems of the large metropolis tourism activity by developing creative initiatives based on tangible and intangible local projects.

For peripheral territories, such as rural areas or small sized cities, investing on creative-based tourism as a wide process involving artistic creation and the co-creation or accumulation of aesthetic and symbolic knowledge can be a good and complementary strategy for territorial enhancement. From a planning perspective, the idea of linking creative dynamics and tourism is generally supported by arguments such as: an opportunity for territorial, economic and social regeneration to diversify the structure of the tourism sector; to retain population and revitalize their cultural and social heritage; to enhance creative milieus and foster organic territorial dynamics, reflecting the “sense of place” and the unique and intangible characteristics of local communities (Richards & Wilson, 2006).

Thus, there is a growing interest in understanding how cultural and creative activities can drive the development of innovative and sustainable tourism solutions. The way tourists can be embedded in the local cultures to find out about place identities and explore the authenticity of local intangible heritage highlights the role of tourists as co-creators of knowledge and co-producers of experiences (Binkhorst, 2007), but also the active role that the host communities can (and should) play in the process.

Taking the CREATOUR project as an example — a project currently being implemented at national level in Portugal (Norte, Centro, Alentejo, and Algarve NUTS II regions) that aims to develop and pilot an integrated approach and research agenda for creative-based tourism in small cities and rural areas – this communication intends to present some results of this pioneering experience. The discussion will focus on the challenges of the co-creation process of places and cultural experiences and some expected impacts induced on territories and local communities where the creative-based tourism activities are being implemented.

### **A tale of two cities. Regional development and interregional migration**

**Dr. Rodrigo Perez Silva<sup>1</sup>**, Dr. William Foster<sup>2</sup>

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S41-S1 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 28, 2019, 11:00 AM - 1:00 PM

The usual approach when studying migration is to describe either the characteristics of potential migrants that affect the likelihood of the migration decision, or the place-specific attributes that attract or repel migrants, or, as addressed in more recent literature, a combination of both. In the analysis of the role of the place-specific attributes of origins and destinations, the literature points to differences in unemployment, poverty, and income, among other factors, that influence population migration and relocation decisions. There are, however, different types of potential migrants who respond differently to different incentives and place-specific characteristics. This is especially likely to be true for lagging sub-regions within a sufficiently large primal-city area or country. This present paper aims to describe how different stages of development in a region of origin for emigrants determine migration decisions and whether different population sub-groups are more or less responsive at these different stages of development. Preliminary results suggest that, first, individuals are more likely to migrate when their own region's development is either very low or very high. And that, second, conditional both on the attributes of the destination region and on individual characteristics, the level of economic development of the emigrant's home region selectively affects the migration decision. In particular, early stages of economic development are associated with migration of relatively low-skilled workers, whereas the opposite is true at more advanced stages of development. Empirical results are presented for the case of internal migration in Chile, over the 2000-2017 period.

### **Labor informality and informal settlements: a first approach for Colombian cities**

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G04-O12 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 11:00 AM - 1:00 PM

The concept of informality is understood from multiple contexts, mostly denoting a negative aspect related to the total or partial non-compliance with certain conditions established by regulations. Two of the contexts are the labor market and the housing market. In both, the condition of informality is associated with undesirable situations, in the first related to employment status and in the second related to individual or familial housing conditions. As expected, developing countries are the most vulnerable to cope with informality. According to the International Labor Organization, in countries like Ethiopia, Madagascar and Rwanda, more than 70% of the working population does not have the minimum working conditions. For the particular case of Colombia, based on 2016 data, labor informality is about 50%.

In the case of urban informality, about 800 million people live in informal settlements worldwide. In developing countries, on average, about 32% of the urban population live in places without the minimum housing conditions. For the particular case of Colombia, according to UN-Habitat in 2009, Colombia had approximately five million people in informal dwellings, representing 14% of the urban population. Compared with 31% in the early nineties, it is clear the achievements of the country regarding the improvements in the quality of housing conditions.

Despite the evident relationship between these two types of informality, the literature shows just a small number of studies analyzing the potential relationship between these two phenomena. In order to fill this gap, the aim of this paper is to conduct a first exploration for Colombia, that allow us to understand (1) what has been the dynamics of these two phenomena?; (2) whether or not has been persistent over time; (3) are housing and labor informality feeding back to each other?.

In order to answer these questions, we use data from Gran Encuesta Integrada de Hogares (GEIH), the Colombian household survey, corresponding to 13 main metropolitan areas over the period 2009-2015. From this comprehensive database, it is possible to build indicators that approximate the level of labor and urban informality in each of the metropolitan areas. Methods analyzing these phenomena includes contingency tables, transition matrices, and bivariate probit models. Results show that the incidence of one

informality is closely related to the other, and there is evidence of a stable long-term relationship. The main related factors affecting both informalities are household size and education, with differential effects across economic sectors and regions.

### **Mapping the evolution of information flows between cities: a computational social science approach**

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S29-S1 Mapping flows, movements and cities networks at a European level  
MILC\_Room 309, August 28, 2019, 4:30 PM - 6:00 PM

When studying the organisation of systems of cities, most research builds on the movement of people, goods and capital. Only few studies have analysed the exchanges of information, which is surprising because information plays a crucial role in organising the complex pattern of networks and flows connecting cities. Only recently has information regained attention with studies employing data derived from social media, phone calls or scientific collaborations. In a way this is a return to the start of research on systems of cities, as in the early days information flows received a lot of attention. For instance, researchers used newspapers to analyse the circulation of news, because it was one of the only ways to develop a relational approach of cities. But because of the cost of the data collection, these studies were limited to a small number of cities, and very short periods of time.

Today, thanks to the effort of digitalization of historical newspapers, and developments in data science, it is now possible to go back in time and map the circulation of information with a high spatial resolution. While researchers have shown that these massive digital archives can be used to identify macroscopic trends related to cultural change, very few studies have looked systematically at the geographical dimension of these archives. In this paper, we use Delpher, the digital archive of historical newspapers of the Royal Library of the Netherlands. We look at the spatial diffusion of information between the Dutch cities with a corpus of 35 local newspapers published in 29 different cities. These newspapers have published around 48 million of news-items between 1869 and 1939.

As local newspapers had a limited area of diffusion, we were able to build origin-destination matrices of information flows from 317 cities and towns to the 25 cities for which we have digitalized newspapers. This operation allowed us to map the information field of these 25 cities and its evolution through history. Because of the challenges of mapping this data with such a high spatial and temporal resolution, the visualisation of 'information fields' is complemented with the application of a cross-temporal gravity model used to measure the evolution of the distance decay coefficient across the 70 years that our dataset covers. Obviously, pioneering this method is of importance to apply it to more contemporary resources.

### **Environmental Costs of European Union Membership: A Structural Decomposition Analysis**

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G12-R1 Location of Economic Activity  
MILC\_Room 308, August 29, 2019, 4:30 PM - 6:00 PM

The interest in this paper lies in the environmental costs of the European Union (EU). EU membership requires a series of economic and political changes that should impact the country's production and consumption structures and its trade relationships. These, in turn, will affect \$CO\_2\$ emissions sources and



levels. This is especially true for the former Soviet Union countries that recently joined the EU, given the difference in their levels of development and production structure. Using a structural decomposition analysis we are able to quantify the main drivers of changes in emissions differentiating six components, namely: emissions intensity, industrial structure and sourcing, consumer preferences, final demand sourcing and consumption level. Grouping the countries into five clubs, New European Union countries, Old European Union countries, the United States of America, China, and the Rest of the World, we measure trading pattern changes and their impact on CO<sub>2</sub> emission levels.

### **Estimating road transport costs between and within EU regions**

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S30-S1 Connecting short and long distance perspectives in freight transportation  
IUT\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

Transport costs are a crucial element of any spatial economic model. Surprisingly, good transport cost estimates at a detailed spatial level for the EU are not readily available. In this paper we address this issue by estimating a novel dataset of road freight transport costs for goods for the EU regions at the NUTS 2 level. In the spirit of the generalized transport cost (GTC) concept, we calculate the composite cost related to distance and time for the optimal route of a representative truck. We consider routes between large random samples of centroids drawn from a 1kmx1km population density grid. These transport costs are averaged to obtain an origin-destination cost matrix (in euros) at the region-pair level. The sampling approach also allows calculating the average transport cost within the regions. We separately report the corresponding iceberg transport costs for each pair of European regions, since this is the form of input required by many economic models. We also consider the effect of changes in the components of the GTC in order to evaluate transport policies. We set up a transport policy tool to assess the impact of road-transport infrastructure investment in a region by considering upgrading roads to highways. We apply this tool to study transport infrastructure investment through the European Cohesion Policy program 2014-2020.

### **Estimating wage rigidities in European regions**

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G05-R1 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 2:00 PM - 4:00 PM

The degree of wage rigidity in a region or country plays a crucial role in determining how economics shocks are translated into changes in the level of (un)employment. This is the case both in the real world, as well as in macro-economic models that are used to evaluate fiscal and monetary policy. Most empirical and theoretical models work on wage rigidities operate on the national level. However, it is clear especially in Europe that on the one hand there exist both large and persistent regional unemployment differences, which calls for analysis on the regional level; but on the other hand institutions such labour unions or legislation on wage negotiations make that variables at the national level may also have a large influence on regional wages. This paper therefore estimates wage rigidities at the regional level, but controls for relevant determinants at the national level. We are not the first to consider such a mix of regional and national variables in regional wage regressions, see for example (Jimeno and Bentolila 1998). To the best of our knowledge, however, we are the first to do this systematically on the level of the EU.

As a second contribution to this literature, we argue that there exists an aggregation bias when estimating wage rigidities on the national level, if the true relationship between wages and (un)employment is at the regional level and non-log-linear. Our results show that estimating wage curves on national data leads to higher parameter estimates (a steeper wage curve).

This stems from the combination of a log-linear functional form and regional heterogeneity if the true underlying relationship between regional wages and regional unemployment is not log-linear. We provide results to show that 1/ only when regional unemployment rates are equal, the country-level wage curve coincides with the underlying regional wage curves. 2/ the national wage curve is steeper compared to the regional wage curve if the variation in unemployment stems from the region with relatively low unemployment. 3/ the national wage curve is flatter when the variation stems from the region with relatively high unemployment region. Such spatial aggregation bias was already described by R.G. Lipsey in 1960, but seems to have been largely ignored since.

The data we use is from Eurostat. We consider three sectors: C, F and G-I. The data is yearly, from 2000 to 2016. Our estimation strategy builds on Nymoen and Rodseth (2003).

### **Much ado about nothing? How the implementation of S3 changed the allocation of ERDF funds of Italian regions**

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S54-S2 Evaluating Smart Specialisation: early evidence on policy implementation and economic transformation  
IUT\_Room 304, August 29, 2019, 2:00 PM - 4:00 PM

The design of a Smart Specialization Strategy (S3) was an EU conditionality for the allocation of structural funds (ESIF) to regions for the programming period 2014-2020. Regions were not only required to elaborate and declare a specific strategy for the allocation of ESIF funds but also to follow a set of rules for its elaboration and design. For the elaboration of the strategy the major novelty was the involvement of major stakeholders, in the logic of the quadruple helix, and the emphasis on the entrepreneurial discovery process in the selection of promising sectoral and technological targets where to concentrate resources. In fact, the other major novelty of S3 was the emphasis on the concentration of public funds in few domains in which the region may gain a competitive advantage in production and innovation (specialization). These domains were expected to be chosen according to the actual strengths of the region (thus the smart nature of the strategy)

Up to now, the literature on S3 has devoted its attention on discussing the rationales for this strategy and how the process was implemented by EU regions. Today, after a few years of implementation of S3, we have some figures to assess first outcomes. In this work, we aim at assessing to what extent S3 implementation changed the investment strategy of regions as compared with the previous programming period.

### **Heterogeneous effects of agglomeration on firm innovation in Germany**

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We investigate the impact of agglomeration on firm innovation, differentiating between the effects of urbanization and localization economies on four distinct types of innovation in manufacturing and services. The regression analysis covers the period 1999 to 2010 and is based on the IAB Establishment Panel, a representative survey of about 1% of all firms in Germany. Among others, the firms report whether they introduced a new product/service, improved or imitated an existing one. Furthermore, information on process innovation is available. The panel structure of the data set enables us to address an important econometric issue. We control for composition effects caused by the selection of highly innovative firms into dense urban regions by considering both observable and unobservable firm characteristics. The results indicate that composition effects are important. A large portion of the regional differences in firm innovation rates is caused by firm characteristics. Estimates that ignore unobserved heterogeneity at the firm level still point to a positive and significant impact of localization on different types of innovation. However, once we include firm fixed effects and distinguish between manufacturing and services, we, in contrast, only find some weak indication that there is a positive effect of localization economies on radical innovations of manufacturing firms. In addition, the rate to adopt an existing product or service by a manufacturing firm is positively related to the regional employment density. For the service sector, in contrast, we find adverse effects of localization on different kinds of innovation and no important effect of urbanization.

#### **Fiscal decentralization and local expenditure policy in the CEE countries**

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G06-O5 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 4:30 PM - 6:00 PM

The theory and empirical evidences show us that fiscal decentralization enhances government efficiency by restraining the size of public sectors. Regarding to the size of the public sector, a series of articles were studied and also published, that are based mainly on the Armey curve. With the long experience of the various states and the rich literature on the field, it can be noticed that it is not possible to separate or formulate a rule that maximum economic welfare can be ensured on the background of "small" or "large" public expenditures (government size). In this paper we studied the relationship between fiscal decentralization and local expenditure and analyze how the vertical fiscal imbalance shapes this relationship. The empirical analysis is based on a panel of 11 economies of the European Union that are located in Central and East of Europe over the period of time 2000 – 2015. We estimate that our results to show that fiscal decentralization increases government spending (government size). In contrast, revenue decentralization has little influence on local government expenditures. We will show that the differences in the effects of expenditure and revenue decentralization can be attributed to the distortionary effects caused by the vertical fiscal imbalance.

#### **More than data. How to support local self-government in providing public services in the digital era?**

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G06-O6 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 9:00 AM - 10:30 AM

Monitoring of public services is very important for maintaining their quality and availability. Data are useful both for local government, which provides services to residents as well as for entrepreneurs who make decisions on the location of economic activity.

In the digital era access to key data and ability to process them and generate useful information is very important.

Statistics Poland has developed the concept of a public services monitoring system with representatives of the Ministry of Administration and experts of local government associations .

The main purpose of the system is to collect data on the quantity, quality, availability and cost of services such as: property management, public transport and road construction, environmental protection and waste disposal, construction, geodesy, administration, local social policy, education and culture.

The presentation will outline the concept of the system, its elements, the construction of indicators and the developed methods of supporting territorial self-government in managing the delivery of public services.

### **Conservation planning and informal institutions: heterogeneous patterns in Italian cities**

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G06-YS1 Regional and Urban Policy and Governance (EPAINOS)

IUT\_Room 101, August 29, 2019, 11:00 AM - 1:00 PM

Conservation planning solves an economic coordination problem by internalizing negative externalities i.e. loss of urban heritage. Non-compliance undermines these effects, but little is known how much harm it actually does. This paper exploits the Italian context to examine these relationships, given that despite stringent planning regulation, the conditions of the urban environment vary widely throughout the country, including within protected areas. Using a novel dataset of property prices for 55 Italian cities and a boundary discontinuity design, the first step of this paper explores the variation in price premiums across 933 Landscape Areas and 236 Historic Centres. Comparing the differences in property prices along the boundaries of both Landscape Areas and Historic Centres, I find an average capitalisation effect of 7% and 3.5% respectively. In line with model predictions, heterogeneous patterns in premiums are found across Italian cities, with distinct trends according to geographical location. Premiums are on average significantly lower in regions with higher rates of abusivimo – illegal building and construction – suggesting the influence of informal institutions. In the second step and by using an instrumental strategy to substantiate estimates, results confirm that at least partially, illegal building and construction levels explain this heterogeneity.

### **A Bad Year? Climate Variability and the Wine Industry in Chile**

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G10-O2 Methods in Regional Science or Urban Economics

MILC\_Room 309, August 30, 2019, 9:00 AM - 10:30 AM

It is a well-known fact that viticulture is inextricably related to climatic conditions. Climate is a factor that influences both the suitability of a region to ripen a specific variety of grapes and the resulting wine style. While longer term changes in climate have the potential to shifting patterns of agricultural land use in wine grape-producing regions, also affecting wine quality, short-term climate conditions may affect crop yields and vintage quality and, as a consequence, wine prices and vineyards' earnings. In this paper, we use an absorption matrix published by the Chilean Central Bank as the basis to calibrate a CGE model, together

with a set of elasticities borrowed from the econometric literature applied for Chile. This database represents the economy under study and allows capturing economy-wide effects through an intricate plot of input-output relations. The Chilean version of the ORANI-G model identifies 111 sectors and 179 goods and services, one service used as margin (trade services), indirect, value added and production taxes, and five user groups (producers, investors, household, foreign sector and government). The wine sector is fully integrated in the model. We calibrate the shocks using information for the 2015-2016 harvest, which is considered to be associated with a bad year for the wine industry in Chile, since premature rains occurred in important wine regions, such as Colchagua, Maipo and Casablanca, reducing the area harvested, and also leading to wines with less concentrated flavors, particularly for reds. We model the climate shock as a technical change in the grape-producing sector (quantity effect). Moreover, we model quality effects as a shift in the foreign demand curve for Chilean wine. Given the specific economic environment in the model and the proposed simulation, it is possible to note the reduction of Chilean real GDP by about 0.067%. By decomposing this result, we verify that the quality effect has a slightly greater weight compared to the quantity effect.

### **The complex nature of regional knowledge production: Evidence on European metropolitan regions**

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G07-O4 Innovation and Regional Development,  
UdL\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

Knowledge creation is widely considered as the central driver for innovation, and accordingly, for creating competitive advantage. However, most measurement approaches have so far mainly focused on the quantitative dimension of knowledge creation, neglecting that not all knowledge has the same value (Balland and Rigby, 2017). The notion of knowledge complexity has come into use in this context just recently as an attempt to measure the quality of knowledge in terms of its uniqueness and its replicability. Currently, there is a debate about the most appropriate approach to measure technological and (regional) knowledge complexity (Broekel, 2017). Central underlying assumptions differ insofar as that in the first approach the apparent combinatorial difficulty of knowledge pieces of a technology should proxy the complexity of technologies (Fleming and Sorenson, 2001). Another assumes that the structural complexity of combinatorial networks of technologies should signal technological complexity (Broekel, 2017) and a third compares the production of knowledge to (global) trade networks where suppliers that manage to export sophisticated products are assumed to have certain technological capabilities and thus a complex economy (Hidalgo and Hausmann, 2009; Balland and Rigby, 2017).

The focus of this study is on the comparison of these differing conceptual and empirical measurements of knowledge complexity on the regional level of analysis, and on the spatial distribution of complex knowledge created in Europe. We proxy the production of complex knowledge with a regional knowledge complexity index (KCI) that is based on regional patent data which is adjusted with citations received by subsequent patent applications. This is done because it is recognised that the use of raw patent counts as measures of innovative output can be problematic because patents' value and importance vary extremely (see e.g. Trajtenberg, 1990). The dataset covers patent applications of inventors located in European metropolitan regions from current EU and EFTA member countries in the most recent five-year period with reliable data (2005-2009). The initial results are promising as the regional KCI unveils knowledge creation patterns not observed by conventional measures. Not only that complex knowledge is unevenly distributed in geographical space, the results show that regions specialising in complex knowledge are not necessarily those with the highest overall patenting intensity.

## **A multi-country approach to analyzing the Euro Area output gap**

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S35-S1 Recent Advances in Spatial Econometrics and Big Data  
MILC\_Room 310, August 29, 2019, 9:00 AM - 10:30 AM

Policy makers in the European Central Bank require precise measures and forecasts for aggregate output and inflation to efficiently enact expansionary or restrictive policies for the euro area. Focusing on aggregate measures, however, entails the risk of obscuring important country-specific dynamics, including wrongly identifying country-specific shocks as threats to aggregate European inflation or output. In this paper we develop a multi-country business cycle model for the euro area (EA). The proposed model assumes that country-specific business cycles are driven by a common latent factor and thus exploits cross-sectional information in the data. Specifically, we develop a multivariate dynamic factor model that exploits euro area country-specific information on output and inflation for estimating an area-wide measure of the output gap. In the proposed multi-country framework we moreover allow for flexible stochastic volatility (SV) specifications for both the error variances and the innovations to the latent quantities in order to deal with potential changes in the commonalities of business cycle movements. By tracing the relative importance of the common euro area output gap component as a means to explaining movements in both output and inflation over time, the paper provides valuable insights in the evolution of the degree of synchronicity of the country-specific business cycles. In an out-of-sample forecasting exercise, the paper shows that the proposed approach performs well as compared to other well-known benchmark specifications.

## **Core-periphery relations in international research collaboration**

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S17-S1 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 11:00 AM - 1:00 PM

The paper investigates core-periphery relations in the network of international scientific collaboration and their implications for regional development processes and policies. We hypothesise that benefits from collaboration depend, *ceteris paribus*, on roles played by collaborators in the given collaboration. To capture the impact of various roles, we compare mean citation of collaborative papers in which authors from different countries perform a leading or a complementary role. The leading role can be attributed to scientists indicated as corresponding authors, while non-corresponding authors can be seen as complementary partners. Thus, we compare mean citations of internationally co-authored papers in which scholars affiliated in particular countries are either corresponding authors (“corresponding author paper”) or non-corresponding authors (“non-corresponding author paper”). The analysis is based on Web of Science data covering the period 2000-2013. The results of the study suggest that core countries seem to benefit most from international cooperation when they lead the research (i.e. when they play the role of a corresponding author), while peripheral countries benefit most from being led (i.e. when they play the role of a non-corresponding author). This can suggest that increasing international collaboration in science strengthens persistence of the spatial distribution of research excellence embedded in long-term historical processes.

See extended abstract online.

## **Alternative approaches to the disaggregation of the European Social Fund at the local level and their consequences for impact evaluation**

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G24-O1 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 11:00 AM - 1:00 PM

Public investment in human capital is perceived as a tool that gives an opportunity to overcome development barriers in lagging regions. Interventions of this type are very popular in many countries. In the European Union, the European Social Fund is the main instrument for investment in human capital. According to EU regulations, interventions financed from the European Social Fund funds are subject to extensive evaluation processes at different levels (single project, regional/national programmes, and European comprehensive evaluation studies). Quite often, regions—or smaller spatial entities—are considered as a unit of analysis, assuming that the comparison of spatial units that have been exposed to different levels of support can allow identification of the causal effect. Leaving aside a fundamental discussion on the possibility of identifying the causal effect outside the experimental framework, in this research, we argue that the conclusions of evaluation exercises significantly depend on the method employed to measure the European Social Fund expenditure at the local level.

The empirical part of the paper is based on the analysis of the European Social Fund expenditure at the local level (LAU1/LAU2) in Poland in 2007-2013. We compare three disaggregation methods: (1) the official disaggregation used by the Polish government; (2) population-adjusted disaggregation; (3) and a novel and unique disaggregation based on high-resolution address data (postal codes) of 8.78 million participants of projects funded by the European Social Fund in Poland in 2007-2013. The official spatial disaggregation of the European Social Fund in Poland is based on a simple principle of proportionality: voivodships have proportional shares within the project (voivodship share = project divided by the number of provinces); poviats have proportional shares within their voivodship (share of the poviat = share of the voivodship divided by the number of poviats within a given voivodship); municipalities have proportional shares within their poviat (share of the commune = share of the poviat divided by the number of communes within a given poviat). We argue that our method (3) provide the best estimation of the real spatial distribution of expenditures, and the official method (1) is significantly biased. Moreover, we provide evidence that the population-adjusted method (2) is a better approximation of real expenditures than the official method (1). To assess the influence of disaggregation method on evaluation studies we compare regression models with independent variables measured by the three discussed disaggregation methods.

### **Novelty and relatedness: a recombinant approach**

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G07-R1 Innovation and Regional Development  
UdL\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM

Are some regions more likely to produce truly novel technological inventions? Following the recombinant approach which considers novelty as new combinations of existing technologies, this paper investigates the geography of novelty. The literature on regional diversity/variety has shown that the entry of new technologies are on average related to the regional knowledge portfolio, this paper proposes to provide evidence on the link between diversity/variety and the entry of new combinations. These novel inventions at the regional level may combine technologies that are related to their local technology portfolio, that is, regions innovate by combining familiar pieces of knowledge. However, novel inventions may also combine

technologies that are more distant and locally unrelated with their knowledge base, and the issue is than to understand what are the conditions that enable regions to produce more novel and breakthrough inventions. We use OECD REGPAT EPO patent data to provide evidence on how French regions produce novel technological inventions over the period 1990-2014. We identify, for each patent and each region, the new subclass pairs that are combined and enter the region for the first time. Based on these French data, we first investigate the extent to which regions innovate using rather close/distant pieces of knowledge and whether they are related or unrelated to the local knowledge base. Second, we study the conditions explaining the regions' ability to produce novel technological inventions by combining unfamiliar and unrelated knowledge.

### **Why Nations Matter: On the Relative Unimportance of Agglomeration as a Driver of Long-term Economic Growth.**

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G04-O6 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 4:30 PM - 6:00 PM

The paper revisits the role of agglomeration in long-term economic growth, taking a historical and international perspective. To date, the literature has failed to produce robust evidence for the existence of dynamic agglomeration economies. Agglomeration (as measured by initial urbanization levels, city size or other indicators) is not a good predictor of subsequent income growth, whether for nations or cities. Our own analysis for some 90 nations (for 1960-2005 and 1990-2015) equally fails to find a significant relationship between initial levels of urban agglomeration and subsequent income growth.

How are we to reconcile this with the vast literature on agglomeration economies and knowledge-spillovers? The evidence for agglomeration economies is irrefutable, their microeconomic foundations well understood. However, as I shall argue, there are two basic reasons for the absence of a systematic positive relationship between agglomeration and growth, elaborating on arguments in my forthcoming book, *The Wealth and Poverty of Cities: Why Nations Matter* (Oxford University Press, 2019). New data and national examples are also presented.

First, agglomeration economies are essentially static, their contribution to economic growth primarily allocational. Their potential for bolstering per capita GDP largely depends on a nation's position in the development process, the grand era of urbanization (exodus from agriculture) now past in rich nations. The shift to knowledge-rich industries may bolster the economic value of larger cities for growing industries, but the reality of Gibrat's Law means that city size remains an unsatisfactory predictor of growth. Certain urban configurations may be more conducive to growth, but they are not fundamental drivers.

Second, the fundamental drivers of economic growth are social and political, forged at the national level, what cultural anthropologists call "institutions". Here, I differ with many urban theorists, notably Jane Jacobs. In well-governed, educated, societies with functioning markets and the proper incentives (to innovate "productively"), urban agglomerations will naturally spring forth as incomes rise, if only because of Engel's Law. Workers and entrepreneurs will naturally sort to locations where they are most productive. But agglomeration will be of little succor where institutions fail. If the nation doesn't work, nor will its cities.

### **From the territorial governance of commons to reconfiguration of management models. The "Chaines des puy – Faille de Limagne" case-study.**

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S20-S2 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

We are face to new form of governance of commons in tension between development and protection emerging from the coexistence of management models. Nowadays a scale of management models of commons alongside the protected area management category of International Union for Conservation of Nature and Natural Resources (IUCN) can be identified from the most development-oriented model to the most protection-oriented model and from the most inclusive to the most exclusive model.

Some authorities and stakeholders coordinate themselves with as main objective economic valorization of commons in the limit of national legislation and eventually implementing protected area with sustainable use of natural resources (category VI of UICN). Regional natural park (RNP) model aims to promote protection of Landscape/Seascape (category V of UICN) and to involve municipalities and civil society in a horizontal manner; nature protection depends on the concertation and remains sometimes uncertain.

National park (NP) model involves mainly one public administration of the park directly linked with national government in a vertical manner and aims to preserve natural site from human activities. In France, legal status of the NP and RNP became closer with the reform of NP in 2006 involving more the stakeholders and with the evolution of RNP strengthening its charter.

In the local situations, these models may not sum up the representations and the logics of all actors. This leads to innovate and invent specific territorial governance arrangements emerging from the coexistence of management models to make synergy between development and protection possible.

We will illustrate our communication through the analysis of the territorial governance arrangement of the “Chaines des Puys – Faille de Limagne” natural site – with different form of propriety and use - located within the Auvergne volcanos RNP and recently inscribed in UNESCO list of world heritage. Following other works on territorial governance and proximity dynamics (Polge et al., 2017, 2018), we will put forward the tension between the trend to verticalize the management and the trend to strengthen the implication of stakeholders and citizens in the management of natural site considered as commons. We will point out how this last trend leads to the implementation of innovative territorial policies and to the emergence of new management models.

### **What have we learnt on urban commons and economic experiments?**

Dr. Adam Polko<sup>1</sup>, Dr Artur Ochojski<sup>1</sup>, Prof. Malgorzata Czornik<sup>1</sup>, Dr Piotr Gibas<sup>1</sup>

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S20-S4 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 29, 2019, 9:00 AM - 10:30 AM

See extended abstract online.

### **The interaction between territorial capital and family businesses**

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G04-O4 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 2:00 PM - 4:00 PM

The purpose of the present study is to examine the interaction between the territorial capital of a region and the family businesses operating in that area.

Although family businesses have been released in Hungary for a long time, most of them have been founded around the change of regime, and the research related to the family businesses has been examined intensively only in recent years.

To examine the relationship between territorial capital and family businesses, on one hand the study is based on academic literature and also on previous studies. On the other hand, two case studies are introduced according to the interviews with two family businesses.

As a result, the study introduces the social and cultural effects of territorial capital on family businesses and the growing power of family businesses in terms of territorial capital. There is a strong interaction between corporate regional engagement and embeddedness and territorial capital.

## **Regional Resilience of Russian Arctic Cities**

**Mr Andrey Polyachenko<sup>1</sup>**

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G20-O1 Social Innovation for Resilient Regions  
IUT\_Room 203, August 29, 2019, 4:30 PM - 6:00 PM

Regional resilience is a type of resilience related to the economy of regions and cities. Usually, it is calculated for particular economic crises. After a consideration of different ways to estimate it, we decided to use Ron Martin's method as it does not require complex calculations and gives quantitative results. In this work we calculate the regional resilience of major Russian Arctic cities to catastrophic economic crisis caused by the USSR collapse. This region is especially vulnerable as it has low population density, specialization on raw materials production and strongly depends on federal aid, this is why the strongest recession here occurred in 1990s. Russian Arctic is unique because it has several relatively big cities above the Arctic Circle (Murmansk, Norilsk). Moreover, the Arctic cities have a very different dynamics: some cities managed to grow, while several others fell by four times.

The main idea of the research is to associate the regional resilience with several factors: size, capital status, remoteness, quality and type of infrastructure, economic diversification, type of natural resources in basic sector and phase of a resource cycle. All this factors are tested by correlative analysis. Several of them are "traditional" resilience factors like size, capital status and economic diversification, being crucial for densely-populated areas. In contrast, other variables are added by us according to special characteristics of Arctic territory (infrastructure, type of basic resource). This factors indicate Arctic special vulnerability. Then we make a typology of the cities according to their resilience.

This study has several practical applications. Firstly, it helps to predict the vulnerability of some particular cities, which is useful in turbulent Arctic region. Secondly, after more elaborated investigation some political proposals for local and regional stakeholders can be made.

The reported study was funded by RFBR according to the research project № 18-05-60088 "Urban Arctic resilience in the context of climate change and socio-economic transformations".

## **Regional Resilience and Discontent in the EU**

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G15-O2 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 4:30 PM - 6:00 PM

The effects of the Great Recession have been unevenly distributed across European regions. While some promptly reacted to the shock, others were not able to restore their growth path. Such dynamics contributed in generating feelings of discontent across Europe, particularly in those places that experienced a stronger decline. This resentment toward institutions and traditional parties is now shaping a new political geography, being the expression of people's attitude in the territories.

In this article, we contribute to the understanding of the drivers behind the increasing support for populist parties. We assess whether different degrees of economic resilience to the economic and financial crisis played a role in shaping the voting behavior. To this end, we explore two dimensions of economic resilience. We begin by considering the classical approach, which takes a dynamic perspective on few key variables such as (un)employment and GDP per capita. We then move towards a more comprehensive framework, following an evolutionary approach. This acknowledges that regions are characterized by an inner complexity, where multiple actors such as firms, institutions, and workers interplay with each other and establish relationships with the external world. To proxy these dimensions we examine, among others, sectorial variety, network capacity and institutional quality. To carry out our analysis, we use a novel dataset on voting behaviour at NUTS-2 level covering the whole EU-28 over the period 2000-2018. Through the understanding of the different reactions to the crisis, we clarify the determinants of populist support, and deliver important insights to shape effective policy responses.

#### **“Hometown and whanau, or big city and millennials?” Local amenities and higher-education-to-job choices in New Zealand**

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S41-S1 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 28, 2019, 11:00 AM - 1:00 PM

One of the main challenges facing non-metropolitan regions is the retention of highly-educated young people. A loss of the brightest and best can lead to reduced business creation, innovation, growth and community wellbeing in such regions. In this paper we use rich longitudinal microdata from New Zealand's integrated administrative data infrastructure to analyse the geography of the destination choice of tertiary graduates, conditional on prior school location. We address this question of post-student location choice in the context of the approach of Chen and Rosenthal who defined statistics measuring 'quality of life' (QL) and 'quality of business' (QB) for urban areas. Specifically we test whether students – of different characteristics (e.g. level and field of study, gender, age, ethnicity) – locate in places that are regarded as good to live or good to do business. By incorporating prior school location we also test how the pull of “home” is magnified or diminished by a location's QL or QB. The results are important for local decision-makers who wish to attract and retain young qualified people to their area, and for decisions about the location of various types of tertiary educational institutions.

#### **Restructuring Tax Policies: sectoral, household welfare and regional impacts in Brazil**

Prof. Alexandre Porsse<sup>1</sup>

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The Brazilian taxation system is very complex and fragmented among national and subnational governments, being a source of allocative distortions and inefficiency. Federal government controls most of the tax instruments while subnational governments (states and municipalities) have few tax instruments to be managed. Also, there is a lack of vertical and even horizontal coordination among tax policies which can compromise the effectiveness of changing tax structure. This paper aims to assess the sectoral and welfare impact of changes in three tax instruments (VAT, labor and income taxes) which have been changed by federal government over the last three decades. First, we use a tax function equation to identify the behavior dynamic of changes in those tax instruments. Second, we introduce the tax reaction function into a CGE model in order to simulate the effects of changing tax structure. The simulation exercises mimic the historical changes promoted by federal government in those tax instruments. Preliminary results suggest that changes in those tax rates imply reduction in household welfare and heterogeneous effects on the sectoral productive structure. Additionally, the spatial pattern of sectoral specialization and vertical linkages among government are channels by which such policies have relevant regional impacts.

### **Relating experiences of mobility to transport poverty in peripheral rural areas: the case of Zeeland, the Netherlands.**

**Mr Felix Pot<sup>1</sup>**, Prof. Taede Tillema<sup>1,2</sup>, Dr. Sierdjan Koster<sup>1</sup>

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S07-S2 Transportation and Mobility in an Ageing Society. Perspectives, Trends and Drivers  
IUT\_Room 103, August 30, 2019, 11:00 AM - 1:00 PM

Driven by centralisation and urbanisation forces, the decline of population and services is a common development pattern in many peripheral rural regions across Europe. While most rural households can cope with increasing distances to services as a result of facility-decline by enhancing automobility, some may be at risk of experiencing transport poverty and decreasing accessibility to services. Complementary to identification strategies for transport poverty based on social (e.g. being of senior age) and transport disadvantages (e.g. have no car available), subjective appraisals including individual perceptions of transport alternatives and of an individual's own competences are theorised to be crucial in explaining the potential to be mobile. The question arises which subjective factors play a role in the experience of transport poverty in rural areas. This paper, therefore, aims for establishing the difficulties potential vulnerable groups experience in accessing services in peripheral rural areas.

To evaluate travel experiences in rural peripheral areas two case study areas in the Dutch province of Zeeland have been selected: Zeelandic Flanders and Schouwen-Duiveland. In the Dutch context, these areas are considered to be very peripheral and are confronted with population and facility decline, an ageing population structure and public transport marginalisation. By conducting focus group sessions with commuters, seniors and high school students, travel experiences in population segments where transport poverty is expected to occur have been evaluated.

The experience of transport poverty in Zeeland is mainly the result of public transport marginalisation and relatively large distances resulting in temporal constraints to access services and participate in activities. Therefore, on a conceptual level, geographical factors, relating to the spatial distribution of services, are argued to play a role in causing transport poverty in rural areas. Also, many 'soft' subjective factors such as

quality of service in public transport, knowledge of the transport system, information supply, perceptions of comfort and safety, social norms and previous experiences of these factors seem to contribute to the overall individual assessment of accessibility and eventual lower participation in activities. Considering subjective experiences of mobility may, therefore, be crucial in designing responsive policies to tackle social issues as a result of transport poverty.

## **The Quality of Life in Greek Cities Reconsidered: From the urban indicator system DPRD-50 to the DPRD-20**

**Dr. Eva Psatha**<sup>1</sup>

<sup>1</sup>*University Of Thessaly, Volos, Greece*

G06-O8 Regional and Urban Policy and Governance, IUT\_Room 306, August 30, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

## **Distributive politics and the allocation of fiscal transfers to local government: empirical evidence from Greece**

Prof. Yannis Psycharis<sup>1</sup>, Dr Maria Zoi<sup>1</sup>, Dr Stavroula Iliopoulou<sup>1</sup>, **PhD Cand. Panayotis Pantazis**<sup>1</sup>

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S22-S1 The politics of local and regional development  
IUT\_Room 303, August 28, 2019, 11:00 AM - 1:00 PM

Greece is empirically justified as amongst the less fiscally autonomous countries in which municipalities rely heavily on fiscal transfers from the central government in order to cover their fixed or ordinary and exceptional financial needs. Especially with respect to the latter, which are non-formula related, Greek local governments face the central government's discretion on the levels of grants transferred to them annually. In order to shed light on the ability of social, economic, geographical or politically-oriented incentives behind the allocation of the alternative types of grants to municipalities in Greece, this paper analyzes different sets of socio-economic, geographic and political-entrenchment variables and offers unique empirical results on the factors lying behind different types of grant allocations during the period 1999-2009. Our evidence demonstrates that different types of grants are driven from different factors; while ordinary (based on predetermined criteria) grants respond to local government socio-economic and geographical characteristics and needs, the more discretionary (unexpected and non-formula related) extraordinary grants are mainly driven from political incentives and may be used by politicians, at both local and national levels, as a tool towards gaining more votes or eliminating voting opposition groups. Apart from possible self-interest and the political power exertion effects behind grant transfers to local governments, our evidence also demonstrates the need for reforms towards a more transparent way in the allocation of extraordinary grants in Greece and the urge for reforms leading to a more justifiable way in setting such fiscal transfers.

## **The Seasonality of Entrepreneurship. An Exploration according to Industry, Ownership and Geography**

Prof. dr Marcus Dejardin<sup>2</sup>, **Dr. Korneliusz Pylak**<sup>1</sup>, Dr. Nebojša Stojčić<sup>3</sup>

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S18-S1 Entrepreneurship and local development: symbiosis and/or dissonance?  
UdL\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Successful Economic Diversification: Implications for Refining Smart Specialisation Strategies in Less Developed Regions**

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S25-S2 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 2:00 PM - 4:00 PM

Related and unrelated diversification take ample space in scientific and political debates. Against the backdrop of refining smart specialisations strategies, this paper identifies diversification patterns towards the highest income growth in less developed areas in 1931–2000. It is argued that both related and unrelated (in longer-term) diversifications are fundamental for evolutionary growth of less developed regions, however, only the former process has been confirmed in the analyses. Both related variety of industries and expertise in 1931 also point to successful diversification. The implications for theories of Evolutionary Economic Geography and regional policy actions in less developed regions are discussed.

See extended abstract online.

### **Lagging regions strike back – voting against establishment in Slovakia**

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<sup>1</sup>University of Economics in Bratislava, Bratislava, Slovakia

G04-O12 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 11:00 AM - 1:00 PM

In recent years, the rise of populism, extremism and the anti-establishment movements can be seen in many parts of the developed world. These trends dominate mainly in lagging regions, places that have been overlooked by the public authorities for a long time. People in these regions are lacking opportunities to reach the average standard of living in their countries. This contribution focuses on the rise of an anti-establishment movement in Slovakia. Using cross sectional data from parliament elections in 2016 we explore role of local socioeconomic factors in the support of political party People's Party - Our Slovakia. This extreme right party was established in 2011 and it declares to build its mission on three core principles – national, Christian and social. Spatial analysis of the election results showed strong spatial concentration of its support in regions of central Slovakia. Regression analysis showed that the party gained higher support in regions with higher concentration of Catholics and a smaller share of the Hungarian minority. In addition, the party received higher support in rural and less densely populated regions with higher unemployment rate. Neither higher intensity of EU funding nor state investment aid had any significant effect on the political support for this party. We discuss the political consequences of our results.

### **An innovative strategic tool "The Goals Grid": breaking the classic methods in businesses?**

The importance of strategic planning for companies is particularly important as it helps to define their vision, mission and goals. Its implementation's success is inextricably linked to the choice of the most appropriate strategic tool (Ansoff:1965;Mintzberg, 1993:107; Andersen, 2000:185-186).

In the international literature is reported a variety of tools, which are widely used for the proper decision making from the executives in order to deal with strategic corporate strategic issues. Given that the business environment is constantly changing and the existing strategic tools often provide general formula solutions, there is an urgent need to create a new one (Mintzberg,1994).

The tool "The Goals Grid" (Nickols,2011;Nickols2015) is an alternative method of implementing strategic planning. Its versatility, its ability to guide the executives and its graspable structure, can make it the most suitable choice for business to design an integrated strategic plan. It is about a 2x2 grid which is divided into four quadrants. Each of them represents a different thematic target category (Achieve, Preserve, Avoid, Eliminate) and is complemented by executives.

The subject of this research is the systematic presentation of the innovative strategic tool "The Goals Grid", as the existing literature is very limited. The purpose of the presentation is to highlight it or not, as an alternative option to businesses which is may be capable of replacing the classic methods.

In this context, is presented an extended comparative analysis of the tool with the Swot Analysis, which is distinguished by its multi-annual experience in the field of strategic planning, by analyzing the company's external and internal environment. In contrast, although "The Goals Grid" tool has a short track record in both the scientific and business community, it is characterized by simplicity and usability and it is conformed to the new trends of the market which arose especially due to the economic crisis. In particular, the contribution of its specially formed grid guides managers in the right decision making.

### **Policy evaluation on Occupational Safety and Health: methodological approaches and critical issues**

Dr. Chiara Colagiaco<sup>2</sup>, **Dr. Elena Ragazzi<sup>1</sup>**, Dr. Lisa Sella<sup>1</sup>, Dr. Stefano Signorini<sup>2</sup>

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S51-S1 Counterfactual methods for regional policy evaluation: Policies for firms  
IUT\_Room 304, August 30, 2019, 9:00 AM - 10:30 AM

The European Agency for Health and Safety at Work (2013) underlines that the development and implementation of OSH interventions, including policies, programs and their effects, are not evaluated by means of rigorous and scientific evidence-based research, denoting a general lack of quality in OSH intervention.

In this panorama, the Italian case is particularly interesting. In 2008, a system of economic incentives has been introduced (d.lgs. 81/2008, art. 11), which assigns to various public entities the provision of grants addressed to small, medium and micro enterprises (SMEs) that realize investment projects in the field of health and safety at work. The most important intervention, in terms of both the number of beneficiaries and the provided amounts, has been realized by Inail. Since 2010, Inail has financed OSH projects for about 2 billion euros, which go under the name of "ISI calls".

Up to now, the evaluation analyses performed by Inail on the ISI calls mainly concerned implementation processes and performance monitoring, reporting, and accounting. Recently, the need for an ex-post evaluation of the effects emerged, in order to improve the policy effectiveness. Therefore, Inail intends to

plan a research aimed at identifying the appropriate models to assess the impact of the incentives and to highlight their strengths and criticalities as an economic support to SMEs.

This paper overviews the main theoretical and methodological aspects in the counterfactual evaluation of OSH policies. This overview is fundamental because the topic is not sufficiently addressed by both national and international literature, while studies on this topic are not so widespread. In particular, we reflect on: the possible evaluation questions that emerge when studying the impacts of OSH policies and their implications; the most appropriate evaluation designs that could answer the evaluation questions; and the consequent methodological issues (e.g., internal and external validity, feasibility of an evaluation based on administrative data, etc.).

## **Logistics development and postindustrial urbanization: the emergence of new blue-collar places in urban regions**

**Dr. Nicolas Raimbault<sup>1</sup>**

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S57-S1 Freight mobility and urban forms  
IUT\_Room 108, August 30, 2019, 9:00 AM - 10:30 AM

In current post-industrial metropolises, the logistics industry is one of the few sectors experiencing blue-collar jobs growth, concerning both warehousing and deliveries (Bonacich & Wilson, 2008). Moreover, in the context of the fall of manufacturing jobs, logistics blue-collar workers are now dominant within the blue-collar social group in urban regions.

Against this background, the goal of this presentation is to explore the territorial consequences of this sectorial shift within working classes in the case of the Greater Paris Region. Does it lead to the emergence of new blue-collar workplaces and residential places with different urban, socio-economic characteristics compared to the industrial era? Our main hypothesis is that the territorial rupture consists mostly in the emergence of new workplaces for blue-collar workers while residential places remain quite stable. These new workplaces strongly differ from historical industrial ones: on the one hand, warehouses are further and further away in outer suburbia and often ignored by trade unions and leftwing parties and, on the other hand, delivery drivers are working in city-centers, where they are almost invisible. This changing landscape of blue-collar places certainly contributes to the growing political invisibility of blue-collar workers. The demonstration will be based most of all on spatial analysis of employment data localized at workplaces and residential places. The results will also be crossed with qualitative research about the working conditions in warehouses (Gaborieau, 2016) and about the governance of logistics territories (Raimbault, 2014). This way, some research perspectives about the current place of blue-collar workers in postindustrial global cities will be presented.

## **Farmers delivering in local short food supply chains: mobility practices, territories, and proximities. A case study in Hauts-de-France (France).**

**Dr. Céline Raimbert<sup>1</sup>, Dr. Gwenaëlle Raton<sup>1</sup>**

<sup>1</sup>*IFSTTAR/AME/SPLOTT, Marne-la-Vallée, France*

S21-S2 Circularities and proximities : stakeholders, scales, resources  
UdL\_Room 106, August 28, 2019, 2:00 PM - 4:00 PM

With the rise of local short food chains (SFSC) and in a context of reconnection between agriculture and food, more and more producers are becoming physical actors of food supply chains. By reducing the number of intermediaries, more and more commercial and logistical tasks fall to producers. They involve



developing more or less close relationships with a potential or established clientele (canvassing, communicating, ensuring follow-up in demand areas), but also, very often, delivering. As soon as the issue is no longer about observing the catchment area of a store but the mobility practices of actors from the productive space towards consumption basins, it modifies the focus of the geographer. This implies questioning producers' representations of spaces and territorial resources and the processes at work in their preferences to certain delivered spaces. What does the mobility of producers in SFSC say about their links built/under construction with the various spaces adjacent to farms (urban, multi-polarized areas, peri-urban, rural)? From the point of view of these mobility practices, what are the emerging territories? This communication aims at analyzing the mobility practices of producers of SFSC from their farm to their delivered outlets and the territories they build then. Thanks to a case study based on 6 farmers in Nord (France), we qualify their mobility territories in light of influence processes and representation of territorial resources: first, the influence of urban areas, as consumption basins and then, the influence of production basins considered as places of agricultural production concentration with attractive or repulsive potential. The detailed analysis of spatial practices, depending of the delivery frequencies for instance, also highlights mechanisms of suffered or chosen proximities.

In the results, we compare the mobility territory of the six investigated producers and try to highlight some occurrences such as: (1) producers whose farms are located in or near dense urban areas draw concentrated territories where distances are short. Considered as sufficient and adequate, local territorial resources are used and valued; (2) when farms are located in marginal areas, producers tend to adopt radical strategy as extroversion; (3) diversification strategies are also observed, they tend to increase the size of the mobility territory; (4) combination strategies existed, where local resources are valued, they show a particular attachment to the place of origin (farm) coupled with a desire for diversification towards other environments

See extended abstract online.

### **Local Fiscal Interaction: Evidence from Flanders**

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G06-YS1 Regional and Urban Policy and Governance (EPAINOS)  
IUT\_Room 101, August 29, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

### **Regional policies for European level promotion**

Dr. Liviu Stefan Rancioaga<sup>2</sup>

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G04-O13 Regional and Urban Development  
IUT\_Room 207, August 30, 2019, 2:00 PM - 4:00 PM

Member States and their regions see, among other things, the EU as an important source of funding for economic and socio-cultural development projects. The interest for European funding is linked to the availability and accessibility of national / regional funds.

No matter the experience of regional institutions in running projects, there are voices who say European funds are harder to access because of bureaucracy. But some regions, and even cities, consider the

importance of being connected as closely as possible with the European institutions and have sustainable external promotion policies. Most of them have permanent offices in Brussels. But other regions don't have. I am trying to identify in this study the countries with most and least NUTS 2 regions represented at European level, focusing on regions that include the Capital City of the respective state.

Research assumptions: regions with significant national financial allocations are less interested in attracting European funds and ensuring greater visibility at European level; internal cohesion among regional policy actors determines the existence of a functional strategy for European presence and the use of instruments available for the region; a region that is performing well within its own country is not automatically performing at European level as well. Regional policy pursues EU-wide cohesion, but regions play the most important role in promoting and developing. Special attention will be paid to the Bucharest-Ilfov region, given that it is a capital region with a wide range of particularities compared to the other regions of the country.

The methodology consists in the comparative analysis of the cohesion programmes, data bases and legislation analysis.

### **Geography as a determinant of FDI in the tourism and transport sector: The case of Greece**

**Mr Evangelos Rasvanis<sup>1</sup>**, Dr Vassilis Tselios<sup>1</sup>

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G12-O2 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 9:00 AM - 10:30 AM

FDIs constitute one of the main outlets for economic and social welfare of Greece as well as one of the main solutions in facing the financial and social problems created by the prolonged economic and financial crisis, in the post-memorandum era. The effects of FDIs differ by the socioeconomic and geographical characteristics of the regions where FDIs are located. But, what drives FDIs to some cities and regions and not to others? According to Dunning's eclectic paradigm, location advantages play an important role in firms' decision to internationalise, referring not only to the natural and geographical endowments of the host country, but also to the quality of institutions, infrastructures and human resources. A key location advantage of Greece to attract FDIs is its natural endowments. These geographical characteristics, which are known as 'first nature' of geography, may give Greece a comparative advantage over other European countries, especially in the attractiveness of FDIs in the tourism and transport sector.

The aim of this paper is to investigate the effects of the 'first nature' of geography factors in the location of tourism- and transport-FDIs in Greece and to compare these factors with the 'second nature' of geography factors – which refer to the proximity between economic agents – after controlling for some regional and national characteristics, such as the quality of institutions and public infrastructures. This paper also explores the differences in these location factors between and within the tourism- and the transport-sector. Using data based on a questionnaire survey which has been sent to the main domestic and subsidiaries of multinational firms in Greece, this paper finds that the 'first nature' of geography factors, which are more important than the 'second nature' of geography factors, matter for the location of both tourism- and transport-FDIs. However, they are more important for tourism-FDIs than for transport-FDIs. The importance of each geographical factor differs by sector: climate, cultural resources, morphology, location's natural environment and access to sea are more important in attracting tourism investments than investments in the other sectors, while access to sea is more important for the transport sector than for the other sectors. Finally, there is no evidence that there are differences in the 'first-nature' of geography factors within the tourism sector (i.e. domestic investments vs FDIs), while there is some evidence that a country's geographical position is more important for transport-FDIs than for domestic investments in the same sector.

## **When spatial econometrics meets network analysis : an application to the european cities' network**

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G11-O1 Spatial Econometrics

MILC\_Room 309, August 29, 2019, 9:00 AM - 10:30 AM

In this study, we estimate the role of cities' connectivity in their economic performance (i.e. their economic growth). To do so, we construct a network of european cities through the location of multinational firms' offices in these cities. The objective of this study is twofold : firstly we contribute to the literature on the role of cities' place in a global network on their economic performance. A whole body of literature has developed around the idea that connectivity is a necessary element to economic growth but there is a lack of proper empirical studies. Secondly, we pursue a methodological goal by linking spatial econometrics and network analysis : we construct a W matrix based on economic relation, and we derive several index of connectivity. Specifically, we derive Bonacich centrality index and we show that this measure of connectivity is directly linked to spatial econometrics. We demonstrate that the Bonacich centrality plays a significant role in cities economic performance, a more important role than other measures of centrality such as degree or closeness centrality. We thus demonstrate that the position held by cities in the world cities network is important for explaining their economic growth, especially when we take into account not only network topology but also the prevailing spillover effect strength inside the network.

## **Higher Education Institutions: What Does It Mean to Be Central or Peripheral?**

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G07-O1 Innovation and Regional Development

UdL\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

There is a consensus among planners and researchers that Higher Education Institutions (HEIs) are fundamental to the establishment of contemporary societies. Together with the exercise of its traditional teaching and research functions it is the recent focus on their territorial embeddedness that makes visible its contribution. Higher education's relevance for the society, its proactive engagement with the community and its impact on the surrounding region are relatively recent concerns; the connection of HEIs with the communities and countries in which they are located, but also, in network, with other HEIs, became a demand due to the complexity and the challenges of our days.

Universities play a central role in space; do not exist in every human agglomeration and polarised users from a wider distance. Irrespective of its own history or path dependency, universities may decide to be completely conventional, carrying out its traditional teaching and research missions, in a converging path to excellence of the centre of the system or enrol in a divergent path, they can be unorthodox; playing an active role in regional development policies. Surely, the second option demands a stronger interaction with other regional actors and society as a whole. By large, the expansion of the Higher Education system around the world is based on the strategy implemented by developed economies that sought to promote an increase in both the number of universities and placement of students not always related with regional demands and needs.

This paper aims at analysing the different strategies and practices adopted by four universities that play an active role in its regions, placed in distinct contexts: Portuguese universities of Évora (in the interior south of the country) and Porto (in the north coast of the country) and two Brazilian universities - Brasília and Campinas -, located in macro-regions that differ in social and economic terms. In fact, regarding current challenges, can we talk about a “universal” model of HEI (one size fits all) or we faced a diversity of models influenced by the characteristics of the regions where they are located (place-based)? We have significant differences if we analyse a central or peripheral HEI? The theoretical framework of this paper is, beyond the paradigm Centre-periphery and the literature about HEIs territorial engagement (e.g., quadruple helix, regional innovation systems, learning regions); It explores also science paradigms and its diffusion in peripheral regions.

### **National or regional recruitment: market area of the Portuguese Universities.**

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S16-S1 Students, University and the City: Location Choice and Mobility Behaviour  
IUT\_Room 103, August 29, 2019, 2:00 PM - 4:00 PM

Depopulation of eastern Portugal and concentration in the coast has been a longstanding process. The oldest Higher Education Institutions (HEIs), Coimbra, Lisbon and Porto, are also at the seashore or near it. Since 1973 new HEIs has been disseminated around the country and nowadays every Portuguese region holds a set of HEIs. However, those closer to the coast tend to have a higher demand than those more distant. It is not clear if each one has a kind of restricted market area such a spatial monopoly in its neighbouring area or if there is national recruitment for some of them.

This paper is an exercise of determination of these areas for the Portuguese public network of HEIs. We use a database from the Ministry of Education (DGEEC-Ministry of Education) with information of the pair, place of residence (municipality level) and respective HEI, for enrolled students. Through techniques of Exploratory Spatial Data Analysis (ESDA) we will look for clusters of municipalities that could be market areas for each HEIs considered. Beyond this, a logit model will test some hypotheses present in the literature regarding the student’s choice of an HEIs. This article aims to analyse these issues and indicate some critical points to be taken into consideration by decision-makers.

### **Spatial disparities in population growth across rural areas in Portugal between 1991 and 2011**

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G23-O3 Rural Issue  
MILC\_Room 410, August 30, 2019, 11:00 AM - 1:00 PM

This study provides evidence on spatio-temporal patterns of socio-economic performance across rural small areas (freguesias) in Portugal between 1991 and 2011, and investigates the factors underlying the differences in relative performance occurred during that period. The study creates a new unique socio-economic dataset using small-scale geographies (freguesias), while the majority of previous studies focusing

on Portugal use large aggregate spatial units at the level of NUTS2 or NUTS3, and to smaller extent LAU1 (i.e. municipalities). The first part of the study provides a spatial analysis of change in key indicators of rural socio-economic outcomes, and shows there is considerable heterogeneity in performance, particularly between accessible and remote rural areas. Accessible rural areas tend to have better performance compared to more remote areas. A number of factors help explain these disparities, including differences in economic structure, demographic composition and human capital, availability of services of general interest and other consumption amenities, and accessibility to the urban hierarchy. The second part of the study tests the relative influence of these potential explanatory factors by developing econometric regression models for rural population and employment growth. In addition, the regression analysis investigates the nature of the spillover effects between urban and rural regions in Portugal. We measure the effect of proximity to main urban centres as a driver of rural population and employment growth, or decline, after controlling for the other explanatory factors. Our empirical approach follows that of Veneri and Ruiz (2013) for a cross section of small regions from 14 OECD countries, and accounts for economic structure and socio-economic factors, besides proximity to urban centres, on rural growth. The results suggest that proximity to urban areas has a positive impact on the growth of nearby rural areas, while the effect for more remote rural areas tends to be mixed. The importance of the spillover effect also differs according to the size of urban areas.

### **Privatization, Demographic Growth and Perceived Sustainability: Lessons from the Israeli Renewing Kibbutzim**

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G15-O1 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 2:00 PM - 4:00 PM

Organizational and demographic changes in the Israeli kibbutzim have been the subject of extensive research, especially after their economic collapse in the 1980s. In some cases, the changes that kibbutzim adopted entailed an extreme shift from their basic ideology of communal way of life. Consequently, in 2005 the State of Israel established a new classification -- Renewing Kibbutzim. This study examines the relationship between the organizational changes such as privatization and the various forms of demographic growth that were introduced under the new classification and their impact on the perceived sustainability in these communities. We sampled 19 kibbutzim to represent the variety of organizational models and types of demographic growth in the southern and northern peripheries of Israel. Within each kibbutz, we collected data via interviews with community managers and questionnaires among community members. We analyzed the data using before and after comparisons to assess the impact of the changes implemented in these kibbutzim. We found an inverse relationship between the degree of privatization and the multiplicity of membership statuses in the community on one hand and an increase in the indices of perceived sustainability on the other. Our results suggest that the changes adopted by the kibbutzim did not provide the sustainability these communities had hoped for. Our findings may provide lessons for wider sociological questions concerning processes of privatization and stratification.

### **Inter-regional patient mobility and the accessibility of public healthcare - Does distance go far enough?**

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S06-S2 Changes in health care provision, spatial mobility and access to care  
IUT\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

In health economic and policy research the spatial dimension of demand and supply is often ignored or insufficiently regarded. This paper aims to add to the methodological development in this field by linking research methods from health economics with regional science and geography. We investigate the availability and spatial accessibility of public outpatient healthcare services and want to gain insight into how we would expect patients to reallocate if the regional level of service provision changes. Methodologically, we argue that the usually employed model for explaining spatial interactions, the gravity model, is not suitable for explaining variations in patient flows and propose a measure that incorporates spatial accessibility and availability of physician services: Two-Step Floating Catchment Areas (2SFCA). The advantage of the proposed methodology is that (1) it takes into account the precise location of physicians and the distribution of potential patients within a district, which is especially relevant for regions with an uneven population and/or physician distribution, where the regional physician density can be a misleading measure of accessibility, (2) it can predict the redistribution of patients in case of a change in supply without posing any assumptions about causality, under/overutilization or changes in the magnitude of utilization, (3) it does not require patient level data and (4) it can be applied to other fields of regional economics where spatial flows of agents are a relevant parameter (e.g. work migration versus commuting, consumer flows and commercial centre development). We show that 2SFCA considerably increase the explanatory power of a gravity model for patient flows. The results are robust to changes of the specification of the distance decay function.

### **University on the move: the practices and politics of mobility on a suburban campus**

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S16-S2 Students, University and the City: Location Choice and Mobility Behaviour, IUT\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

Universities generate important flows of mobility on a daily basis by attracting thousands of students and employees. The regulation and management of mobility represents a crucial issue for them in order to maintain and develop their attractiveness. The sustainability agenda is also urging universities to take measures in order to reduce their ecological footprint which relies heavily on mobility.

This paper is based on the case study of the University of Lausanne (Switzerland). This higher education institution counts 18,000 students and members of staff in 2017 and has been experiencing a steady growth (12,000 in 2005). The university was relocated from the city centre to the suburbs in the 1970s. The aim of the paper is to address both the mobility “demand” and “offer” over the long term in the case of the University of Lausanne.

The demand is addressed through an on-line survey that has been sent each year since 2005 to all students and employees. This source makes it possible to measure the modal split (cars, two-wheelers, public transport, bicycle, foot, etc.) and its evolution both in absolute and relative numbers. An additional analyses looks at the selectiveness of modal choice among the university community (logistic regression) according to variables such as gender, age, status or faculty.

The second part of the paper focuses on the measures that have been taken to meet and to regulate this mobility demand (politics of mobility). It is based on the analysis of various kinds of documents published since the first discussions on creating a campus in a suburban location in the 1960s. These documents are as diverse as planning documents of the university as well as the surrounding municipalities, timetables of public transportation, regulation of car parking spaces, etc. They make it possible to establish a spatial diagnosis of the campus (urbanization, infrastructures, measures, etc.). This analysis shows four ways to address mobility issues or what we call four “figures” of the campus: the linked campus, the managed campus, the integrated campus and the connected campus.

On the whole the paper brings elements to the debate on how to regulate mobility in suburban campuses which are numerous across the world.

### **What facilitates connections between regions? An empirical analysis based on Italy-Germany networks.**

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G04-O8 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 9:00 AM - 10:30 AM

Recent theoretical and empirical works have demonstrated that regions' connectivity positively impacts on regional economic performance (Boshma, 2005; Frenken et al, 2007; Asheim et al., 2012; Bathelt et al., 2014 Bettarelli and Resmini, forthcoming). In fact, networks produce a number of positive externalities that either complement or strengthen the set of assets available at the local level (Capello, 2009; Ascani et al., forthcoming). However, if the above works have mainly concentrated on benefits accruing to well-connected locations in terms of economic performance (productivity, employment, etc.), in this paper we investigate the elements facilitating economic relationships between regions. In so doing, we consider all the possible interactions between Italian and German NUTS-2 regions, thus giving shape to a matrix including 798 possible combinations. We make use of data at firm level and direct ownership ties between firms in order to quantify the intensity of interactions. We estimate a gravitational model where the intensity of interactions is function of regional characteristics and a vector of proximity indices, which measure the distance between pairs of regions in a number of domains. Beyond spatial proximity, we account for technological proximity, production structure proximity, cultural proximity and institutional proximity in order to understand how those indices affect inter-regions connections and how they mutually affect each other. In fact, if spatial proximity has been traditionally identified as the main factor either hampering or facilitating economic interactions, other types of proximity may extensively contribute to forge such interactions. Our findings suggest that: i) the importance of the spatial distance drastically decreases when we introduce the other proximity indicators; ii) the main determinant of economic interactions is the technological proximity; iii) the intensity of interactions is affected by the overall economic performance of regions, with German regions that tend to not interact with low-performance Italian regions, but not viceversa. Finally, we account for a potential reverse causality between technological proximity and intensity of interactions by making use of the instrumental variable strategy.

### **The sources of innovation: global networks versus local specialization**

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G07-O4 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

A large consensus exists nowadays on the idea that successful innovative processes are geographically bounded within regions (Storper, 1997; Cooke et al., 1998; Balland and Rigby, 2017), where persistent and dense interactions between co-located organisations stimulate economic specialization, learning and the development of new competences (Boschma and Frenken, 2007). Nevertheless, the ability of regions to capture, understand, absorb and re-use external knowledge is also regarded as a fundamental element to sustain and refine the local profile of specialisation and competitiveness (Bathelt et al., 2004). In fact, trans-

local networks can provide specific regions with diverse and related information sources and opportunities to develop novel trajectories of specialisation by combining internal and external knowledge resources (Owen-Smith and Powell, 2004; Boschma and Iammarino, 2009). Therefore, these extra-regional linkages are believed to play a crucial role in upgrading local competences, contributing to avoiding industrial and technological stagnation and lock-in, that may result from a rigidly inward-looking regional system of local interactions. The present article combines the insight of these streams of work by assessing and comparing the roles of regional external networks and internal specialisation in fostering local innovation. To this aim, we make use of data on Italian regions over the period 2007-2012 and we define regional external networks based on all the foreign subsidiaries of local multinational enterprises identifiable as global ultimate owners. Furthermore, we measure local innovation with patents in a variety of technological classes. Our main results suggest that both the internal specialisation and the outward networks of Italian regional economies can generate indigenous innovation, but the role of the network varies substantially according to its internal specialisation, its geographical spread and the specific location of the foreign subsidiaries. Our results, then, support a view of the regional innovation as an interactive process whereby valuable knowledge resources are not only generated within the reach of the local economy, but they are also integrated with external inputs. Therefore, one fundamental policy implication is that regional openness and the support of the internationalisation of local companies by means of outward foreign investment can be a catalyst of regional success. This contrasts with recent anti-globalisation views according to which the increase in the foreign operations of national companies impoverishes the local economy.

### **The relation between supply of road infrastructure and employment: an empirical evidence for Brazil**

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G24-O4 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 9:00 AM - 10:30 AM

The purpose of this essay is to present evidence regarding the relationship between road infrastructure and employment in Brazil. According to different theoretical approaches, the accumulation of infrastructure takes on different roles which, in summary, may have an impact on the increase in productivity in manufacturing, on the well-being of individuals or as a factor which induces the clustering of economic activity. The data used in this research are at the municipal level pertaining to the State of Parana, in Southern Brazil, and derived from the demographic censuses from 1970 and 2010. The selection of the aforementioned state along with the data is justified by the economic formation which is intrinsically related to road construction. In order to address the purpose of this paper, the empirical analysis was based on Duranton and Turner Model (2012), which, through a model of simultaneous equations, assumes a relationship between the initial supply of roads and a long-term effect on employment. The extension of the road network was calculated by employing georeferencing techniques, which allowed to determine the total number of kilometers per municipality. Simultaneity issues between variables were addressed by the use of two Instrumental Variables (IV) based on the origins of the initial stock of roads, namely the 1901 map of roads and paths, and the paths used by the tropeirismo (cattleman) in the 19th century - the Royal Viamão Corridor. The estimates obtained through the Limited Information Maximum Likelihood (LIML) reveals that a 10% change in the initial stock of roads lead to an 8% increase in employment over 40 years, suggesting a high level of importance of the road system for the local economy in the long run.

### **Operating within the "Grey Space" new models for university civic engagement and the challenges of making a difference**



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G22-O1 Institutions

IUT\_Room 303, August 29, 2019, 2:00 PM - 4:00 PM

This study looks at the emergence of new models of university civic engagement institutes and the hybrid roles which are being established to generate research impact in the UK. These roles sit in a 'grey space', the area which exists between the academic and the professional services, which by nature have mixed characteristics of both roles and leverage impact through these characteristics. The new government policy focus on impact is driving an agenda in UK universities around collaboration with local institutions, this work looks at whether the policy is working, what models are emerging and how universities are rising to the challenge. We will review the current policy context and drivers of the Research Excellence Framework, impact case studies and changing nature of UK research funding and how this is shaping activity in the social sciences and place based impact through collaboration with local public sector institutions. This review is grounded in the context of the role of anchor institutions and emerging civic engagement approaches. We will present a comparative assessment, where hybrid roles which span both the research delivery and the professional engagement and business management have been established. The comparative analysis will focus on the characteristics of these roles. We draw out the opportunities created for wider society, engagement with the local geography of the university, the theory of change and impact generated, business models employed and the roles and functions in the institutions. We will assess alternative models and develop a framework for measuring and evaluating the success of collaboration. This will be illustrated through a deep dive case study into City-REDI at the University of Birmingham, looking at the range of projects, partners and impact generated to understand the lessons for collaboration with universities, development of evidence based policy and the future of civic engagement which creates impact by default.

### **Sub-national government quality and regional development in Africa**

Mr Yohan Iddawela<sup>1</sup>, Dr Neil Lee<sup>1</sup>, **Prof. Andrés Rodríguez-Pose**<sup>1</sup>

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G09-R1 Regional Finance, Fiscal Issues, Investment or Capital Markets

IUT\_Room 303, August 29, 2019, 9:00 AM - 10:30 AM

Sub-national government has historically been highly important in much of Africa, and recent years have seen further decentralisation in much of the continent. Yet the role of sub-national government in explaining differences in economic outcomes across African regions has been largely ignored. To fully understand how institutions have shaped GDP per capita in Africa, in this paper we go beyond the traditional focus on national level institutions and consider subnational ones. We create a new index of sub-national government quality for 374 regions in 23 African countries and assess its impact on regional GDP per capita, measured using satellite data on night light density. To address causality concerns, we instrument sub-national government quality with the level of jurisdictional hierarchy of pre-colonial societies. Our results show a positive, significant and causal relationship between sub-national government quality and regional economic development. Better subnational governments are a powerful determinant of development in Africa.

### **Renewable energy regions as action arenas – challenges and opportunities for the governance of old and new regional commons**

**Mr Andreas Röhring**<sup>1</sup>

S20-S3 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

In face of the ubiquity of renewable energy resources decentralisation is a key catchword of energy transition and often seen as synonymous with new opportunities for regional development. But energy transition from fossil to renewable energies in Germany was mainly incentive driven by the Renewable Energies Act (EEG) provoking an economically rational behaviour of investors. Since 2000 it led not only to a rapid growth of renewable energies but also to intended and unintended impacts at regional commons as well as deficits of acceptance and conflicts. Groups of stakeholder affected by and those actively involved in the development of renewable energies were often not identical.

At the regional level we could find in general two strategies of actors: offering sites for external private investments in renewable energies as an installation landscape or initiating collaborative renewable energy projects and structures of energy governance to tap these decentralisation processes of energy transition as a force for regional development. Renewable energy regions as action arenas with governance structures were initiated about since 2008 with support of the federal or state level in order to improve the acceptance of energy transition. They used the opportunities offered by the liberalisation of energy markets to create renewable energies as new regional commons accompanied by the development of energy consciousness. But they also initiated projects regarding the maintenance of traditional regional commons. In face of the different regional contexts and constellations of public, private and collective actors there is a great diversity of governance structures, cooperative arrangements and key actors with different interests, cooperation experiences and action orientations.

Theoretically the presentation aims at the enrichment of regional science based governance approaches with the concept of common goods by the establishment of action arenas in renewable energy regions in Germany. Although formal spatial planning aims at the protection of public goods and regional governance in a broader sense at collective action, a theoretical-conceptual linkage from geography or regional science to debates about commons from an institutional perspective does not really exist. By examples of Bioenergy-regions and 100% Renewable energy regions in Germany will be discussed how actors define their action arenas spatially, how they manage the relationships between public, private and collective actors, how they act between powerful central institutions and regional requirements, how they ensure participation processes and how they contribute to the reduction of negative external effects of the development of renewable energies.

### **Activities reorganization in urban digital and ecological societies**

**Prof. Teresa Rojo**<sup>1</sup>, Prof. Antonio Piñero-Valverde<sup>2</sup>

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S02-S2 Digital and spatial transformation: structures and relations in the knowledge economy

IUT\_Room 404, August 29, 2019, 9:00 AM - 10:30 AM

What the urban planners designed or the activities regulated by the public administrations in the cities, had historically to become adjusted to the changes in the systems of social relations. For example, the cities of

Welfare State Societies were designed separating the uses of work, leisure, education and housing (urban sprawl or zoning), planning large road networks and parking to facilitate travel in private cars. The objective of this study is to investigate urban planning guidelines adapted to the social organization of activities and uses of the territory in so-called information, knowledge, digital and / or ecological societies already observable in countries such as Spain. The methodology used is exploratory and focuses on the case study of the city of Seville. A descriptive analysis of changes in commercial behaviour, transport and displacement, sporting uses, etc. is carried out. Other applied research techniques implemented are bibliographic and statistical analysis as well as Delphi questionnaire. In the discussion of results, the potential provided by digital technologies and innovations in collaborative economy are weighed. Among the results, the citizen's preference for a compact city model with proximity uses in the neighbourhood (commerce, sports, education, leisure) and time savings in motorized travels stands out. The extensive digitalization of work and leisure has reduced the time of physical social relationship. As citizens want to enjoy relationships "village style" in their spare time. The return to the local neighbourhood of leisure activities, trade, education and sports, is also a citizen response to the ecological decisions of city councils to increase the prices of motorized transport parking and promote walking, cycling or scooter

Regarding commercial spaces, in the digital society it can be seen that the large classic shopping centre designed as a large building with stores inside it has been losing interest. While the taste for the street and for moving away from closed spaces (in a way of life dominated by activities with screens and virtual contacts) explains the good reception of the shopping centres designed to reproduce pedestrian streets of traditional urban centres.

The conclusions also include the tendency to increase the robotic automation of services such as laundries or the urban rental of motorcycles or electric cars, and the potential demand of so many other services likely to be known and contracted by virtual means and to be organized by collaborative economy.

### **Actuarial credibility approach in assessment of major infrastructure projects in Poland**

**Dr. Bartłomiej Rokicki<sup>1</sup>**, Prof. Krzysztof Ostaszewski<sup>2</sup>, Solomiya Yushchak<sup>1</sup>

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G10-O1 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 29, 2019, 4:30 PM - 6:00 PM

Since its EU accession, major infrastructure projects have been one of the main regional policy tools in Poland. As a result, between 2004 and 2015 there were 240 projects with budget over euro 50 million each and over 130 projects with budget over euro 100 million each. Yet, the experience of other countries shows that the implementation of big projects usually leads to many problems and ends up with ineffective spending of public funds. In particular, Flyvbjerg (2003, 2014) argues that the big infrastructure project delivery is highly problematic with a dismal performance record in terms of actual costs and benefits. This paper applies actuarial credibility approach to analyze viability of major infrastructure projects in terms of the cost overruns and delays. In particular we verify whether the amount of financial means devoted to the big projects is adequate as compared to the real costs associated with their accomplishment. We compare the data on projects co-financed by EU funding with the ones fully financed from national sources. We find that the performance of major infrastructure investments depends on the source of funding, type of investment or region of implementation. We show that actuarial credibility approach allows to foresee the degree of possible overruns and delays before the project implementation.

### **Tourism, smart specialization, growth and resilience in European regions**

**Dr João Romão<sup>1</sup>**

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G04-O6 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 4:30 PM - 6:00 PM

This work constitutes a first attempt to assess the role of tourism within smart specialization strategies in European regions. By integrating into the model different strategic options regarding the role of tourism and its relatedness with other economic activities, the results suggest which options can offer higher benefits for the regional economies. The aim of this study is to analyze the impact of tourism dynamics on regional economic growth. Although a broad range of studies seemed to confirm the so-called "Tourism-Led Growth" hypothesis, revealing positive effects of tourism boosting economic growth, other international comparative analyses have shown ambiguous results, whereas recent studies suggest that the impact of tourism tends to decrease over time, as the mobilization of resources for tourism development transforms regional economic structures. In this work, the potential impacts of tourism on growth are analyzed during a long period (2004-2017), comprising phases of growth, recession and recovery, which allows to assess the ability of each region to recover from an external shock (regional resilience). Moreover, information related to the role of tourism and its relatedness with other economic activities within the sectorial priorities defined by each region for their smart specialization strategies is added to the model, in order to identify potential differences in regional economic performance. The work includes a literature review focused on the concepts of Tourism-Led Growth, Smart Specialization and Resilience, preceding the presentation of a panel data econometric model. The results of this work-in-progress will be presented and discussed, synthesizing the main contributions and limitations of the analysis, while opening new research opportunities. The main expected result of this analysis is the identification of the different impacts that diverse strategic options related to the priority of the tourism sector and its different relatedness with other economic activities within regional innovation strategies generate on growth, development and regional resilience. By taking into account the pre-existing levels of economic development, the results may also reveal to which extent a process of convergence between European regions is occurring.

### **The plain of the millennial olive groves of Ostuni: governing the landscape of hypermodernity**

**Mr Federico Ciraci<sup>1</sup>**, urban planner francesco maiorano<sup>2</sup>, architect marco massari<sup>3</sup>, **Ms Flavia Rosano<sup>4</sup>**

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S47-S1 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 11:00 AM - 1:00 PM

In the high Salento, along the Adriatic, is the territory of Ostuni. A place of anthropological diversity where Messapian, Roman, Norman, Spanish memories of other cultures, not just European ones, have deposited an immense deposit of goods and resources; contaminations that have shaped a territory from the dazzling landscape in its plural composition with a constant presence of olive trees, which survive, even in productive terms, for millennia. A network of resources that intersect with the olive tree: the archeology, the historical center, the medieval gardens, the "deep" countryside and the farms, the coastline and the naturalness of the coastal wetlands. A whole that forms a unique, inimitable, inestimable environmental ecosystem. The rediscovery in the period of hypermodernity, the immense economic and social value of the landscape composition of the Ostuni territory, is leading to new awareness in the governance of the territory and the built environment with the centrality of the economic value of the landscape: a true agglomeration economy. From the studies of the new PRG of B. Gabrielli of the nineties to today several "emerging" questions from an aggressive demand for the "landscape" good led to new government policies

aimed at the protection / preservation of the territory and the valorization / recovery of the historical city . Nature and culture have become the main links of ecological networks that are passing through the territory of Ostuni towards a new dimension and evolution of historical and environmental resources. The objective of this paper is the story of a process, of a "meridian" experience of moving awareness.

### **A Spatial Econometric Analysis of the Impact of State Tax Policies on Small Business Growth**

**Dr. Amanda Ross**<sup>1</sup>, Dr. John Deskins<sup>2</sup>, Dr. Donald Lacombe<sup>3</sup>

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G11-O2 Spatial Econometrics

MILC\_Room 310, August 29, 2019, 2:00 PM - 4:00 PM

We examine the spatial relationship between state tax policy and small business growth. There is an existing literature that examines spatial competition with regards to tax and welfare policies, arguing that state and local governments set fiscal policies inefficiently. On the other hand, there is a literature on agglomeration economies, which would suggest that if taxes decrease business activity in general, there may be negative effects both within a jurisdiction and in nearby areas. Drawing upon spatial econometric methods, we examine how differences in state tax policy affect small business growth. Spatial methods allow us to estimate the direct effects of the policy, as well as any spillover effects of policies in adjacent states. We find that there are important direct and indirect effects of state tax policy on small business activity. Our results indicate that local policy makers need to be aware of tax policy in neighboring jurisdictions as this affects growth within their boundaries.

### **Out migration of young workers from rural areas and their return - Event history analyses**

**Dr. Anja Rossen**<sup>1</sup>, Dr. Cornelius Peters<sup>2</sup>, Moritz Meister

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G17-O3 Population, Migration and Mobility Behaviour

IUT\_Room 101, August 30, 2019, 9:00 AM - 10:30 AM

This paper focusses on the spatial mobility of young workers. In particular, we are interested in the factors determining the decisions of workers who recently completed vocational training to emigrate from rural areas and subsequent return migration. Employing event history analyses, we provide evidence on when during individual working life these migration events happen (if at all) and the significance of individual and regional characteristics for the likelihood to migrate.

The economic development of regions significantly depends on localised human capital which is supposed to be crucially affected by the availability of young skilled workers. However, in Germany in particular some rural areas experience a significant out migration of young people. Not only high school graduates frequently emigrate from rural areas to a big city for their studies or vocational training, but also young workers after completing vocational training in a rural region do so. This paper focusses on the latter group, i.e., those young workers in which firms already invested. We are interested in the share of these workers who return to the location of origin after acquiring work experience elsewhere, e.g., in a big city, selection effects related to initial and return migration, and regional characteristics determining the migration decisions. To analyse these decisions, we make use of extensive secondary data, the Integrated Employment Biographies (IEB) of the Institute for Employment Research (IAB).

The IEB provide detailed information on individual employment biographies of all workers in Germany except the self-employed and civil servants. Each employment spell contains information on, among others, the period of employment at a daily basis, employment status, occupation, gross daily wage, and the location of employment at municipality level. Furthermore, from 1999 onwards information on the municipality of residence is available. Hence, we are able to identify migration events after a completion of vocational training at a daily basis. We relate these events to individual characteristics (e.g., gender and age) as well as characteristics of the preceding vocational training (occupation, wage) and employer (size, industry, productivity level, workforce composition). Furthermore, using the region identifier available in the IEB, we merge information on regional labour market conditions, the regional industrial structure, as well as amenities in order to analyse their importance for individual migration decisions of workers who recently completed vocational training.

### **Germany' national minimum wage – Implications for regional disparities**

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G05-R1 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 2:00 PM - 4:00 PM

This paper analyses the regional implications of the statutory minimum wage that was introduced in Germany in the year 2015. Using a difference-in-differences estimation strategy and employing administrative data, we find that municipalities in which the share of workers that initially earned less than the minimum wage experienced a relative increase in wages at the lower end of the wage distribution. The policy therefore contributed to spatial convergence in lower-tail wages. Increases in wages are, however, not accompanied with by reductions in employment levels of by increases in the unemployment rate. While the minimum wage did not lead to increased migration, high-bite municipalities experienced an increase in the share of employees working in other municipalities, suggesting that the policy imposed costs on some workers in the form of commuting. Furthermore, we find that corporate tax revenues fell in high-bite municipalities, while increased labour costs were in parts passed on to consumers through higher prices for non-tradable goods and services. Taken together, the minimum wage has relatively benefitted low-wage workers in high-bite municipalities and transferred surplus from firms to workers.

### **The determinants of renewable energy consumption in French regions**

Ms Ferdaous Roussafi<sup>1</sup>

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G14-O3 Energy and Ecological Transition  
MILC\_Room 410, August 28, 2019, 4:30 PM - 6:00 PM

Energy transition tends to be at the heart of political and scientific agendas. Indeed, France has made national commitments such as National Strategy of Ecological Transition towards Sustainable Development and the energy transition law for green growth. This transition is also a matter of global concerns, as evidenced by some redefinitions of international (Kyoto Protocol) and European (EU Energy-Climote Package) energy policies. However, this transition is carried out according to different rhythms and temporalities according to the territories; it therefore seems essential, as many studies have pointed out, (Bridge et al., 2013; Hansen and Coenen, 2014; Murphy, 2015), to pay more attention to territorial dynamics in order to better understand the diversity of energy policy configurations and trajectories.

In this context, we seek to study the factors that determine the regional consumption of renewable energies in France. We build an econometric model that explains the evolution of the share of RE consumed at the regional level over the period 1990-2015. Our sample is made up of the 22 metropolitan regions and the French overseas departments. Using panel data methods allows us to study simultaneously the dynamics and heterogeneity of regions.

The results of the unit root tests allow us to maintain the assumption that the series are first-order integrated. The cointegration tests provide strong evidence that all panels in the data are cointegrated. Like Apergis et al., (2010), we employ a panel cointegration and error correction model to infer the causal relationship. The short-run estimates indicate that there are a statistically significant positive association between the share of renewable energy consumption and its lags and between this variable and economic growth measured by real GDP growth rate, but a statistically significant negative relationship between GDP per capita and renewable energy consumption and between this variable and nuclear energy production per capita. We also find that there is no environmental concerns effect explaining the growth of renewables in French regions.

### **Experiences and hypotheses of economic transition, territorial reorganization and ecological progress in the territories of the post-Colombian armed conflict.**

**Prof. Pietro Rovigatti<sup>1</sup>**

<sup>1</sup>*University G. D'annunzio Of Chieti Pescara, Pescara, Italy*

S47-S2 Maintenance and regeneration of the territory and the city as an occasion for their ecological transformation

MILC\_Room 409, August 28, 2019, 2:00 PM - 4:00 PM

The agreement signed in Havana, in 2016, between the FARC (Colombian Revolutionary Armed Forces) and the Central Government of Colombia - one of the emerging economic and social countries of Latin America, richest in biodiversity and natural resources - it has not only closed more than fifty years of social, environmental, economic and military conflicts, ending, perhaps forever, a war-filled season of crimes and tragic consequences for civilian populations, long believed to be infinite. He also put on the black and white a long list of commitments between the parties in conflict, among which are those of a territorial and economic nature, destined, in the intentions of the contracting parties to the agreement, to design a new strategic territorial structure in vast regions of the country, predominantly agricultural and forest pastoral, called "deep Colombia" (F. Diaz Diaz D. Unigarro, 2018).

It is also of interest to note that within the Peace Agreement in question the word "plan", understood both in terms of the socio-economic program and of territorial development and rebirth, and also as a program of works of evident significance and territorial value, appears many times. For example, with regard to a Nation Plan for the development of third level infrastructures, or for the defence against integral risk, or in support of rural communities, real victims of the conflict.

But three years after the signing of this agreement, what is now the state of planning and implementation of these programs, and how these programs have tried to conceive, and put into effect, an idea of a new territory project, linked to a hypothesis of economic transition, territorial reorganization and ecological progress in the territories of the post-Colombian armed conflict?

The paper tries to answer this question starting from the examination of the context conditions and the analysis of the programs of territorial government, and in light of the radical processes of economic transition under way, focusing on the case study of the Department of Guaviare, placed at the threshold of

the Colombian Amazon region, and specifically in the “vereda” of Charrasquera and Charras, in the municipality of San José del Guaviare, object of a recent international participatory planning workshop that is illustrated here as an experience of interest in the transition path to the post fossil (and the overcoming of the cocalera economy) nowadays in some regions of the country.

### **How Do Local Labour Markets Look From Above? An Automated Satellite Imagery Approach**

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G03-O1 Big Data and Regional Science  
IUT\_Room 408, August 29, 2019, 9:00 AM - 10:30 AM

Administrative areas do not accurately reflect the contemporary spatial manifestation of labour market linkages. Local labour market areas (LLMAs) have been shown to provide a better representation of geographic labour market activity. Traditionally LLMAs are delineated based on commuting flow data. However, commuting data are expensive to collect, are sporadically collected in developed countries and rarely available in less developed countries. Yet, recent advances in computing capacity and increased availability of satellite imagery offers a unique opportunity to generate LLMAs in poor environment context in a cheap, frequent and automated way. This papers aims to develop an automated satellite-based approach to define LLMAs.

### **Updating (spatial) Shift-Share Analysis to Review the Decline of French Manufacturing Industry (1993-2015)**

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G10-O4 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 2:00 PM - 4:00 PM

The downward trend in employment in French manufacturing industry, not to mention its dramatic fall in the aftermath of the 2008 economic crisis, is reflected in significant regional disparities. These two issues – the national adverse trend and the resulting inequalities – are of great political importance and much remains to be done to better understand them. To this aim, this article proposes an update of the shift-share analysis (SSA) method and applies it to the French manufacturing industry case. The standard SSA explains regional inequalities, i.e. deviations of regional employment growth rates from the national trend, by specific regional competitive and industry-mix effects. But to implement this decomposition, all national industries are required to exist in all regions. Our update removes this unrealistic constraint and generalizes the SSA approach to the usual case where regions have missing sectors. In addition, the emergence over time of initially missing sectors and the explosive growth or degrowth of some small sectors are incorporated as specific components in the SSA decomposition, along with the competitive and industry-mix components. This generalized SSA method is then applied to better understand the decline of French manufacturing sectors over the period 1993-2015 at NUTS 2, 3 and LAU 2 geographical levels. Results show that regional inequalities over time are induced by competitive effects, i.e. inequalities in average sectoral growth rates, rather than industry-mix effects, i.e. inequalities due to differences in economic structures. In addition, the smaller the geographical scale, the greater the effects of emergence and outliers on regional inequalities.



## **The clash of policies: Do green cars affect driving behavior?**

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S59-S1 Road Safety Economics for Resilient Countries and Regions  
IUT\_Room 108, August 29, 2019, 2:00 PM - 4:00 PM

Energy-efficient cars have become increasingly prevalent in recent years, in many cases because of governmental policies that incentivize consumers to purchase them. Importantly, these cars are characterized by light weight and small size, both of which are likely to negatively affect the car's safety. A critical research question is, therefore, do policies that incentivize the purchase of energy-efficient cars – thereby increasing their presence on the roads – also increase car-accidents' fatality rates?

However, whereas energy-efficient cars are less safe due to their small size and light weight, their limited safety may stimulate their drivers to drive more carefully.

To measure the difference in driving behavior between drivers of small versus large cars, we first utilize Israeli Police records of all fatal and severe car accidents between 2007-2015. Specifically, we examine whether drivers of small cars are more likely to be involved in a severe or fatal accident. We then use Israeli Police records of all traffic violations between 2007-2015 to address the likelihood of selection bias (i.e., careful drivers own small cars) and test if drivers of small cars are less prone to traffic violations, suggesting that they drive more carefully.

Our preliminary results suggest that drivers of small cars are less likely to (1) be involved in fatal car accidents and (2) commit traffic violations than drivers of large cars. We postulate that considering the limited safety of their cars, drivers of small cars drive more carefully, thereby offsetting the increased hazard inherent to the cars they own.

From a policy perspective, our study examines two critical policy goals: energy-efficiency and road-safety. While prior research associated energy-efficiency policies with increased risk of fatalities, our study provides policy makers with a better understanding of the complex relationship between energy-efficiency and road-safety, so that more informed policies could be designed.

## **Geography of Environmental Life Cycle Assessment**

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S17-S2 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 2:00 PM - 4:00 PM

Life cycle assessment (LCA) is a multicriteria and comparative methodology quantifying the environmental impacts of products and services throughout their entire life cycle. Conceived in the late 1960s in the USA to evaluate industrial systems, it was first dedicated to the analysis of energy consumption and solid waste generation. Parallel to its standardization in the 1990s and increasing integration in environmental policy making in the 2000s, the scope and issues covered by LCA studies broadened with the diversification of environmental impact categories and the complexification of related models. These methodological developments mobilized a growing scientific community, originally hosted in research centers from, mostly, the European Union, the USA and Japan. Despite the ambition of developing a holistic approach assessing the environmental burdens of global economic activities, LCA focused in its first decades on particular contexts with poor consideration of situations and systems in “emerging” and “developing” countries. This contribution seeks to investigate the circulation of the methodology by exploring the spatial redistribution of LCA scientific production from the 1990s onwards. The analysis is based on bibliometric data extracted from three scientific journals addressing LCA. The preliminary results at the country level show a progressive

increase and spatial expansion of publication activities. The territorial redistribution of scientific publications happens in two waves, first to South-East Asia and South America starting at the beginning of the 21st century and accelerating in the late 2000s, particularly with the steady and rapid growth of the Chinese scientific production. The second wave of publication redistribution starts in 2010 with a growing number of publications originating from African or Middle-Eastern countries.

### **FDI and Labor Market Dynamics in a Developing Country: Evidence from Indonesian Plant-Level Data**

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G05-O3 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 4:30 PM - 6:00 PM

Inward FDI brings advanced technology into developing countries. Its impact on the host region can be classified into direct and indirect effects. Direct effect refers to the increase in productivity, employment, and wages of foreign-acquired firms. Among indirect effects, previous studies have mostly focused on identification of spillover effects on local wages and productivity of local firms and scarcely studied the impact on employment.

Because of their size and productivity, entry of MNEs should intensify competition in local labor and product markets. If competition effects outweigh spillover benefits in those markets, local wages increase and local firms reduce production, resulting in a decrease in their labor demand. Therefore, whether inward FDI contributes to employment creation by local firms needs empirical evaluation.

In this study, we employ plant-level data in Indonesian manufacturing. Inward FDI has contributed to growth of manufacturing production in Indonesia, but unskilled-intensive output expansion is no longer adequate to maintain its economic growth. Failing to make the transition to skill-intensive production may mire the country in the middle-income trap. Hence, employing microdata, we individually evaluate the impact of inward FDI on wages and employment of skilled and unskilled workers in local firms.

Our results are summarized as follows. First, inward FDI increases local wages, particularly for skilled workers. Second, spillovers from MNEs improve productivity of local plants. Finally, with regard to employment, most local plants increase demand for unskilled workers but reduce that for skilled ones. These results suggest that although spillover effects increase labor demand of local plants, severe labor market competition, along with the inelastic supply of skilled workers, lowers demand for skilled workers.

FDI's impact on employment differs significantly between low- and high-productivity plants, too. The former tends to reduce both types of employment while the latter tends to increase them. Stated differently, entry of MNEs causes resource reallocation from low- to high-productivity plants. Applying a productivity growth decomposition by Foster et al. (2001), we find resource reallocation considerably contributes to regional productivity growth.

In sum, attracting inward FDI is effective to enhance regional productivity in Indonesia. However, inadequate supply of skilled workers can be a bottleneck to the expansion of production as it cancels out spillover benefits. Moreover, the increased relative wages of skilled workers discourage local firms to adopt skill intensive production. This may reduce the innovation potential of the country and may hamper economic growth in the long-run.

## Stochastic Analysis of Interregional Migration in Kyushu Area in Japan: Trend and Future Prediction

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G17-O4 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 30, 2019, 11:00 AM - 1:00 PM

Currently, in Japan where low growth continues, the declining population due to the declining birthrate and aging population is a matter of concern. And the declining population is said to be more prominent in rural areas than in cities. Therefore, knowing the trend of population movement becomes very valuable information in talking about the future image of the Japanese economy. This study investigates interregional migration in Japan. There are 47 prefectures in Japan, but this study will not take up any prefectures here and focus on only 8 prefectures in Kyushu area. Kyushu area is located in a Japanese southwest area and also near Asia (China and Korean peninsula), and economical activation is expected in the future.

Kyushu area consists of the following prefecture: Fukuoka, Saga, Nagasaki, Oita, Kumamoto, Miyazaki, Kagoshima and Okinawa. Economic environment is different from other prefectures because Okinawa prefecture is island economy in it (Kyushu area, it itself is also an island). The center of the Kyushu economy is Fukuoka prefecture (Fukuoka-ken).

First, we analyze two kinds of statistical data on population movement. One is prefecture data, and the other is municipality data. Next, it will be predicted in the future using this information. This study develops a simple forecasting model using Markov chain, known as a stochastic model. If the transition probability matrix can be appropriately estimated, a forecasting model using the Markov chain can be constructed. In this study, we estimate the transition probability matrix of Markov chain directly from the Origin-Destination table of population movement. In addition, a method of estimating transition probability matrix by least squares method is introduced. Then, the future distribution (ergodic distribution) of the population movement is analyzed by obtaining the eigenvector of the estimated transition probability matrix.

### Fiscal policy and its asymmetric regional responses.

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G09-O2 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 2:00 PM - 4:00 PM

Using an adjusted and extended version of the European Commission's – JRC (Seville site) spatial Dynamic General Equilibrium model - RHOMOLO-v3, we analyse the impact of: (a) A balanced budget fiscal expansion where we distinguish between current/capital government spending and we differentiate between full fiscal regional autonomy and centralized balanced budget (b) We further study the impact of a reduction in debt-to-gdp ratio at regional level where we hypothesize a situation in which the fiscal authorities adjust their policies as much as needed so as to end up with lower debt.

Our simulation experiments focus on the Italian Economy. Italy has already some degree of devolved power to regions while tax-varying power is currently used for unproductive public consumption. Moreover Italy is characterized by high debt and low growth. Given Italy's current fiscal stance some sort of fiscal consolidation is likely to be undertaken. In addition to this there exist significant regional disparities North-Centre vs Mezzogiorno.

Regarding public debt consolidation we, adopt a rule-like approach to policy. We assume that fiscal policy is conducted via simple feedback policy rules (Schmitt-Grohe and Uribe (2007), Coenen et al (2008), Philippopoulos et al. (2017), Sakkas and Varthalitis (2018)). Government consumption is allowed to respond

to the inherited public debt-to-GDP ratio as deviations from policy targets. Our simulation results are driven by ad-hoc choices in the feedback policy coefficients across the policy rules.

While the effects, either of expansion in productive capital expenditure such as public investment (e.g. Aschauer 1989, Fisher and Turnovsky 1998, Lecca et al., 2010, Alonso et al., 2009; Linnemann and Schabert, 2004) or fiscal consolidations have been extensively investigated in the macroeconomics literature at the country level (Forni et al. (2010), Almeida et al. (2013), Bi et al. (2013), Erceg and Linde (2013), Economides et al. (2017), Sakkas and Varthalitis (2018)) the regional responses of fiscal policy have not yet been thoroughly analyzed. Instead, in our study, using as a vehicle of analysis our dynamic spatial model, we show that significant asymmetric responses may arise with regard to the effects of fiscal policy and its regional dissemination.

Our study shows that while Cohesion Policy's target is to promote and support the overall harmonious development of its Member States and regions, especially in the post-crisis period, this can be hindered by several national policies, such as fiscal policy for the sake of fiscal sustainability or by the level of fiscal autonomy.

### **Evaluation Modeling of the Water Environmental Policy in the Integrated River Basin and Bay Area**

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G24-O2 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 2:00 PM - 4:00 PM

The purpose of this study is to develop the environmental policy evaluation model, and to analyze comprehensively the environmental and economic impacts in the integrated river basin and the bay area. The target area is the Toyogawa River basin and the Mikawa bay area that is a part of the Aichi Prefecture, Japan. The Toyogawa River basin has an area of 724 square kilometers, which spreads from the urban, bay area in the south the rural, mountainous area of the north. Particularly the southern area of the basin has been developed ever since the water for the household, agricultural, and industrial use has been supplied from the Toyogawa River. Today, this development includes the high value-added agricultural systems in the cities of Toyohashi and Tahara, and the manufacturing base, which includes the automobile industry, around the beyond the Mikawa Port. We analyze the regional economic and environmental data of the Toyogawa River Basin and the Mikawa bay area, and construct the system model to clarify the interaction between the regional economy and the water environment in the basin, which model describes the socio-economic activities and its impact on the water environment in the Mikawa bay. The model is mainly considered the water quality and environment as maximum restrictions and has the aim at the purpose of maximizing the GDP of the basin area with consideration for the transportation structure of the water pollutant in the integrated river basin and bay area. Our model is the regional model to evaluate the environmental policy in the integrated area, which is defined as the simulation model. The simulation model is for example to evaluate the land use conversion and industrial subsidy policy to improve the water environment of the bay. Of course we can analyze the relationship between the regional economy and the water environment of the bay, and estimate the impacts of the regional economic activities.

### **The influence of reviewers' uncertainty in measuring touristic destinations reputation: an empirical application to Venice.**

Dr. Luca Salmasi<sup>1</sup>, Dr. Nicola Camatti<sup>2</sup>, Prof. Jan Van der Borg<sup>2</sup>, Prof. Isabella Procidano<sup>2</sup>

<sup>1</sup>Università Cattolica Del Sacro Cuore, Rome, Italy, <sup>2</sup>Università Cà Foscari, Venice, Italy

The use of online reviews has become very popular to measure a destination reputation. For instance, TripAdvisor's data are often used to obtain indicators measuring how a city compares with respect to other destinations, or to provide rankings of different areas within the same destination. These measures are generally obtained by aggregating ratings assigned by reviewers to a variety of attractions belonging to the area of interest. However, it may be that reviewers use different scales to rate attractions, or that the rating is assigned with a certain degree of uncertainty.

We propose to isolate reviewers' rating uncertainty from real preferences by using CUB models, recently proposed by Iannarino and Piccolo (2011). We assume that the distribution of ratings of a certain attraction can be modelled as a mixture of distributions, one capturing informed evaluations and another associated to ratings assigned with uncertainty. Applying CUB models we are able to isolate the two effects and obtain a measure of reputation that does not depend on uncertainty.

In this work we use data from TripAdvisor for the city of Venice. We collected information about ratings assigned to museums, churches, historical buildings and places of interest for each review assigned since the first available review. Moreover, we also collected information about reviewers (e.g., age, gender, nationality and interests). We use this hitherto unexploited data source to obtain a dynamic measure of reputation for various areas of Venice. Then, we apply the CUB model to isolate true ratings, netting out the effect of reviewers' uncertainty, and compare the two indicators.

We find that uncertainty plays an important role in reviewer's judgements and with differing effect through across time periods. According to our results uncertainty in reviewer's ratings affects significantly the distribution of ratings and should be accounted for in order to obtain more precise measures of reputation for touristic destinations.

### **Analysis of the sustainability of the Patios Festival (Intangible Heritage of Humanity)**

Prof. Genoveva Dancausa<sup>1</sup>, Sra. Inmaculada Crespo Morán<sup>4</sup>, Dra. Genoveva Millán Vázquez de la Torre<sup>2</sup>, Dr. Javier Sánchez-Rivas García<sup>4</sup>

<sup>1</sup>Universidad De Córdoba, Córdoba, Spain, <sup>2</sup>Universidad de Loyola Andalucía, Córdoba, Spain, <sup>3</sup>Universidad de Córdoba, Córdoba, Spain, <sup>4</sup>Universidad De Sevilla, Sevilla, Spain

S67-S1 Sustainability, water and energy use in the productive sectors: tourism, services, industry, agriculture and administrations, MILC\_Room 409, August 29, 2019, 2:00 PM - 4:00 PM

Cordoba is a heritage city located in the south of Spain, has four recognitions by UNESCO as a World Heritage Site, of which three refer to the material heritage (The "Mosque" recognized in 1984, (Unesco, 1984), the "Historic Center of the City" (Unesco, 1994), the "Archaeological Site of Medina Azahara" (2018)) and one that is intangible heritage ("the Festival of the Patios" (2012)). With this rich cultural heritage this city is a potential tourist destination, in the segment of cultural tourism. The "patio" as a material part of the house and social area of expansion in certain houses has been evolving from the Roman era to the present, becoming an element of tourist attraction since its inclusion of the "Festival Patios of Córdoba" (FPC) in the Representative List of Intangible Heritage of Humanity (LRPI), promoted by UNESCO, in December 2012 has been a milestone in the celebration of a popular holiday conditioned both by the habitat that welcomes it, the "patios houses" located in the historic center of Córdoba, as for the way of life of those who generate this celebration, the inhabitants of these patio houses. A way of life-habitus- closely linked, in turn, to said habitat.

The patio has generated a growing tourist interest awakened in both national and international markets. This fact implicitly carries with it a responsibility that affects both the organizer of the competition that has retained the Festival during the last eighty years, the town hall, and the generators of the cultural dynamics that make it possible, the inhabitants of patio houses. Currently, the Festival is subject to two tensions: the intense tourist activity that is generated during the days of its celebration in May, and the safeguarding and protection measures that aim to preserve and maintain the heritage resource so as not to exhaust, precisely, its interest tourist. The coordination of these two forces, apparently opposed, should be the objective of those who intend to assume the role of promoter of a management plan of the FPC, since it is, precisely, the capacity of the site to develop a good management tool the aspect in the one that UNESCO puts more emphasis to maintain the inclusion of the good in the LRPI.

In this work we will focus on the Patios Festival and its sustainability from the point of view of the Offer, surveying the managers and owners thereof.

### **The sustainability of the tourism sector from wine tourism**

Dr. Javier Sánchez-Rivas García<sup>1</sup>, Dra. María Pablo-Romero<sup>2</sup>, Sra. Inmaculada Crespo Morán<sup>3</sup>

<sup>1</sup>Universidad De Sevilla, Sevilla, Spain, <sup>2</sup>Universidad De Sevilla, Sevilla, Spain, <sup>3</sup>Universidad De Sevilla, Sevilla, Spain

S67-S1 Sustainability, water and energy use in the productive sectors: tourism, services, industry, agriculture and administrations  
MILC\_Room 409, August 29, 2019, 2:00 PM - 4:00 PM

With the exhaustion or saturation of traditional tourism typologies such as sun and beach tourism, new tourism alternatives based on experiences and sensations have been developed since the beginning of the 21st century (Carballo et al., 2015). All this is encouraged by an important effort of the different national administrations to develop economic activities that allow the sustainability of the rural populations, and thus avoid the exodus to the cities (MAGRAMA, 2017).

On the other hand, from the budgetary management bodies and allocation of grants and subsidies of the Common Agricultural Policy of the European Union (Ministry of Tourism, 2014) is working in the framework 2015-2020 to seek the development of tertiary activities in the environments agricultural sectors susceptible to being beneficiaries of public transfers to production, thus achieving a greater generation of employment and wealth in primary holdings.

In this sense, tourist activities related to the collection, grinding, tasting, etc. are being developed. of the olive or the grape, key products of the gastronomy and therefore, of that new tourist typology of experiences and sensations. Wine tourism represents an important weight in gastronomy tourism, and it is consolidating as a considerable reason that drives the consumer to travel.

In this work, qualitative and quantitative analysis of tourism demand related to enology for the national territory is analyzed, specifically the case of the Denomination of Origin Montilla-Moriles, making special mention of the available economic data, especially the hotel offer of the region.

The objectives that are established are the deepening in this recent tourism typology as a sustainable alternative to the traditional ones, as well as the economic characterization of it. From these, a methodology based on the preparation of a qualitative situation analysis of the demand and registration of the figures of the main economic indicators related to the available data is established. A "DAFO" analysis is also established for the destination of the Wine Route in the Montilla-Moriles Denomination of Origin. Finally, a series of conclusions are established.

With the different results obtained, it can be concluded, among other considerations, that this tourism typology still has a path of development and consolidation, since the vast majority of the wineries that are part of the Denomination of Origin Montilla-Moriles, lack the processes, qualified personnel, tools, facilities and incentives necessary to attend, from a supply point of view, to the growing demand related to wine tourism.

### **Relationship between economic growth, tourism and energy consumption: A review**

Dra. Maria del Populo Pablo-Romero<sup>1</sup>, Dr Beatriz Palaces-Florencio, Dr. Javier Sánchez-Rivas

<sup>1</sup>Universidad de Sevilla, Sevilla, España

S67-S1 Sustainability, water and energy use in the productive sectors: tourism, services, industry, agriculture and administrations

MILC\_Room 409, August 29, 2019, 2:00 PM - 4:00 PM

Tourism is an important economic activity in the international context. Recent studies have shown that this activity generates economic growth and promotes the creation of employment. However, the growth of tourism activity also has negative effects on the environment, since it generates CO2 emissions, fundamentally due to energy consumption. The need to control CO2 emissions to combat climate change and global warming has generated an incipient stream of studies that analyze the impact of economic growth associated with tourism on CO2 emissions and energy consumption. However, to date, the studies carried out seem to be disconnected and it seems that they are emerging without one or several clear lines that allow drawing the reality of the analyzed effects. From the review of all the studies carried out up to the current date on this topic and published in JCR, Scopus and other journals accessible through Google Scholar, this article analyzes the studies carried out so far, identifying the different branches of study and determining the gaps that remain to be explored. Although it is a line of research that has grown strongly in the last two or three years, there are still few studies carried out.

### **Analysis of the sustainability of the Patios Festival (Intangible Heritage of Humanity)**

Prof. Genoveva Dancausa<sup>1</sup>, Sra. Inmaculada Crespo Morán<sup>4</sup>, Dra. Genoveva Millán Vázquez de la Torre<sup>2</sup>, Dr. Javier Sánchez-Rivas García<sup>4</sup>

<sup>1</sup>Universidad De Córdoba, <sup>2</sup>Universidad de Loyola Andalucía, <sup>3</sup>Universidad de Córdoba, <sup>4</sup>Universidad De Sevilla

S67-S1 Sustainability, water and energy use in the productive sectors: tourism, services, industry, agriculture and administrations, MILC\_Room 409, août 29, 2019, 14:00 - 16:00

Cordoba is a heritage city located in the south of Spain, has four recognitions by UNESCO as a World Heritage Site, of which three refer to the material heritage (The "Mosque" recognized in 1984, (Unesco, 1984), the "Historic Center of the City" (Unesco, 1994), the "Archaeological Site of Medina Azahara" (2018)) and one that is intangible heritage ("the Festival of the Patios" (2012)). With this rich cultural heritage this city is a potential tourist destination, in the segment of cultural tourism. The "patio" as a material part of the house and social area of expansion in certain houses has been evolving from the Roman era to the present, becoming an element of tourist attraction since its inclusion of the "Festival Patios of Córdoba" (FPC) in the Representative List of Intangible Heritage of Humanity (LRPI), promoted by UNESCO, in December 2012 has been a milestone in the celebration of a popular holiday conditioned both by the habitat that welcomes it, the "patios houses" located in the historic center of Córdoba, as for the way of life of those who generate this celebration, the inhabitants of these patio houses. A way of life-habitus- closely linked, in turn, to said habitat.

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In this work we will focus on the Patios Festival and its sustainability from the point of view of the Offer, surveying the managers and owners thereof.

### **An analysis of the links between socioeconomics, accessibility and travel patterns in Sweden**

**Ph.d. Krister Sandberg<sup>1</sup>**, Ph.d. Backa Fredrik Brandt<sup>1</sup>, M.Sc. Eva Lindborg<sup>1</sup>, Ph.Lic. Mats Wiklund<sup>1</sup>

<sup>1</sup>*Transport Analysis, Stockholm, Sweden*

G16-O1 Transport, Land Use and Accessibility  
IUT\_Room 110, August 28, 2019, 4:30 PM - 6:00 PM

In this study we link accessibility, at the public and individual level, to travel patterns. We find that a person's travel pattern and travel options are affected by accessibility shaped by transport system configuration, land use, time restrictions, and individual circumstances. The findings confirm the perception that Sweden's regions and various societal groups exhibit both similarities and major differences in accessibility that affect the existing opportunities in terms of linking residences, workplaces, leisure activities, etc. Differences in travel patterns are found in chosen transport modes, travel times, trip lengths, and trip purposes. For instance, high car and driving licence possession levels correlate with more trips by car, while a strong public transport offering correlates with more trips by public transport. Considering multiple factors simultaneously in a composite accessibility index, we still see a weak but positive link, i.e., better travel opportunities covary with more trips made.

However, the fact that some travel less than others does not necessarily mean that the conditions and assumptions concerning them are less favourable. Low mobility may be a matter of choice for a given group, and perhaps even sought for depending on attitudes. For other groups, low mobility may be less a matter of choice, and can impede their independence and participation in society. This is important to consider from the perspective of transport policy objectives, as it also affects the options available to various groups to adapt to changing circumstances. Consequently, degrees of mobility cannot be considered in isolation, whether the discussion concerns sustainability or fairness.

The study is based on a population classification in six ways. Three is based on individual data – age and gender, income, and functional impairment, and three based on geography – 1) Swedish Agency for Regional and Economic Growth's municipality group classification 2) the Swedish National Council for Crime Prevention's classification of socially disadvantaged urban areas, and 3) a geographical classification tied specifically to socioeconomic characteristics, where the areas are classified based on a composite metric of demography, finances, vehicle and population density, interests, and consumption. The last two classifications use information at a high level of resolution (10 000 areas). All together 37 groups are used.



Data from the Swedish National Travel Survey 2011–2016, complete public transport timetable data, official vehicle and drivers licence statistics at the household and individual level, and logsums calculated from SAMPERS (Swedish transport demand forecast model) are used in the analysis.

### **Analyzing the spatial patterns of the urban development in post-socialist cities from Eastern and Central Europe**

**PhD Student Alexandra Sandu<sup>1,2</sup>**, Prof. Lydia Coudroy de Lille<sup>1</sup>, Prof. Octavian Groza<sup>2</sup>

<sup>1</sup>*Université de Lyon, CNRS; Université Lumière Lyon 2, EVS, UMR5600, Lyon, France*, <sup>2</sup>*Alexandru Ioan Cuza University from Iasi, Faculty of Geography and Geology – Department of Geography, Iasi, Romania*

G04-O2 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 11:00 AM - 1:00 PM

The fall of the communism represents an important element in the history and geography of Central and Eastern Europe. It is clear that its impact was not only on the institutional, political and socio-economic processes, but also on the urban morphology and functionality. Nevertheless, the most often, in the literature, these particularities are explained through the prism of the first processes mentioned above, while the quantification of the spatial processes is quasi-absent. Therefore, this research aims to outline some of the morphological and functional spatial patterns that characterize the post-socialist city from countries of Central and Eastern Europe that are members of the European Union. Using a quantitative methodology, that combines both statistical and GIS methods, the study analyses 132 cities, chosen based on demographic criteria, but also in regard to their position in the national hierarchy. Consequently, the main questions of the study focus on identifying what particularities (if any) can be identified for the morphological and functional pattern of the cities from Central and Eastern Europe? What role (if any) plays the socialist heritage in the spatial patterns of the urban development of post-socialist cities from Eastern and Central Europe? And finally, are there similarities or dissimilarities in regard to the western European city?.

### **An assessment of poverty determinants in U.S. census tracts, 1970-2010**

Mr Carlos Gayán-Navarro<sup>1</sup>, **Mr Marcos Sanso-Navarro<sup>1</sup>**, Mr Fernando Sanz-Gracia

<sup>1</sup>*Universidad De Zaragoza, Zaragoza, Spain*

G06-O1 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 11:00 AM - 1:00 PM

This paper carries out an empirical analysis of the variables that explain poverty rates in U.S. census tracts. To do so, a geographically consistent panel data set covering 366 MSAs during 1970-2010 has been used. Our study begins by testing for the stationarity of poverty rates and establishing the estimation strategy. We will show the differences between the poverty determinants in (i) the suburbs and the city center, (ii) big, medium and small MSAs, and (iii) rich and poor tracts. The analysis of the socio-economic factors that are significantly related to poverty will also allow us to establish the role played by the filtering process in urban housing markets. Even though we obtain evidence that poverty rates can be considered stationary processes, estimation results suggest that they display some degree of persistence and spatial dependence. The variables that have a positive and significant relationship with poverty are the percentages of racial minorities, female-headed families, renter-occupied housing and old dwellings. On the contrary, educational attainment, female employment rate and the percentages of population under 18 and over 60 are negatively associated with poverty. We have not found a significant influence of the employment rate on poverty. Nevertheless, it can be stated that this phenomenon has a sectoral component. These results are

framed within the debate about the design of local development strategies, establishing under which circumstances place-based policies should prevail over person-centred ones, and vice versa. In a nutshell, our findings lead us to conclude that these two perspectives are complementary rather than substitutes.

### **Transport and population density in the urban area of the city of Salvador**

Ms Daniel Carvalho<sup>1</sup>, Dr. Gervasio Santos<sup>1</sup>

<sup>1</sup>*Federal University Of Bahia, Salvador, Brazil*

G16-O4 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 4:30 PM - 6:00 PM

The objective of the paper is to analyze the effect of accessibility to employment on population location patterns in the city of Salvador, Brazil, considering different urban transportation facilities. In particular, the paper also investigates the spatial distribution of whites and blacks in this city, based on the relationship between densities and accessibility, in a polycentric spatial configuration of location of employment centers. The research is situated in the empirical context of the urban economy and the economics of accessibility. The identification of the causal effect between population density and accessibility will be carried using a cross-section database by subareas of city traffic, controlling for historical, geographical and location components, as well as the respective application of the instrumental variable estimator. Different methodologies were used to calculate an accessibility indicator, a population density gradient and the generation of an instrumental hydrographic variable based on the location of the river bed of the city of Salvador to solve problems of simultaneity between accessibility and density population. The results showed that the factors of access to employment opportunities had a positive and statistically significant effect on the population density. This applies to blacks and whites, regardless of the technology used, car or bus.

### **Urbanization and climate in the northeast region of Brazil**

Ms Lorena Fonseca<sup>2</sup>, Dr. Gervasio Santos<sup>1</sup>, Dr. Vinícius Mendes<sup>1</sup>

<sup>1</sup>*Federal University Of Bahia, Salvador, Brazil*, <sup>2</sup>*Federal University of Pernambuco, Recife, Brasil*

G04-O8 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 9:00 AM - 10:30 AM

The objective of the paper is to estimate the effect of climatic variations on urbanization in the Brazilian Northeast region. The urbanization process in Brazil has been accelerating since the beginning of the second half of the 20th century. The country has about 85% of the population living in urban areas. In this context, the process of urbanization in the Northeast region needs to be better analyzed, based on the respective regional heterogeneities. The Northeast region is marked by the popular sense that climate vulnerability is responsible for its precarious development, and attributing to the semiarid the main locus of the region's social backwardness. The international empirical literature shows that climatic variables and extreme climatic events exert important influences on a variety of economic results with different consequences. These results are conditioned by socioeconomic, political and institutional features in each place. Urban areas work as a way for people to escape from adverse climatic effects as agricultural productivity was compromised. In municipalities market by presence of industrial units urban areas would be able to offer employment alternatives. This hypothesis is consistent considering that the industrial areas have always been attractive in terms of employment opportunities and drivers of urbanization. Thus, an empirical study was conducted to test econometrically whether the precipitation climatic variable has effects on

urbanization in the Northeast region and the semi-arid region of Brazil, in particular. In addition, the paper also verified whether the expressive presence of industrial activity can mitigate the effects of climatic conditions, through intra-municipal migration. The results indicated that in municipalities that have an expressive industrial presence, a reduction of precipitation increases urbanization when compared to other municipalities. However, no statistically significant results were found in the estimates for the semi-arid region.

### **The implementation of 2014-2020 Cohesion Policy in Greece: You can't teach an old dog new tricks.**

Dr. Ioannis Saratsis<sup>1</sup>

<sup>1</sup>*University of Thessaly, Volos, GREECE*

G06-O8 Regional and Urban Policy and Governance  
IUT\_Room 306, August 30, 2019, 2:00 PM - 4:00 PM

Since the early beginning of European Cohesion Policy in the mid 80's under the scheme of Mediterranean Integrated Projects, many changes occurred in the relevant Regulations. The most recent changes provide a European wide Strategic framework for the development of the Union and specific country guidelines. Also in the current programming period new Territorial Instruments are available as an effort to implement the so called "Place Based" approach. Moreover, a comprehensive planning system emerged for the efficient implementation of the resources allocated to the Union's Member States.

In Greece the first implementation efforts were characterized by the lack of comprehensive development strategies and the allocation of the funds mostly in basic infrastructure projects (like transport infrastructure). It is commonly accepted that these projects were necessary for Greek Regions and Cities, but they didn't provide a stable growth path. In the recent (2014-2020) programming period and after more than 30 years of CP funding, most of the available resources still go to basic infrastructure (more than 35%). Another problem is that the amount that is foreseen for Territorial Instruments like CLLD, ITI is limited to the minimum acceptable by the Regulations. These Territorial Instruments should be used in order to respond to the complex development problems of Cities and Regions.

Obviously, systematic development planning and changes in the administrative capacity of National, Regional and Local Authorities in the country that are evident in the last 20 years don't have the expected results. To a large extent this is due to dominant role of the Central Government and the absence of innovative thinking in Local Authorities and stakeholders. These reasons are briefly analyzed in the paper and some policy directions are given for the next programming period.

### **Starting From Scratch? A New Approach to Subnational Public Finance (with Application to the UK)**

Dr. Willem Sas<sup>1</sup>, Prof. David Bell<sup>1</sup>

<sup>1</sup>*University of Stirling, Stirling, United Kingdom*

S50-S1 Fiscal decentralisation and multi-level governance  
IUT\_Room 408, August 29, 2019, 2:00 PM - 4:00 PM

The ways in which countries have organised the financing of public goods and services provided by lower-level governments, are highly complex. They are often regarded as unfair, opaque or ineffective, and tend to lack legitimacy as a result. This paper therefore explores a set of transparent and intuitive guidelines to design a new fiscal framework for regional public finance. It builds these from a set of principles rather than an ad hoc process dictated by political expediency. It also recognises that any fiscal arrangement will be subject to a participation constraint. Thus it accounts for the possibility that one or more regions may leave

the federation, given sufficient popular support. To offset this possibility, and within certain bounds, our framework allows subnational jurisdictions to unilaterally decide how much tax autonomy and fiscal responsibility to adopt. Our paper therefore offers a fresh perspective on subnational public finance.

## **Sustainable mobility and universities in Italy: a critical assessment of results of the 2016 First Nationwide Survey**

Prof. Andrea Scagni<sup>1</sup>

<sup>1</sup>*Università Di Torino, Torino, Italy*

S16-S2 Students, University and the City: Location Choice and Mobility Behaviour  
IUT\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

The proposed analysis explicitly uses the sustainability concept as the key to read the information made available by the First Italian National Survey of University Mobility conducted in 2016-17 in 40 higher education institutions around the country. The survey, which was promoted by the universities themselves and coordinated by the Joint Group of university mobility managers (by Italian law, all large public institutions must have a mobility manager), covered the most part of the tertiary education system in terms of number of students, involving universities in Rome, Milan, Turin, Florence, Bologna, Naples, Bari among others. In all, some 70,000 responses were collected; the turnout rate was quite heterogeneous and results from each university were thus weighted to obtain reasonable overall estimates. The questionnaire was fairly complex and rich in detail regarding actual modal choices, journey time and distances, possible seasonal differences in behaviour, as well as subjective perceptions about problems and opportunities of each transport mode when used in the specific context of home-to-university commuting. The target population was the whole academic community, including students, staff and faculty.

Approaching the issue from the sustainability point of view is reasonable both substantively - as it is considered a crucial factor to mobility issues - as well as operationally, since it allows to simplify the wide variety of choices and behaviours. With direct reference to the multi-modality issues previously discussed, journeys options will be classified in three ordered categories:

- fully sustainable: all journeys made through active mobility, public transport or sharing in a single or multi-modal solution;
- partially sustainable: journeys that include a private car/motorcycle stretch, which is combined with other modes in a multi-modal solution;
- fully unsustainable: journeys made with private motorized vehicles only.

## **Spatial clustering of indicators and regional development trajectories**

Dr. Vanessa Kuentz<sup>1</sup>, Dr. Yves Schaeffer<sup>2</sup>, Dr. Tina Rambonilaza<sup>1</sup>

<sup>1</sup>*Irstea, UR ETBX, Bordeaux, France*, <sup>2</sup>*Univ. Grenoble Alpes, Irstea, LESSEM, Grenoble, France*

G10-O3 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 11:00 AM - 1:00 PM

“What we measure affects what we do. If we measure the wrong thing, we will do the wrong thing.” This introductory sentence from the recent OECD report on country-level well-being metrics (Stiglitz et al., 2018) is equally relevant to the analysis of regional inequalities and regional development policies. An overarching recommendation to monitor sustainable development policies is to rely on a set of relevant “Quality of life” and “Environmental” indicators rather than on a synthetic indicator (e.g. GDP) and to pay attention to their temporal evolution. In this respect, for the study of regional development, a multidimensional clustering approach has sometimes been used to identify “regional development profiles” and thus give meaning to

this wealth of indicators. However, this clustering approach should be further improved to measure the “right (regional) thing”. The aim of this article is to make proposals in that way. There is already a method for the clustering of a set of numerical and categorical indicators (see the R package ClustOfVar) and we believe it should be applied before the clustering of regions in order to eliminate informational redundancies in the indicator space. But a gap that still needs to be filled is the lack of treatment of spatial associations in the step of grouping indicators (i.e., the fact that, for an indicator, the values in a spatial unit and in neighboring spatial units may be related). This must be taken into account insofar regional development has a spatial dimension that should be understood to target regional policies better. Our first objective is therefore to include this spatial dimension in ClustOfVar using the Vector Quantization technique. A second gap to be filled is the way in which regional trajectories are analyzed, usually by simply comparing regional typologies established at different times. An alternative approach would be to focus on indicators’ dynamics and implement a clustering of variables followed by a clustering of regions based on temporal evolutions. This paper explores these methodological avenues to advance the analysis of regional development.

### **A life-course perspective on preferences for dense neighborhoods**

Yves Schaeffer<sup>1</sup>

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G17-O2 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 4:30 PM - 6:00 PM

Compact development is promoted by many cities on the grounds of enhancing urban sustainability and livability (Haarhoff et al., 2016). It is expected to reduce sprawl, increase the efficiency of urban service delivery and improve social interactions and public health. However all these benefits are not guaranteed: Liao et al. (2015) argued that the success of compact development plans will ultimately depend on public demand for high-density developments and that scholars must understand residents’ preferences towards them. We can add to this that success will also depend on maintaining this demand in the long term. Planners concerned with investments in compact development should look beyond current generations and speculate on the preferences and aspirations of futures generations.

The study of intergenerational transmission of residential preferences may help to establish such conjectures. The main question asked here is whether people who grow up in dense neighborhoods are more likely to live in dense neighborhoods later in life. If so, we would have reason to believe that a compact city model that attracts current families is likely to remain attractive to future families. To date, this issue has been addressed by very few studies. While  $\text{ÆRØ}$  (2006) found that people tend to move to residential districts that are similar to where they grew up, Chen and Lin (2011) concluded that those who had lived in high-density locations during their growth periods pursued lower density locations later in life. These contradictory studies suffer a similar limit: they are cross-sectional retrospective surveys based on relatively small samples affected by selection bias.

In this paper, panel econometric models are estimated on large subsamples retrieved from a longitudinal database, l’Echantillon Démographique Permanent, built by the French National Institute of Statistical and Economic Studies (Insee). This database provides demographics and residential locations for a national sample of individuals surveyed at several census dates between 1968 and 2015. Cohorts of individuals can be observed as children in a census and as autonomous adults in subsequent censuses. We conclude that experiencing a higher density as a child increases the likelihood of selecting a high density neighborhood later in life. In addition, the most recent dynamic panel data methods (Moral-Bonito et al., 2018) are applied and show path dependencies insofar as the density experienced by an adult at a given period also affects the density selected by this adult at the following period.

## **Income Inequality and Hierarchical Product Differentiation: An Analysis of the Austrian Restaurant Market**

Ms Nora Schindler<sup>1</sup>, Ph.D. Biliana Yontcheva<sup>1</sup>, Dr. Dieter Pennerstorfer<sup>2</sup>, Prof. Dr. Christoph Weiss<sup>1</sup>

<sup>1</sup>WU Vienna, Vienna, Austria, <sup>2</sup>JKU Linz, Linz, Austria

G12-YS1 Location of Economic Activity (EPAINOS)  
IUT\_Room 202, August 29, 2019, 11:00 AM - 1:00 PM

Many Western economies have experienced significant changes in the distribution of personal incomes over the last decades. The rising income inequality in the U.S. and in some European countries has attracted public, political and scholarly attention. A large empirical and theoretical literature relates income distribution and inequality to a number of social and economic outcomes (such as economic growth, international trade, well-being, health, criminality, education, to mention a few dimensions only). This project aims at studying a type of interaction between income inequality and market outcomes that has not yet been explored extensively: the effects of different degrees of income inequality on firms' behaviour in imperfectly competitive product markets.

The analysis is motivated by the following simple argument. Since rich and poor consumers buy different consumer goods in different amounts, the initial degree of income inequality influences the size of market demand and/or its elasticity and hence the intensity of competition, entry and product differentiation strategies. Income inequality entails heterogeneity in consumer preferences, and product differentiation is the market response to this heterogeneity.

The empirical analysis is carried out for an important non-tradeable consumption amenity: restaurants. The market for restaurants is particularly well-suited to the aims of the proposed project.

Firstly, different dimensions of product differentiation are relevant in this market and are significant in the consumers' decision to eat out in a restaurant: the quality of restaurants (measured by consumer ratings and/or expert reviews), the variety of restaurants (i.e. different cuisines), as well as the geographical location of restaurants. Within this paper we will focus our empirical analysis on the horizontal product differentiation. Secondly, the different dimensions of product differentiation in this market are easily measured. Conveniently, there exists a wealth of information about restaurants on the Internet, including quality indicators, cuisine types as well as precise address information which allows accurate geographic matching of restaurants to demographic data. Thirdly, consumer heterogeneity is important in this market, since consumer demand for specific cuisines will differ between rich and poor consumers. The availability of detailed information on the spatial distribution of population, income and income inequality allows an empirical identification of the impact of income inequality on consumer demand and firm conduct (product differentiation). And finally, the restaurant market represents a good case for investigating the hierarchical structure of demand: we expect to find a relationship between the number of varieties and the composition of those varieties.

## **Sweet Trade and Old Habits: Privileges and Sugar Trade to Baltic Towns and the Effects of Political Uncertainty, 1634-1857**

Prof. Torben Dall Schmidt<sup>1</sup>

<sup>1</sup>University of Southern Denmark, Sønderborg, Denmark

S25-S2 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 2:00 PM - 4:00 PM

A historically recent theory on international trade points to the importance of discrimination in trade agreements, e.g. Viner (1950) or Bhagwati (1996). Discriminatory agreements on market access for specific countries constitute preferential trade agreements (PTA's). Such behavior is an "old habit" dating back in time, as exemplified by the discriminatory nature of the Sound Toll levied on cargoes passing the strait of "Øresund" from 1429 to 1857 by the Danish King. Following Degn (2010), trade from harbor towns in France, Scotland and England had no privileges, while trade from some German and Dutch towns were given privileges. Such discrimination in market access is analyzed focusing on "sweet trade" in sugar from 15 European trading hubs and colonial towns in the "New World" outside the Baltic Sea area to 9 Baltic Sea towns from 1634 to 1857. Some of these towns were in countries given preference and others not. This is furthermore interestingly a period of large shocks and political uncertainty following the initiation of the French Revolution Wars. Based on a sample 7672 cargoes of sugar and following a gravity equation approach, the paper estimates the long-run effects of preferential treatment on trade and trade margins. It furthermore tests whether shocks and political uncertainty in terms of the initiation of the French Revolutionary Wars presents first-order effects of preferential treatment compared to the long-run effects. Results indicate that it is indeed the mix of preferential treatment and large shocks the affects trade patterns rather than long-run effects of preferential treatment in general.

### **Urban Resurgence as a Consumer City: The Case of Weimar**

Prof. Dr. Alina Schoenberg<sup>1</sup>, Prof. Dr. Florian Bartholomae, Prof. Dr. Chang Woon Nam

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G17-R1 Population, Migration and Mobility Behaviour  
IUT\_Room 110, August 28, 2019, 11:00 AM - 1:00 PM

Weimar achieved urban recovery as a 'consumer city' with sub-brandings like a population magnet with a high living-quality, a cultural city with touristic attractions, and a university city. Its intensive cultural promotion policies combined with urban regeneration programs have contributed to the recent demographic and economic growth. This study demonstrates this success and investigates its sectoral weaknesses compared to other German cities. Weimar needs an optimal mixture of consumption- and production-oriented development strategies to rectify the current structural imbalances and better control those negative impacts caused by a rapidly ageing population. Besides ample presence and intact connectivity of high-tech industries and producer services within a city which enhance R&D, innovation and productivity, Weimar should more seriously consider, when designing future development policy, that both urban growth approaches are inter-related: agglomeration generates higher income for the creative class, whereas high urban amenities attract young creative entrepreneurs selecting locations for start-ups.

### **The VALOR (VALue Of Road Safety) project: developing reliable estimates of road crash costs**

Ms Annelies Schoeters<sup>1</sup>, Mr Stijn Daniels<sup>1</sup>, Mr Dominique Mignot<sup>2</sup>, Mr Laurent Carnis<sup>2</sup>, Mr Maxime Large<sup>2</sup>, Mr Raschid Urmeew<sup>3</sup>

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S59-S1 Road Safety Economics for Resilient Countries and Regions  
IUT\_Room 108, August 29, 2019, 2:00 PM - 4:00 PM

See extended abstract online.

## **Demographic Change and Female Labor Supply**

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G05-YS2 Regional and Urban Labour Markets  
IUT\_Room 306, August 29, 2019, 11:00 AM - 1:00 PM

Demographic change can be regarded as one of the most pressing problems of developed countries. As a consequence, Germany is challenged by population aging, being one of the oldest countries worldwide. This trend does not only cause increased pressure on social security systems, but also affects labor markets by means of a persistently aging and retiring workforce. Evaluating the limited number of possible counteracting measures, an increasing labor supply of underrepresented groups is among the most promising approaches. In light of this, our paper deals with the question whether or not females increase their labor supply in an aging society using small-scale regional data. Since investigations of the exact mechanisms behind this relationship are relatively scarce, we try to evaluate whether there are heterogeneous effects for different skill levels. Our first results show that the old-age dependency ratio indeed has a positive effect on female labor force participation, indicating that women might serve as a general factor attenuating labor market effects of an aging society. Women at the lower end of the skill-distribution might particularly fill in vacancies or take on jobs emerging in the health and care sector.

## **Tourists mobilities and the relevance of data from mobile phone network**

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S04-S1 The digital transformation of tourism in the city  
IUT\_Room 104, August 28, 2019, 11:00 AM - 1:00 PM

While almost all tourists are equipped with mobile phones (94% of French according to the Digital Barometer, 2018), operators offer relevant data analysis services to address tourism research issues or more usually for smart cities. The purpose of this communication is to verify the relevance of mobile data. To carry out our approach, we implemented a survey system based on cross-referencing the results of several methodological tools and / or sources: the counting of the ticketing, a survey by questionnaire and the analysis of data from mobile telephony. This survey work was conducted on the Roland-Garros tournament in 2017 and 2018. The results first reveal the possibilities of each tool to provide data of different types, indicating their accuracy and technical constraints. In a second step, we will compare the comparable results to establish the relevance of each source and the exploitation prospects for research purposes.

The conclusions of this study will allow us to pronounce on the relevance of data from the mobile phone in the context of the case study that we conducted to analyze the mobilities of the spectators of the Roland-Garros tournament.

## **How increasing commuting influences Labour Market Regions**

Ms Barbara Schwengler<sup>1</sup>, Dr. Per Kropp<sup>2</sup>

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G05-O5 Regional and Urban Labour Markets  
IUT\_Room 210, August 29, 2019, 4:30 PM - 6:00 PM



In recent years, several studies in various countries have addressed the delineation of functional regions based on commuting flows. Most of these studies have focused on one method and have used data from one year. Due to increasing number of commuters and distances of home-to-work travel in recent decades, this study extends the research on how increased commuting influences the shape and size of functional labour market regions in Germany over time.

Applying a three-step method, functional labour market regions are delineated by using commuting data for all employed persons in Germany on municipality level from 1993 to 2013 and the results are aggregated into seven groups of three years. By comparing the results of these different delineations with each other, regions are classified into three categories as stable “core regions”, “related regions” and “over-lapping regions”.

The main finding is that regions surrounding important labour market centres form stable labour markets. Over time, most employees belong to the same labour market region or parts of it. However, increasing mobility has reduced the share of the regional labour force living and working within labour market regions. As a result, both the number of labour market regions and the quality of the delineations have decreased over time. Applying the three categories “core regions”, “related regions” and “overlapping regions” and the three-step method, this study can assess the quality and robustness of this method and analyse stability over time.

### **KIBS as Fosters for Innovativeness in Manufacturing Industries: The Case of Latin-America**

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S10-S1 Territorial Servitization  
IUT\_Room 402, August 28, 2019, 2:00 PM - 4:00 PM

Previous analysis of the relationship between KIBS and innovation outcomes have shown how KIBS contribute to economic development in industrialized countries, where the competitiveness of manufacturing industries depends more and more on the specific knowledge provided by highly specialized suppliers. In this way, KIBS has been gradually perceived as a strategic sector in the context of the knowledge-based economy. According to territorial servitization postulates KIBS are also fundamental for the development of the manufacturing fabric. In this vein, the purpose of this research is analyzing the relationship between innovativeness and location decisions in manufacturing decisions, in order to understand whether the presence of KIBS can be seen as a magnet for manufacturing development. Drawing on the World Bank Enterprise Survey 2017 for Latin-American countries, authors analyze 3,029 manufacturing firms. Findings indicate that manufacturing firms' location decision based on KIBS proximity is a critical determinant of innovativeness. Preliminary results indicate that manufacturing firms' location decision based on KIBS proximity is a critical determinant of innovativeness. This relationship is considerably stronger in Central American countries, where according to our data there is KIBS scarcity. Whilst this result requires further discussion, we postulate that the decision of KIBS co-location become more important when the technological and service knowledge is more scarce and hence valuable.

### **"Demographic Tailwind" from East Germany? The anew apprenticeship opportunities of foreign youth in West Germany**

Mr Holger Seibert<sup>1</sup>

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The German system of vocational education and training (VET) is very much firm based. Training takes place in private companies and is accompanied by vocational education in public vocational schools. Companies offer training positions according to their economic well-being as well as to future requirements in skilled manpower.

For many years the German VET market was not able to provide school leavers with the necessary number of VET vacancies - especially in East Germany and especially for foreign youth in West Germany. The problems in East Germany were rather economy driven, because smaller East German companies have always had lower resources to stem the necessary supply. In the most difficult years there have been almost twice as many applicants as open VET positions. Consequently, sufficient numbers of East German School leavers successfully applied for VET positions in West. In West Germany it was rather problematic for marginalized groups to find VET positions, such as school leavers with low achievements or foreign youth. As mobile VET applicants from East Germany usually had better school degrees there used to be much more competition for these marginalized groups.

Our paper analyzes if and to what extent the growing opportunities for foreign youth in West Germany are a result of the demographic changes in East Germany and the subsequent withdrawal of East German youth from the West German VET market. For this purpose, we use employment registry data from the Federal Employment Agency as well as population data from the Federal Statistical Office. Detailed analyzes prevail in how far apprentices with foreign nationality are to be found in VET positions that used to be occupied by applicants from East Germany in the past. Thereby, regional analyzes on NUTS-3-levels play an important role, as foreign population in Germany is concentrated in urban districts. Furthermore an occupational differentiation is necessary as foreign youth clusters in certain apprenticeship occupations. Thus, we compare regional occupation clusters where competition between East German and foreign youth took place.

At the same time it is vital to disentangle to what extent the improving opportunities for foreign youth are caused by the improved economic conditions in West Germany alone. Therefore, we consider a longer time period beginning already in 1999, when East German school leaver cohorts used to be much bigger and the East German VET market was rather consistently fierce.

### **An impact assessment of measures for gender rebalancing in local elective assemblies**

Dr. Ugo Finardi<sup>1</sup>, Mrs Elena Ragazzi<sup>1</sup>, Dr. Lisa Sella<sup>1</sup>

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The general objective of the paper is to present the results of an evaluation of the effects produced by the regulatory measures introduced in recent years for the purposes of gender rebalancing in the elective offices.

Women still encounter huge difficulties in being included in political decision-making. Even when they have the chance of participating to political competition as candidates, this is not a guarantee that they are elected and assigned to important political positions.

Many countries have introduced rules and mechanisms to accelerate the rebalancing process. The general feeling is that their effectiveness may vary a lot, because they need to be well designed and effectively implemented to achieve good results, so asking an important evaluation question.

Different types of mechanisms may be designed to ensure gender balance in politics.

The main options adopted are: Gender shares in the lists of candidates; Double/triple gender preference; Alternate list. The three mechanisms can be paired, and their effectiveness depends also on their application with different voting regulation.

We start from a statistical recognition of gender shares among candidates and elected representatives for all institutions in Italy. The impact evaluation is limited to the case of municipalities. In the other cases, the lack of a credible counterfactual forces us to limit to statistical analysis of observed change. In the depicted situation, the voting regulation for the administrative elections is a perfect context where to evaluate the effectiveness of gender rebalancing mechanisms.

The paper presents the results of an evaluation based on RDD approach around the two thresholds present in the law (5.000 and 15.000 inhabitants). Moreover, the determinants of the impact are analysed, based on variables that affect women participation in electoral competition.

### **Analysis of fire patterns according to land use in Korea local government**

Ms. Minsong Seo<sup>1</sup>, Prof. Hwan Hee Yoo<sup>1</sup>

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G24-O2 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 28, 2019, 2:00 PM - 4:00 PM

Fire is one of the most frequent disasters in Korean cities, as well as traffic accidents, and causes tremendous damage to property and loss of life. In this study, fire occurrence data were collected for approximately 10 years, between 2007 and 2017, from the city of Jinju, which is a medium and small city located in the southern part of Korea. We analyzed the cause of fire according to land use and the correlation of the occurrence of fire through the analysis of temporal and spatial patterns. Time series analysis was carried out to predict future fire occurrence.

The following conclusions were obtained, first, as a result of the analysis of the occurrence of fires based on land use, fire in Jinju city were located mostly in the center and in the residential area of the city. Between 2007 and 2012, fires occurred in the central commercial area and in the industrial area that was the old center of the city. On the other hand, from 2013 to 2017, the fires are grouped around the existing residential areas and the recent ones built by residential development projects. Second, to analyze to predict the fire occurrence trend of Jinju city, time series analysis was performed by seasonal ARIMA model based on 10 years data. Through this, it was possible to predict the trend of fire occurrence for the next two years. The Augmented Dickey-Fuller Test (ADF Test) was used to verify the stability of the time series data, and the Mean Absolute Percentage Error (MAPE) analysis was applied to predict of the time series data.

### **Quadruple helix readiness and smart specialization in less developed regions. The CEE case**

Dr. Cristina Serbanica<sup>1</sup>, Dr. Iuliana Talmaciu<sup>1</sup>

<sup>1</sup>*Constantin Brancoveanu University, Pitesti, Romania*

S54-S1 Evaluating Smart Specialisation: early evidence on policy implementation and economic transformation, IUT\_Room 304, August 29, 2019, 9:00 AM - 10:30 AM

See extended abstract online.

## **EU 2020 Targets: Revisiting European linkages and its implications for a modified inequality index**

**Dr. Deniz Sevinc**<sup>1</sup>

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G15-O1 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 2:00 PM - 4:00 PM

Evidence from European countries shows a significant and widespread increase in income inequality over the past ten years. This paper's distinctive feature is a shift towards a novel definition of a measure of inequality that widens the evaluation by combining socially inclusive aspects with wellbeing. Another aspect is the proposed methodology; European interlinkages are redefined to cover not only the trade channel, but also financial exchanges, geographical proximities and bilateral migration flows, in an attempt to capture fully the depth and complexity of cross-country dynamics. The redefined linkages supplement possible interdependencies in Europe by adding nuances and meanings that are as yet little explored. Findings relate to the EU 2020 headline targets by providing further evidence of how heterogeneous the magnitude of poverty responses to such inequality developments is across European economies, they suggest that poverty reduction may be significantly improved through distributional policies. Evidence has been provided that intra-EU inequalities have a pro-cyclical character, where the transmission of a change in Eurozone economic performances into the extent of income inequality is statistically significant. In terms of the dynamics between monetary policy and income distribution, results suggest that monetary shocks are transmitted relatively rapidly, and often get amplified as they travel from the Leading European countries to the Eurozone.

## **Merging Automated Fare Collection and Automatic Vehicle Location Data to Forecast Short-term Passenger Demand**

**Prof. Seyedehsan Seyedabrishami**<sup>1</sup>, Dr. Ali Mohades Deylami<sup>2</sup>, Vajih Amini<sup>1</sup>, Maryam Iranmanesh<sup>1</sup>

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S63-S1 Public transportation and big data: data processing and valuation  
MILC\_Room 310, August 29, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

## **Common goods and new local development process. The relevance of Community-Based Enterprises in Italy**

**Dr. Jacopo Sforzi**<sup>1</sup>

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S20-S1 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

## **Public Preferences for Redistribution and Voting Behavior: Comparative Study**

**Dr. Chen Sharony<sup>1</sup>**, Prof. Shlomo Mizrahi<sup>2</sup>, Prof. Miki Malul<sup>1</sup>

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G22-O1 Institutions

IUT\_Room 303, August 29, 2019, 2:00 PM - 4:00 PM

What are the factors affecting the gap between preferences for income redistribution and policy? Public preferences and policy are not in agreement in this field in some countries. This study compares preferences for redistribution and voting in OECD countries.

Previous studies dealt with identity politics, by which people base their political position on the interests of the social group with which they identify. However, few studies looked at the level of consistency between public preferences and election results.

This is a comparative study that used panel data from 24 OECD countries and compared the distribution of preferences for income redistribution and the distribution of election results between 1998 and 2013. Public preferences were measured by value surveys (ESS, ISSP). Election results were coded by "socio-economic policy position left-right scale". The study had 2 phases: 1. measuring the gap between public preference and election results using chi-square test for comparing both distributions. We used sum of squares to assess the gap level; 2. Panel regressions assessing the factors affecting this gap. The proposed factors are: social capital, ethnic heterogeneity, and government effectiveness and corruption.

The main finding is that none of the countries in any of the years had significant results. That is, the distributions of redistribution preferences and voting were always different. In addition, the countries that had a larger gap between preferences and voting were: Greece, Ireland, France, Portugal, and Japan. The countries that had a small gap were: Denmark, Sweden, Netherlands, Norway, and New Zealand. In the second step, the only factor that had significant effect on the gap was government effectiveness and corruption.

The main finding is compatible with identity politics theories and with previous studies showing incongruence between preferences and voting behavior. Most of the countries that had a large gap belong to the Mediterranean welfare model. This model is characterized by over-use of the welfare system and by Clientelism, which means use of the welfare system by politicians for political means. In this situation it is not surprising to find a gap between redistribution preferences and voting behavior. This is also in line with the finding that the main factor affecting the gap is government effectiveness and corruption. If the public perceives the welfare system as corrupt, or as a system that serves only certain (political) groups, people can become indifferent and so it is less likely that they would vote according to their preference.

## **The Impact of Regional Science on Urban and Regional Planning**

**Prof. Daniel Shefer<sup>1</sup>**

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S01-S1 Regional Science Footprints of Walter Isard

IUT\_Room Amphi 10, August 29, 2019, 2:00 PM - 4:00 PM

This paper briefly traces the impact of regional science on urban and regional planning in the past sixty years. Significant milestones in the transformation of urban and regional planning activity, from primarily physical land use planning to a multi-dimensional activity involving sophisticated analytical tools are presented. This paradigm change reviled itself by replacing macro analysis with microanalysis, stressing the importance of inter-connectivity between economic agents and human behavior (agglomeration and clustering). The multi-dimensional analyses and evaluation of socio-economic and environmental issues impacting welfare of people revealed itself in the arrangement and control of land uses in space. In order to

accommodate a growing number of people who choose to settle in urban regions, it is necessary to provide them with adequate infrastructure – housing, employment, transportation (accessibility), health and educational facilities and more. At the same time in order to maintain a high quality of life, it is necessary to protect the environment and reduce congestion and pollution in urban areas. Regional science tools and techniques are *sin-qua-non* in accomplishing these urban and regional planning objectives.

## **Evaluating the Economic Impacts of Environmentally Friendly Vehicles on the Regional Economy in Japan**

**Dr. Hiroyuki Shibusawa**<sup>1</sup>

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G24-O5 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 2:00 PM - 4:00 PM

Environmental friendly vehicles have economic and environmental benefits. In the past decade, the automotive industry has experienced a technical innovation. As part of the country's economic recovery policies, Japan has subsidized vehicles having a significant positive impact on the environment. Though conventional pet-rol cars are included in the models entitled to subsidy, hybrid vehicles are the main focus of this policy. Hybrid vehicles are a type of next-generation vehicles, which also include electric vehicles, bio-ethanol vehicles, and fuel-cell vehicles. Factors underlying the advent of next-generation vehicles include the prevention of global warming accompanied by carbon oxide reduction as well as energy saving measures. On the one hand, next-generation vehicles have been used as an eco-nomic policy tool to encourage recovery following the worldwide recession caused by the collapse of Lehman Brothers; however, even after such revival measures, new policies are expected to be developed to promote these vehicles in response to inherent environmental issues.

This paper focuses on the economic effects of the shift in the production technology used for next-generation vehicles. Specifically, we use input–output analy-sis to derive the production inducement coefficients for conventional vehicles and next-generation vehicles. Furthermore, we also identify the impact of increased production in hybrid and electric vehicles at both the national and regional levels. Shibusawa and Sugawara (2011, 2013) conducted effect analyses on the produc-tion of next-generation vehicles using the input–output tables for Japan. Shi-busawa and Xu (2013) compared the effects of the production of next–generation vehicles in Japan and China. This paper analyzes the impact of the shift in production from conventional vehicles to hybrid and electric vehicles on the Japanese economy and its individual regions. A key aspect of this study is that it identifies the impact of technological changes in automobile production (i.e. in the produc-tion shift from internal combustion engines to electric motors and batteries) on the industry at the national and regional levels by considering these technological changes as changes in the input coefficient of the input–output model.

## **Proposal and evaluation of the flood risk management using the new insurance system for flood damage combined with flood control**

**Dr. Hiroaki Shirayanagi**<sup>1</sup>, Prof Yukisada Kitamura<sup>2</sup>, Mr. Ryo Hirako<sup>3</sup>

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G20-O2 Social Innovation for Resilient Regions  
IUT\_Room 203, August 30, 2019, 9:00 AM - 10:30 AM

In recent years, frequent extreme weather conditions have led to enormous economic and social loss all over the world. In Japan, the river-flooded area accounts for only 10% of the land, but 50% of Japan's population lives on such land and the assets in this area account for 75% of Japan's assets. Therefore, the damage caused by torrential rain and typhoons is very extensive in terms of humans and assets. To help reduce these damages, flood countermeasures such as widening the river channel have been implemented, but as the population decreases and infrastructure renewal efforts become concentrated, these conventional flood countermeasures will be more difficult to implement in the future.

In this study, we suggest a new flood insurance system by combining flood countermeasures as a risk control method and flood insurance as a risk finance method, based on the current situation and problems surrounding flood disaster risk management in Japan.

In this system, a portion of the flood control project costs is covered by insurance product sales, so people who have losses due to flood damage are able to receive flood insurance payments if unanticipated flood damage is suffered. At the same time, inhabitants in disaster areas will benefit from damage relief implemented through the flood control project. Finally, this system is expected to reinforce resilience from flood damage in a flood disaster area.

As an example, we calculated the flood insurance fee based on the condition that 20% of the insurance product sales are assigned to the flood control project and all households purchase insurance that expires in 100 years, to target the flood damage caused by heavy torrential rains that occurred in some areas of Neyagawa City in Osaka prefecture. This insurance fee per household was calculated to be approximately 20,000 yen (160 EUR) per year. We also show that the total value of insurance products will rise even if the insurance fee increases, because it is possible to promote disaster prevention and reduction by allocating funds to the flood control project.

### **Everyday spatiality in Swedish cities: What can we learn from mobile phone data?**

Dr Ian Shuttleworth<sup>1</sup>, Dr John Osth<sup>2</sup>, Dr Marina Toger<sup>2</sup>

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S33-S1 Modelling place attractiveness in the era of Big and Open data  
MILC\_Room 310, August 28, 2019, 11:00 AM - 1:00 PM

The increasing availability of phone data means that it is possible to assess the mobility and interactions of people in different places on a variety of geographical and temporal scales. This presentation extends earlier work in this tradition that considered spatial segregation in Swedish cities (Östh et al 2018) by looking at the mobility experiences of phones originating from different types of home area by income, ethnicity, and housing type. The substantive context of the work is simple: social unrest in some parts of Swedish cities has been attributed to marginalisation, social exclusion, and spatial isolation just as have similar events in other countries. The presentation therefore seeks to explore whether phones from locales with high degrees of social deprivation, high concentrations of ethnic minority populations, or recent experiences of unrest behave differently on average than phones from more affluent neighbourhoods. The hypothesis to be tested is whether individuals from these areas are less spatially mobile than their peers in other types of place. The analysis, besides assessing average behaviour for different places, also considers heterogeneity in daily mobilities to compare the distribution of daily distances travelled by individuals from less affluent places with those from more affluent locales so as to look at variation between people as well as places. The results on mobility are related to various social, demographic and political indicators to test whether mobility (and immobility) work in the ways which are often assumed.

### **Spatial and Morphological Evolution Analysis and Classification of Urban Large Plots-A Case Study of the Historical City of Tainan, Taiwan**

Ms Yan Ciao Sie<sup>1</sup>

<sup>1</sup>National Cheng Kung University, Tainan, Taiwan

G10-O3 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 11:00 AM - 1:00 PM

Understanding urban with urban morphology helps to propose a management of the urban landscape which is based on the development of history. This study explores the "plot" which is an important elements of urban morphology, and taking Tainan which is a historical city of Taiwan as a study area. It observes and analyzes the spatial distribution and morphological evolution of the 1920-2016 plots. In Taiwan, the historical cities are less observed from the plots. Additionally, a plot are also the unit of land use and control, affecting the development of the surface. It connect to the establishment of the landscape and urban functions. The larger the plot is, the greater it influence. Therefore, in the face of a city that is developing faster and faster, it is helpful to provide a reference for urban landscape management by summarizing the characteristics of urban large plots and surrounding plots.

This study analyzes the overall plots in different periods by spatial auto-correlation analysis and percentage rating analysis, to find out the spatial aggregated and characteristics of the large plots. Calculating the openness and compactness of the large plots to analyze the cutting situation in different periods. Then using the town-plan analysis of Conzenian to observe how the large plots are affected by complexes of plan elements (plots, streets and town plan), building types and land use. Finally, it examines the morphological evolution and classification principle of urban large plots and surrounding plots based on land ownership. As a result, we can know which types of large plots are most possibly developed or need to be protected. So that they can be used as the basic information for urban design guidelines, land use control and development proposals, to manage urban landscape.

### **Oh, East is East, and West is West: A spatial look at the price convergence among the EU member states**

Dr. Boriss Siliverstovs<sup>1</sup>

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G11-O1 Spatial Econometrics  
MILC\_Room 309, August 29, 2019, 9:00 AM - 10:30 AM

We suggest a novel approach to monitor price level convergence based on the spatial filtering of the data. We capitalise on the observation that the inclusion of the Eastern European Countries (EECs) into the EU had the following consequences:

- 1) created a large group of homogeneous EEC countries with standards of living (initially much) lower than that of the Western European countries (WECs);
- 2) distorted the prevailing pattern of spatial correlation among the incumbent EU countries compared to the sample of WECs.

These two facts resulted in overestimation of the degree of spatial correlation for the EU as a whole compared to that when estimated only for Western European countries before the EU Eastern Enlargement. The convergence (catch-up) process is expected to manifest itself in bringing the pattern of the spatial correlation back to normal through the following channels:

- 1) by making EECs more heterogeneous among themselves;
- 2) by making EECs more homogeneous with respect to WECs.

We test our hypothesis by using price indices in Purchasing Power Parity for 37 separate consumption analytical categories for EU 28 countries collected by Eurostat. The data set covers the period 1999-2017. We use the Bayesian Spatial Error Model of De Oliveira and Song (2008) to assess the evolution of spatial



correlation over the time period in question. Our simulation evidence as well as empirical results support our hypothesis.

Our main finding is that except for a few consumption good sub-categories the convergence process of the Eastern European countries to the level of the incumbent member states is not over yet.

### **The Spatial Association between Drugs and Urban Violence: Evidence from Brazilian Neighborhoods**

Dr. Raul Silveira Neto<sup>1</sup>, Dr. Diego Silva<sup>2</sup>, Mr. Filipe Cavalcanti<sup>1</sup>, Mr. Filipe Miranda<sup>1</sup>

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G15-O3 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 29, 2019, 9:00 AM - 10:30 AM

Although it is amply recognized that part important of the very high levels of urban Brazilian violence is associated with drugs traffic, formal and rigorous investigation is rare and almost inexistent when the focus are urban neighborhoods. In fact, the available evidence about the association between drugs traffic and consumption and violence is solely based on across cities comparison and consider basically violence associated with homicide. Using a unique data set of 261 Recife Metropolitan Region neighborhoods and spatial econometric models (SLX, SDM and SDEM), the paper presents evidence about a strong and robust spatial association between drugs traffic and consumption and urban violence. The investigation brings at least three contributions to the literature. First, since the violence occurs spatially concentrated within cities, different from previous studies in Brazil, we study the association between drugs and urban violence using neighborhoods and not cities. Second, different from previous investigations, we use distinct indicators of urban violence, such as robbery and physical assault, and not only homicide rates. Finally, even if it is not possible to guarantee that our estimated associations between drugs and urban violence represent causal relationships, we were able to consider an unique large set of covariates that, together with spatial econometrics models, certainty turns endogeneity problems much less important. The set of controls includes not only traditional socioeconomic local conditionings of violence, but also, for example, the presence of slums and bar and restaurants activities in the neighborhoods. The set of evidence indicates positive and robust association between drugs traffic and consumption and all the indicators of urban violence (for example, the homicide rate elasticity related to drugs traffic rate is around 0.34). Thus, different from previous evidence obtained using sample of cities, urban violence in Brazil appears strongly associated with both the drugs traffic and consumption channels.

### **Urban Structure of Brazilian Metropolitan Regions: Identification and Characterization of Employment Sub-Centers**

Dr. Raul Silveira Neto<sup>1</sup>, Mr Flávio Rodrigues<sup>1</sup>, Dra Roberta Rocha<sup>1</sup>

<sup>1</sup>Federal University of Pernambuco, Recife, Brazil

G12-O4 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 2:00 PM - 4:00 PM

Although its average income stage, the urbanization process in Brazil is extremely advanced, being the percentage of population living in cities around 85%. Different from the situation of developed countries, this very quick urbanization led to the presence of housing informality and lacking provision of public transport and household infrastructure. These factors appear fundamental for understanding the urban structure of the cities and may imply distinctive characteristics. Very few researches, however, have explored the characteristics of Brazilian cities and metropolitan regions, being the available evidence

focused on specific cities. The objective of this work is, thus, to characterize the urban structure of the most important Brazilian metropolitan regions of the most populous macro regions of the country (São Paulo, Rio de Janeiro, Porto Alegre, Salvador, and Recife) by identifying the presence of sub-centers and pointing out their distinctive aspects related to the main CBDs. The research applies the methodology proposed by McMillen (2001), based on semi-parametric estimation, to a unique dataset of geocoded information of the precise locations of firms and employment. The set of evidence indicates that, in general, Brazilian metropolitan regions present urban structures more similar to those of US cities than to the ones present in Europeans urban centers, with the employment more concentrated relative to the population but also with important presence of important number of sub-centers (McMillen, 2001; Khrel, 2018). The results also indicate regional important differences: while the decentralization in the sub-centers of employment is stronger in the richest metropolitan regions of São Paulo and Rio de Janeiro, in the northeastern metropolitan regions of Recife and Salvador the CBDs are relatively more important and the number of sub-centers is smaller. These results are consistent with both the higher commuting time of the two first biggest metropolitan centers and with the more deficient provision of public transport and household infrastructure in the last two metropolitan regions.

### **Governance and institutions at the EU's eastern border: how to become resilient when multiple internal and external shocks occur?**

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G22-O1 Institutions

IUT\_Room 303, August 29, 2019, 2:00 PM - 4:00 PM

The analysis of resilience can outline the vulnerabilities within a system in relation to various types of shocks (natural disasters, climate change, social and economic crisis, wars etc.), which may further explain its capacity to resist, to recover and to transform by adopting a new growth and development pattern. In particular, the resilience approach can capture the weaknesses of the systems characterised by instability, insecurity, institutional weaknesses and structural fragilities, as well as inefficient governance, thus offering a scientific basis for the design of public policies. An investigation of resilience capacity from institutional perspective should provide a system evaluation of the current situation in the EU's eastern part, defined by political and economic crisis, the globalisation effects, the structural changes in the economy and society, the continuing search for reliable adaptability to a changing geopolitical environment, where the core-periphery relations on the European continent are repositioned in the context of a new power equilibrium between EU and Russia. Considering these aspects, the main purpose of the research is to identify which vulnerabilities caused delays in the development of EU's eastern border countries (Romania, Republic of Moldova, Ukraine) and also a considerably slow progress through the implemented reforms. The paper will also examine to what extent the governance type in these states is dependent on the informal institutions, and how this fact influences the growth. To better capture the resilience capacity of these countries, will be done a reporting to the developed countries of the EU (it is also important to outline the differences in terms of resilience between EU and non-EU Member States). The addressed issues will be presented in a dynamic manner (ante and post-global crisis from 2007/2009) and the research methods used will include qualitative, comparative and empirical analysis. In the same time, using GIS (Geographical Information Systems), some resilience maps will be designed. Such analysis can help to propose adequate measures in order to increase resilience capacity, reinforcing cross-border cooperation and enhancing eastern economies' convergence.

## **How the drivers of labour mobility differ over industry life-cycle?**

Dr. Jaakko Simonen<sup>1</sup>, Mr. Santtu Karhinen<sup>1,2</sup>, Dr. Rauli Svento<sup>1</sup>, Dr. Philip McCann<sup>3</sup>

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S41-S4 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 29, 2019, 9:00 AM - 10:30 AM

Current literature provides very few empirical studies where labour mobility has been clearly linked to the spatial distribution of activities, especially over the industry life cycle. In this paper we analyse how regional features, e. g. regional amenities, industrial structures as well as individual characteristics of employees affect regional labour mobility along the industry life-cycles of high technology sector. In order to do this, we employ panel data on the regional and industrial labour mobility of the Finnish high technology firms and regional economies. Our findings show that structure of the high technology sector as well as regional economic and amenity variables and individual characteristics of employees have an influence on the migration decisions of the high technology workers, although their roles vary in within-region and across-region mobility as well as at the different stages of the industry life-cycles. Moreover, the role of regional economic factors are analysed from the point of view of the origin and receiving region.

## **Creative destruction and creative resilience – Sudden structural change in the Oulu region**

Dr. Jaakko Simonen<sup>1</sup>, Mr. Johannes Herala<sup>2</sup>, Dr. Rauli Svento<sup>2</sup>

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S40-S2 Regional Resilience: How can regions survive?, IUT\_Room 203, August 28, 2019, 2:00 PM - 4:00 PM

At the start of this millennium, the city of Oulu and the surrounding region were a hub of mobile technology development. The high technology industry, led by Nokia Corporation, employed almost 14 000 people, representing 16 % of total employment in the region. After 2001, high technology employment declined by about 3 000 people until 2011. Recently, however, the sector has recovered quite significantly, and it currently employs approximately 13 000 – 14 000 people. In this paper, we analyse the recent development of the high technology sector in the Oulu region from the viewpoint of regional resilience. Utilizing both quantitative and qualitative data, we survey and describe the main aspects of the sudden structural change in Oulu region, particularly its effects on employment. In addition, and importantly, we explore the content and effects of some policy measures designed to alleviate the adverse effects of the structural change. According to our results, the Oulu region has recovered well from the 'Nokia shock' and has a good possibility of reaching the pre-shock growth rates. We argue that rapid recovering from the structural change has resulted from an efficient combination of creative destruction and correctly allocated policy measures.

## **How to win the voters hearts in city elections?**

Ms. Zofia Sincakova<sup>1</sup>, Mr. Oto Hudec<sup>1</sup>

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G06-O2 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 4:30 PM - 6:00 PM

City elections are related to the bottom up choosing, what kind of government and urban policies the citizens prefer and wish to see put into practice. The traditional concept of urban management considers free elections as a proof of democratic lawfulness. However, legitimacy depends on the local government's capacity to meet citizens' needs and to keep election promises. Signs of increasing mistrust of government, undermining its legitimacy to govern, are ever more evident all over the world. Activists and citizens call for the modernisation of the local government towards more participatory democracy. Obviously, participatory citizenship does not end with the participation in elections and represents instead a chief learning process for local governments, calling for open communication.

Various scandals including corruption have also hit the Slovak political scene in the second decade of the 21st century. The feeling of frustration and helplessness have stirred up among the people manifested in the lower turnout rates in the local elections. Among all Visegrad countries, the highest distrust in political parties is in the Slovak Republic (IVO, 2017). In recent elections, the phenomena of the independent (nonpartisan) candidates appeared in several countries (e.g. Ireland, Czech Republic, Slovak Republic), representing people of various backgrounds. Many former members of political parties decided to distance themselves from political parties and to act as independent candidates or activists. A number of new electoral candidates have emerged as a new wave of activists. The topics highlighted by the activists are primarily focused on the transparency, environment and community life. In comparison to partisan candidates, they can do much better to open dialogue and reach out to the citizens, also thanks to social networks.

Even if the topic of transparency seems to resonate in public and media the most, it is not yet confirmed, what are the main factors of higher transparency in cities. The proposed model examines how the political party affiliation matters in transparency (socio-demographic, financial, political). Discussion about the local political shift from the party to the anti-partisan spectrum is raised, in order to reveal if it is not only the way to win the voters heart. The preliminary results of the research have shown the relationship with the size of the cities and non-partisanship of the candidates. Further research investigates a wide variety of other factors as well.

### **Resilience as Adaptation: Measures and signals for the re-balancing of regional industry employment structure in small U.S. counties**

Dr. Timothy Slaper<sup>1</sup>

<sup>1</sup>*Indiana University, Bloomington, United States*

S28-S1 Applying a Complex Adaptive Systems Approach to Regional Economics: big data, network analysis,  
and computational theory

MILC\_Room 310, August 28, 2019, 4:30 PM - 6:00 PM

Regional economies are complex systems subject to perturbations – shocks. One element of a region's economic resilience is evidence of, or capacity for, adapting to shocks. Researchers have cautioned that a shock to a regional economy may displace a region from a growth or recovery trajectory and may erode a region's ability for adaptation. Thus, if there are metrics and signals for hysteresis, either the event or its aftermath, the need for, and the design of, interventions to mitigate the economic consequences would be more timely and effective.

We adopt an alternative calculation for the recovery phase. This method not only smooths jagged employment paths, but also provides the inputs for calculating the industry contribution to the recovery, indicates the degree to which a region has adapted its industry structure over time and whether a region has undergone a hysteresis event. We propose measures to provide insight to the adaptation narrative. The skew of contribution-to-recovery is modestly correlated with growth.

Statistical analysis using 1474 small U.S. counties suggests that peak, trough and recovery phases and levels are associated employment growth. Sources of income play a role in regional resiliency. Wage and salary income is positively related. Transfer payments, however, serve a dampening effect on drop, but a drag effect on recovery.

## **The Relevance of Resiliency Concepts and Measures: The experience of U.S. counties and the challenge of theory and practice**

Dr. Timothy Slaper<sup>1</sup>

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S40-S5 Regional Resilience: How can regions survive?

IUT\_Room 203, August 29, 2019, 2:00 PM - 4:00 PM

Using the experience of some 3100 U.S. counties as a practical guidepost, this paper slightly recasts salient concepts and measures of economic resilience. The paper proposes what to measure and how to measure the phases of resilience given the experience of the Great Recession and the recovery across U.S. regions do not lend themselves to a standard template of shock, drop and recovery-to-trend employment growth.

Using several unique experiences of selected counties, we make the case for greater flexibility in conceptualizing and measuring the phases of economic shocks and the following recovery or, often, a maladaptive hysteresis condition.

We configure the concept and measurement of recovery – trough to expected trend – into 2 parts for both conceptual and measurement relevance. A strong motivation for which is, as of 2016, a vast majority of U.S. regions had not recover to the expected trend. We apply and calculate these measures for all U.S. counties using BLS data from 2002 through 2016.

We statistically assess the relationships of these measures with respect to other measures of economic performance, industry structure and other regional characteristics. We find that the statistical associations do vary depending on the regions' scale and rurality. We find that the presence and growth of industry clusters is positively associated with resilience, both drop and return-to-peak. The proportion income from transfer payments – social security and disability – has a negative relationship with both drop and return to the pre-recession peak. The proportion of shock prone industries has a negative relationship with the return-to-peak, no doubt because those industries are subject to price and volume shocks outside the region and nation. Surprisingly, the Shannon diversity variable, typically having a negative and significant relationship with employment growth was not statistically significant for drop or return-to-peak.

## **New jobs in the region: who fills them?**

Dr. Martijn Smit<sup>1,2</sup>

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S11-S1 The regional socio-economic impact of the 4th industrial revolution, UdL\_Room 104, August 28, 2019,

2:00 PM - 4:00 PM

The traditional approach to new economic activities in a region is that of immigrating firms. Such firms base their deployment on a number of factors, including market access and the availability of resources; they often add to the existing sectors in a region. The young field of evolutionary economic geography focuses instead on new sectors branching out from existing sectors. Such intersectoral mobility is likely to increase

given technological progress. Still, these new sectors can only start and grow by using existing capabilities in a region, getting employees from other sectors or other regions. Employees and their knowledge are crucial in enabling or at least permitting the birth of new sectors in a region. We focus on the sources for employees in new sectors (i.e., not previously present in a region). Where do these employees come from – which sector, and which region? We use data on all employees and firms in the Netherlands over a period of several years to visualise the birth of new sectors in labour market areas, and we then analyse the probability an employee will be part of such a birth, depending on their characteristics.

### **Do cities satisfy human needs better? Towards a people-centred theory of agglomeration**

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G04-O9 Regional and Urban Development  
IUT\_Room 202, August 29, 2019, 2:00 PM - 4:00 PM

Cities are centres of socioeconomic, technological and cultural development and for centuries people have flocked to cities to enjoy the benefits of urban agglomeration. However, even though cities precede capitalist economies and the generative effects of agglomeration go beyond mere economic growth, the literature on agglomeration theory mostly takes the perspective of firms and the scale and network mechanisms that allow them to thrive in cities. People and households appear, but as beneficiaries of the added productivity and income enabled by urban agglomeration. Advocating a people-centred agglomeration theory, this paper sees cities as elevators to more than economic progress and asks whether fundamental human needs are also better catered for in cities. Recent theories of human needs see them as finite and universal, while their potential satisfiers are transient and culturally defined. The implication is that some of these satisfiers may be specific to cities, especially in developing countries with strong urban-rural contrasts, which may stimulate urban migration. In other words, the question is whether there are 'agglomeration economies' also at work towards the satisfaction of human needs in cities, raising them from otherwise minimal levels of satisfaction due to the urban confluence of bigger quantity, better quality and greater choice of opportunities and amenities. The paper evaluates which satisfiers are only possible in cities (agglomeration benefits) and explores the correlate urban dissatisfiers (agglomeration costs). We frame human needs not only as individual states of being but also as impulses for individual and collective doing and capacities for having and interacting within a given ecosystem – e.g. a city. Therefore, we introduce moral, political, economic and social frameworks to highlight the prerequisites that must be in place to improve human need satisfaction in cities. By revisiting the original tenets of agglomeration theory, we propose new lines for need-based urban planning and policy practices.

### **International Comparative Study and Implications of Local Government Empty House Municipal Ordinances**

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G06-O2 Regional and Urban Policy and Governance  
IUT\_Room 306, August 28, 2019, 4:30 PM - 6:00 PM

This study examines Japan's central and municipal government legal system regarding empty houses, and uses a comparative perspective to derive implications to solve South Korea's empty house problem.

South Korea and Japan are facing very similar social problems. Population changes in Japan, which is characterized by low fertility and aging society have resulted in empty houses in both urban and rural areas. According to the Population and Housing Census of the National Statistical Office, the number of empty houses in South Korea is 1,086,919 households, exceeding a million households for the first time in history. Empty houses in urban areas vary widely. However, detailed and comprehensive survey of empty houses and the management system for empty houses are at a marginal level. Especially in the residential areas of old downtown areas, population decrease, population outflow, and delays in maintenance work have accelerated the occurrence of empty houses, and the phenomenon has been neglected.

Empty houses in Japan account for 13.5% of the total number of houses with 8,200,000 households, and empty houses are estimated to increase every year. Therefore, the central government enacted the "Special Measures for the Promotion of Empty Houses and Other Measures" in 2015, and reorganized the management system for empty houses.

In South Korea, the management system for empty houses is vague and ambiguous, while the central government and municipal government legal systems in Japan are strictly followed with administrative vigor through empty house ordinances, in accordance with the provisions of the Act on Special Cases relating to Empty Houses.

### **Living labs in the Moroccan context: what contribution to reducing territorial disparities?**

**Mr Elbroumi Soufiane<sup>1</sup>, Mr Ed-Dahmouny Hicham<sup>2</sup>**

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S12-S1 Socio-spatial equity in the light of post-industrial restructuring, modeling exercises in Africa and Asia  
IUT\_Room 205, August 30, 2019, 2:00 PM - 4:00 PM

The current challenges and transformations calls for a creation of new ways, more sustainable to produce, to live, to trade, to be and to think. As a result, new collective approaches have been emerged on several continents that highlight the need to combine scientific knowledge and experiential knowledge. (Lévesque, 2014, p 370)

In the first generation of experiments, we have seen formulas such as local productive systems, clusters and innovative environments that combined technological innovation with organizational innovation were experimented towards the end of the 20th century, sometimes by public authorities, sometimes by local governance instance, sometimes by mixed formulas that include these two levels. (Benko & Lipietz 2000, p 25)

Later, new experiences made it possible to go even further in the convergence of the knowledge economy and social innovation. Inspired by various currents and research works dealing with open innovation, collective innovation and even collective intelligence, these experiences borrow from existing knowledge and create new knowledge, with researchers, practitioners, users, public authorities and many others. Stakeholders including function and representation vary from case to case. (Klein; 2016; p55)

We are interested in one of these experiences, those of Living Labs, an emerging form of social innovation, which is attracting growing interest. Our research work aims to characterize the Living Lab concept and to make it explicit in the Moroccan context as a form of social innovation by crystallizing the reflections on its potential contribution to the reduction of territorial disparities. As a progress report, this paper will present the provisional results of our research. First and foremost, we are interested in a literature review that puts the existing one back on the map. We will give an inventory of the documentation in Morocco and its place relative to the European case as a reference at the moment.

We will then present the perspectives of our scientific project for a topic treated for the first time in Morocco and justified by the contrast currently experienced between economic growth and sustainable inclusive development.

## **The Strong Tourism Sector in the Brazilian Archipelago of Fernando de Noronha: A good example of economic well-Being**

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G18-O2 Tourism and Culture

IUT\_Room 104, August 29, 2019, 2:00 PM - 4:00 PM

Tourism in Brazil has the potential for economic development due to the great number of attractions throughout the country such as beautiful beaches, exuberant nature, historical and cultural aspects, among others. The Brazilian Archipelago of Fernando de Noronha, located in the Atlantic Ocean, has the tourism sector as its main economic activity and its main tourist attractions are related to its natural resources - ecotourism activities, adventure tourism, nautical tourism. Because it is an area of environmental protection, the flow of tourists in the archipelago is largely controlled by government authorities, however, it is the tourism sector that energizes the local economy. When we analyzed data from the Annual Social Information Report (RAIS) on the generation of formal jobs linked to tourism activities in the Archipelago, it was found that tourism in 2017 accounted for 72.95% of jobs in the region and between 2013 -2017, the average growth rate of these jobs was 12% per year, while in Brazil, this rate was only 0.67%. per year. In addition, we calculated the locational quotients of the tourism sector for Fernando de Noronha in 2017, this QL assumed a value of 17.71. That is, Fernando de Noronha presented a high level of specialization in the tourism sector equivalent to 17.71 times that observed in the Brazilian average. In addition to this analysis of the performance of occupations in the tourism sector, the present study aims to present the results of a survey that was carried out locally with residents of the region about the perception of these citizens about the importance of tourism in promoting well-being in Fernando de Noronha. Thus, with a total of 398 questionnaires applied and validated, more than 80% of the population claimed to be satisfied or very satisfied with existing job opportunities and recognize the importance of tourism in creating such jobs. They also responded, for the most part, that tourism promotes skills in the workforce and values the archipelago's environmental assets. In this context, it was verified that 71.47% of the respondents declared themselves satisfied or very satisfied with the quality of life in Fernando de Noronha, while only 11.36% were dissatisfied in some way. Therefore, we concluded that tourism is an important tool to promote economic well-being in Fernando de Noronha and that even in the face of a Brazilian economic crisis, tourism activities presented strong economic growth in the archipelago between 2013 and 2017.

## **The Effects of International Trade on Brazilian Income Inequality**

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G04-O4 Regional and Urban Development, IUT\_Room 202, August 28, 2019, 2:00 PM - 4:00 PM

This paper investigates the effects of trade openness on income inequality in Brazil between the years 2002 - 2014. In this period Brazil is marked by monetary stability, economic growth, trade openness and reduction of income inequality. So, the objective of this article is to demonstrate how trade openness is correlated with the distribution of income in the Brazilian economy. Therefore, as an indicator of trade liberalization, we use the participation of exports and imports on Brazil's GDP and the dependent variables adopted were the following: the Gini index; the ratio of the richest 20% to the poorest 20%; and the ratio of the richest 10% to the poorest 40%. The econometric analysis was the panel models, by fixed and random effects, using the Federative Units of Brazil as units of observations. In general, the results found were statistically significant and indicated the existence of negative correlations between trade openness and



income inequality. Then, the high level of trade liberalization can contribute to the lower the income inequalities in the country. There was a discrepancy between the Brazilian regions, where the South region had lower indicators of income inequality and higher levels of trade openness. The Northeast region, on the other hand, presented the worst indicators of poverty and income inequality, and a lower degree of trade openness in the country. It is concluded, therefore, that international trade can be an important tool in the promotion of Brazilian social welfare, especially if there is an increase in trade liberalization in the poorest regions, as is the case in the Northeast of the country.

### **A multilevel analysis of firm performance in emerging economies: The role of transport infrastructures and logistics**

Dr. Ada Spiru<sup>1</sup>, Prof. Angela Stefania Bergantino<sup>1</sup>, Dr. Claudia Capozza<sup>1</sup>

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G08-O1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 11:00 AM - 1:00 PM

The definition of an enterprise as a “black box” (Melitz, 2003) leads to continuously investigations by scholars for possible effects caused by internal and contextual factors of enterprises. Despite the importance of internal characteristics in determining performance heterogeneity (Davis et al., 1996), further investigation about the context in which firms operate is still required. Particularly, it has been asserted that the contextual factors affect aggregate performance. Nevertheless, these studies estimate the association between the national context and macroeconomic performance rather than identify the causal effects of it on firm performance (Commander et al., 2008).

The success or failure of the economies can be traced in large part to the performance of their enterprises (McMillan and Woodruff, 2002). Therefore, studying firms’ performance became important to explain the economies as a whole, especially in emerging ones, where national context might be very diversified and firms operating are quite heterogeneous (Goldszmidt et al., 2011). This research is focused on a particular aspect of the national context, recognizing the importance of “infrastructure as the platform for economic activity” (EBRD, 2017) that positively affects economic growth (Calderón and Servén, 2004) especially for emerging economies (Baum-Snow et al., 2017). Even though, there are not in-depth microeconomic evidences that directly link country transport infrastructures endowment to firms’ performance heterogeneity.

This study explores firm performance heterogeneity and its relationship with country transport infrastructures endowment in East Europe and Central Asia using firm-level data from the fifth round of BEEPS which covers 32 countries over the period 2012-2016. Due to the interaction at different levels of the factors that influence firm performance, we deemed appropriate to study them in an integrated structure through a multilevel approach (Srholec, 2011). We assess the impact of several factors on sales firms’ performance. Specifically, firm-level characteristics like size, age, export activity, foreign ownership and qualification of the labour force, are nested at the second level with country-factors such as macro-control variables, transport infrastructure endowment – road, rail, port and airports – and logistic performance indicators.

The empirical findings contribute to the literature on bringing micro-evidence that despite firms operating in different countries have same characteristics, there is performance heterogeneity at country-level which is partially explained by different country transport infrastructures endowment and logistics performance. Moreover, we consider more inclusive transport infrastructures features that have not been yet jointly explored in the microeconomic literature using the appropriate approach, the “intercept-as-outcome” model.

## **Workplace segregation among employed with immigrant background versus natives in firms in Norway**

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G15-O4 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 29, 2019, 2:00 PM - 4:00 PM

**Abstract:** This paper describes analysis of workplace segregation among employed with immigrant background versus natives in Norway. With political ambitions to achieve an improved integration of immigrants in the society through lower segregation relatively to natives, we investigate how the segregation at workplaces has evolved in a period from 2005 to 2015.

Immigrants' participation in work is considered an important factor to be as integrated as possible in the society. However, participation in working life may reflect a necessary, but not necessarily a sufficient, condition for immigrants to be better integrated into a society. High or increasing accumulation of immigrants in firms in some industries and regions does not necessarily reflect increased integration but may have segregating effects despite a working relationship.

We thus raise questions about the degree of homo- and heterogeneity in the composition of the workforce in the firms, how this composition has evolved and whether we can observe an increasing or decreasing workplace segregation among employed with immigrant background? Initially, all firms in Norway are examined, but then specified to firms with both foreign and native employment, by their size, industry and regional localization. Employed immigrants are further specified by selected characteristics as gender, age, level of education, country background as well as their duration of residence in the host country.

As a methodological basis we use individual matched employer-employee data covering the entire employment to investigate how workplace segregation has evolved between selected years. We use different methods for analyzing the detailed data, but with most focuses on the D index, the dissimilarity index, and in particularly cases also the Gini coefficient.

Preliminary results indicate a decline of workplace segregation when employed in all firms are included. Despite an increase of firms with only immigrant workers, an even stronger decrease in the number of firms with only native employed may reflect this finding. However, when the analysis is specified to firms that have both foreign and native employed, the workplace segregation increases. Furthermore, male immigrants show higher workplace segregation than female immigrants, segregation falls with increasing educational level and with increasing duration of residence. Industries such as construction and business services contribute to increase workplace segregation, and immigrants from EU countries in East Europe contribute to keep up segregation. Workplace segregation increases with declining regional centralization generally, but when assuming firms with mixed foreign and native employment the regional differences are more evenly distributed.

## **Capacitated facility location for regional ambulance emergency services: An analysis based on stochastic coverage**

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G12-O1 Location of Economic Activity  
MILC\_Room 309, August 29, 2019, 2:00 PM - 4:00 PM

Emergency medical services (EMS) are crucial parts of modern health care. Given its importance for the modern medical infrastructure, EMS and its service networks represent a well-studied field in operations research. Recent studies pointed out that one of the remaining challenges in EMS is the factor of uncertainty. In cooperation with a local Austrian ambulance service provider (ASP) our objective is to tackle the factor of uncertainty by incorporating the stochastic nature of emergencies. In specific, we i) design and implement a probabilistic demand model for the maximization of stochastic coverage, ii) compare results to a deterministic approach and iii) analyze implications for network capacities and travel times. In doing so, we estimate a probability surface for a one-year operational data provided by the ASP using kernel density function computation. We then specify a probabilistic demand model and design different coverage scenarios, which we compare to prior research using a deterministic approach. Two of the designed coverage scenarios are further subject to a capacitated network and travel time analyses. This research illustrates that a stochastic demand model for maximizing coverage significantly differs from a deterministic approach. Findings offer insights into how the factors of stochastic coverage, number of emergency service stations (ESS), capacities needed, and ambulance travel times are linked.

### **The dynamic impact of monetary policy on regional housing prices in the US: Evidence based on factor-augmented vector autoregressions**

Prof. Florian Huber<sup>1</sup>, Prof. Manfred M. Fischer<sup>2</sup>, Mr Michael Pfarrhofer<sup>1</sup>, [Ms Petra Staufer-Steinocher<sup>2</sup>](#)

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S35-S1 Recent Advances in Spatial Econometrics and Big Data

MILC\_Room 310, August 29, 2019, 9:00 AM - 10:30 AM

In this study interest centers on regional differences in the response of housing prices to monetary policy shocks in the US. We address this issue by analyzing monthly home price data for metropolitan regions using a factor-augmented vector autoregression (FAVAR) model. Bayesian model estimation is based on Gibbs sampling with Normal-Gamma shrinkage priors for the autoregressive coefficients and factor loadings, while monetary policy shocks are identified using high-frequency surprises around policy announcements as external instruments. The empirical results indicate that monetary policy actions typically have sizeable and significant positive effects on regional housing prices, revealing differences in magnitude and duration. The largest effects are observed in regions located in states on both the East and West Coasts, notably California, Arizona and Florida.

### **Local Buzz or Global Pipelines: How India Pale Ale Conquered the Netherlands**

[Dr. Joep Steegmans<sup>1</sup>](#), [Dr. Marc Schramm<sup>1</sup>](#), Prof. Neil Reid<sup>2</sup>

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G07-O2 Innovation and Regional Development

UdL\_Room 104, August 29, 2019, 9:00 AM - 10:30 AM

The paper investigates the effects of geographic proximity and network linkages on product innovation in the craft beer industry. We focus on craft breweries because of the collaborative culture of the industry, which is highly regarded by most brewers, allowing knowledge to be easily disseminated. We apply the conceptual framework of local buzz and global pipelines; thereby, distinguishing between knowledge that can be acquired by simply being located in each other's vicinity and knowledge that can only be acquired through actively collaborating.

We use data on Dutch craft breweries over the period 2010-2018, which contain for instance the physical locations of breweries and information on the beers brewed. Our data set contains 682 Dutch breweries and 11,489 unique beers, among which 820 collaboration brews (when including aliases, we have 12,225 beers, among which 847 collaborations). The collaboration brews are of special interest as these allow us to identify the so-called pipelines. Buzz is identified through regional clusters based on the location of the breweries.

We estimate a regression model that quantifies the spread of new beer styles within the Dutch craft beer market; that is, we analyze how new beer styles spread within the Dutch craft beer industry and to what extent its diffusion can be contributed to local buzz and global pipelines. Of main interest is the expansion of India Pale Ale (IPA) through the market. We chose IPA because of its popularity among both craft brewers and craft beer drinkers alike. It is also a style that has been the subject of significant innovation in recent years, including the creation of new sub-styles. The spread of other increasingly popular beer styles, such as imperial stouts, porters, and barley wines, are used for robustness purposes. We also check the robustness of the results by defining local buzz and local clusters in terms of network linkages instead of geographic proximity; that is, we define a network as being a member of the same brewery organization, etc.

### **Satellite and Wireless Broadband Service Complementarity and Substitutability in Lieu of Wired Rural Internet Service**

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G01-R1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 11:00 AM - 1:00 PM

It has always been expensive to deliver telecommunication services to rural and isolated households, but as new broadband Internet technologies have been introduced that are both cheaper and more effective, the economic dynamics have changed. More rural areas have received the advanced broadband technologies, but many rural areas are still perceived as offering the least in economic returns for private investment and have not. Given the apparent benefits of the Internet, there are meaningful consequences for rural households remaining without, or with lesser, broadband service. Wireless Internet has improved a great deal over the last decade, but is it a solution to lack of universal rural service? Our research will be somewhat broad ranging at this point and constitute four questions: (1) the technical state of satellite and fixed and mobile wireless and how it fits into the rural broadband market, (2) how dependent are rural areas on the (various aspects of the) Internet? Or what is the relationship between rural economies and the Internet? (3) Are wireless broadband systems substitutes or complements to hardwired systems? What does substitute versus complement mean for rural households?

### **Ex Libris: Two regional scientists will speak about publications that have been of critical importance for their career**

Robert Stimson (p)<sup>1</sup>, Antoine Bailly (p)<sup>2</sup>

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S01-S2 Regional Science Footprints of Walter Isard  
IUT\_Room Amphi 10, August 29, 2019, 4:30 AM - 6:00 PM

### **Does distance determine who is in higher education?**

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S46-S1 Recent Trends in Regional Socio-Economic Inequalities  
IUT\_Room 203, August 30, 2019, 11:00 AM - 1:00 PM

This paper addresses how the location of higher education institutions affects regional human capital inequality. More specifically we examine the following questions: Does distance to higher education institutions act as a deterrent to enrollment, and thereby cause regional inequality in educational outcomes? Are high school students from low socio-economic homes, more affected by longer distances? And is the relationship between distance and enrollment more pronounced in some geographical regions of Denmark? We employ Danish administrative data of high school students from 2006–2013 and find no significant relationship between distance and the decision to enroll in higher education, after controlling for individual and parental characteristics. The regional inequality in high school graduate's educational choice, are mainly due to regional differences in the parent's education level. When we consider, that parents with higher education typically locate in the bigger cities (with shorter distance to education), we find a very weak relationship between distance and education, for a sub-group of the population: The results suggest a small negative association between distance and enrollment among students in less-urban regions, in families where neither of their parents completed a higher education.

### **High spatial resolution traffic flow and emissions based on taxi GPS data in Bangkok, Thailand**

Ms Manlika Sukitpaneent<sup>1</sup>, Dr Marc E. J. Stettler<sup>1</sup>

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S63-S1 Public transportation and big data: data processing and valuation  
MILC\_Room 310, August 29, 2019, 4:30 PM - 6:00 PM

A high spatial resolution traffic flow is an important input variable for vehicle emissions estimates and health impact assessments. Due to the limited number of fixed detectors on roads, it is a challenging task to estimate the traffic flow on the entire the road network. In this study, we demonstrate a methodology for predicting traffic flow using the GPS data from public taxis (probe vehicles). The fundamental diagram, which describes the relationship between traffic flow, speed, and density, is applied in order to estimate the flow. Uncertainty in the estimated traffic flow is also quantified and propagated to uncertainties in vehicle emissions estimates. The methodology is applied to a case study in Bangkok Metropolitan Region, Thailand using data from approximately 3,000 taxis, to estimate the average vehicle speed on each road segment. A validation of the traffic flow estimates is performed for each road categories.

### **Performance Assessment of Chinese Super Cities by Means of Super-Efficient DEA**

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G01-R1 Cities, Regions and Digital Transformations  
IUT\_Room 404, August 28, 2019, 11:00 AM - 1:00 PM

Over the past decades, many Asian cities - especially, Chinese cities - have shared an unprecedented high degree of economic and geographic-demographic dynamics. It is noteworthy however, that cities in this region display also much heterogeneity in terms of economic performance, technological innovativeness,

cultural profiles and spatial interaction. It is, therefore, interesting to develop an efficiency ranking of the multi-dimensional performance of these large cities so as to identify 'super-cities', whose economic and cultural achievements outperform others. The first aim of this paper is now to undertake a multi-faceted performance ranking of 12 large cities in the Asian region, with a special focus on Chinese large cities, by using of a Super-efficient DEA (Data Envelopment Analysis). In this study, we consider 3 inputs and 2 outputs. Based on a large-scale data base and our analysis results, it appears that Hong Kong, Kuala Lumpur, Bangkok, Tokyo and Singapore may be regarded as a Super-efficient Cities. It also turns out that Osaka, Shanghai, Beijing, Seoul, Fukuoka, Mumbai and Taipei manifest themselves as inefficient cities. In these inefficient cities, there is clearly scope for improvement in performance, which requires of course an efficiency enhancement strategy, depending on the choice of productive inputs and achievement levels. In our modelling approach, we employ an efficiency-improving projection model, called a Distance Friction Minimization (DFM) model in DEA. The DFM model is based on a generalized distance friction function and serves to improve the performance of a Decision-Making Unit by identifying the most appropriate movement towards the efficiency frontier surface. To design a feasible and realistic improvement strategy for low-efficiency cities, we develop a Target-Oriented (TO) DFM model, in order to generate an appropriate efficiency-improvement projection model. The standard TO approach specifies a target-efficiency score (TES) for inefficient DMUs. Next, we also develop an objective target-setting model in our TO-DFM approach in DEA, named the Autoconfiguration Target (AT)-DFM model. This approach is able to compute an input reduction value and an output increase value in order to achieve an autoconfiguration target-efficiency score. The second aim of this paper is to apply this newly develop AT-DFM model with a fixed factor (FF) reflecting more realistic circumstances and requirements in an operational strategy for a feasible efficiency improvement. The above-mentioned new AT-DFM-FF model will be applied in order to provide an efficiency-improving projection for inefficiency enhancement of several large Asian cities, especially focused on the Chinese cities.

### **The role of large enterprises in regional economies: case of Hungary**

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G12-O2 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 9:00 AM - 10:30 AM

The race for urban places, as we face the increasing importance of city regions nowadays, the location choice of enterprises as well as their embeddedness, effects on their surroundings are focal points analysing regional development circumstances. Differences in the standard of living (or well-being of inhabitants), income inequalities or any others represent particular interest, especially from the perspective of regional economic theory. Nowadays we face the ascending importance of large enterprises (multinational and transnational companies) in enhancing local/ regional development. Their distribution, spatial structure and the level of how they enhance local economies varies to high extent among regions. A common characteristic of the current economies, that the average productivity level of large enterprises exceeds the small and medium-sized enterprises (SMEs) twice or thrice, contributing to the emergence of 'dual economy' resulting the uneven distribution of economic performance. After the shift to market economy in the Central and Eastern Europe (CEE) the main driver of economic development has become the foreign direct investment forming even higher level of inequalities than in the European average. In Hungary, after the collapse of the Soviet system the structure of the economy concerning the distribution of different sized enterprises has totally changed, too. Large enterprises (the range of TOP 500 companies by revenue) are in charge for half of the gross domestic product, while they employ around 20% of the active population. Parallel to this they operate in various industrial branches frequently dominating them, defining the spatial

structure, income generation characteristics of regional economies. During the last years less efforts have been made to analyse the effect of their distribution on local/regional level. Moreover, there are methodological barriers to exploring their role in local economies as registers tend to consider exclusively their seats. On one hand, in order to provide more accurate comprehension on their significance in forming regional economic base our study is dedicated to determine their spatial distribution regarding not just seats but all locations. Demonstrating their distribution, assessing the sectoral diversity of the NUTS-3 regions and income inequality patterns we will provide an in-depth analysis of economic development in Hungary.

### **Spatial patterns of labour force structure in Hungarian counties 2007-2015**

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G05-O6 Regional and Urban Labour Markets  
IUT\_Room 210, August 30, 2019, 9:00 AM - 10:30 AM

In today's knowledge-based economy, human capital is gaining more and more importance. Especially in case of knowledge-intensive industries, it is crucial to have highly educated labour in place. In order to make the right decisions, educational and regional policies also need well-based economic analysis on the structure of the workforce and on changes of it.

On the one hand, regions with diverse labour force provide firms with skilled workers and they can also gain advantage from knowledge spillovers of other firms. On the other hand, regions with less diverse labour pool can offer advantages, which the firms benefit from in form of specialized local labour market, specialized local value chains and intra-industry knowledge spillovers.

In order to provide policymakers with a dynamic picture on the structure of the regional labour force, we analyse data based on Standard Classification of Occupations on NUTS3 territorial level (counties) in Hungary. Our goal is to gain this picture. In more detail, in our investigation, we apply dynamic Shift-share analysis on data between 2007 and 2015 to answer the following questions:

1. In which of the Hungarian counties were driven changes in the extent of workforce by changes in national workforce structure?
2. In which of the Hungarian counties were affected changes in the extent of workforce by regional characteristics?
3. Which of the counties had the most and the least diverse labour pool?

According to our expectations, counties with higher education institutions had higher qualified human capital, and in these counties workforce was affected mostly by their own regional characteristics. In other counties these changes were driven by changes in national workforce structure. This picture could change in time, our goal is to investigate how.

### **Individual and institutional factors of competitiveness in the European Union regions**

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G08-O4 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 9:00 AM - 10:30 AM

Our study presents a new index, called Combined Regional Competitiveness Index (CRCI), measuring the competitiveness of 151 European Union regions. The aim of the new index is to explain differences in economic growth. While it is generally believed that the basic unit of territorial competitiveness is the firm,

existing country level and regional competitiveness measures focus on the widely interpreted institutional aspects of competitiveness and neglect individual (firm) level characteristics (Annoni 2016, Huggins 2003, 2011). We have created a competitiveness index that combines together the firms' individual competencies and the regional institutional factors in a systemic way. These CRCI pillars and sub-indices reflect not only to theoretical constructs but also to the availability of data.

The new index comprises four sub-indices, nine pillars and 18 variables each representing a different aspect of the regional competitiveness. Intensity of competition sub-index reflects to two types of competitive pressure one that is coming from existing businesses and the other is deriving from new entry. Growth and internationalization strategy includes the firms' generally interpreted growth and international aspirations. In the Human capital sub-index, we incorporate the businesses' level of education and training and the entrepreneurial abilities of the leader of the business. The Innovation sub-index reflects to the firms' renewal capabilities. It measures the ability of create new technology, new product, and how firms can absorb existing technology.

The cluster analysis shows that the three groups of the 151 EU regions prevail a wide varieties of competitiveness profile based on the ten pillars of competitiveness. The regression analysis shows that the regional employment rate of CRCI has a positive effect on the gross added value per employee in the given region. We can find that CRCI scores explain regional growth both in terms of value added and employment. Moreover, institutional factors' coefficients are found to be significantly positive in terms of any performance metrics, individual factors have positive but insignificant effects.

#### Literature:

Huggins, R., & Williams, N. (2011). Entrepreneurship and regional competitiveness: The role and progression of policy. *Entrepreneurship & Regional Development*, 23(9-10), 907-932.

Huggins, R. (2003). Creating a UK competitiveness index: regional and local benchmarking. *Regional Studies*, 37(1), 89-96.

### **Historical distribution of regional economic activities**

#### Prof. Takatoshi Tabuchi<sup>1</sup>

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G12-O2 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 9:00 AM - 10:30 AM

The regional distribution of population is considered to be in proportion to the distribution of amount of food in preindustrial society of Japan. In fact, the correlation coefficient between the population and the amount of rice over 66 regions in 1834 is 0.845, implying that 71.4% of the population distribution is explained only by the distribution of rice.

In modern society after the Industrial Revolution, however, agricultural goods have been getting dominated by manufacturing goods and services. The former goods are normally produced in farmlands, whereas the latter in cities due to the existence of agglomeration economies in production. That is, the determinant of the population distribution is not only the distribution of farmlands, but also the distribution of economic activities of manufacturing and services.

The manufacturing and service production is an agglomeration force, while agricultural one is a dispersion force. The dispersion force is due to land. It is not only land for agricultural production (Krugman, 1991), but also land for housing (Helpman, 1998). The dispersion force is exogenous First Nature such as land fertility, flat land, and pleasant temperature. On the other hand, the agglomeration force is endogenous Second Nature because they are determined by the distribution of economic activities such as market access and supplier access (Redding and Venables, 2004).



Hence, we may simply hypothesize that the distribution of firms and households is determined by exogenous interregional distances and endogenous distributions of economic activities. Therefore, the main objective of this paper is to explain the Second Nature by the First Nature. Specifically, the historical population distribution in Japan may be explained by the First Nature of geographical variables such as the intraregional and interregional distances and the distribution of arable land and inhabitable areas.

For this purpose, we develop a multiregional NEG model based on Behrens, Lamorgese, Ottaviano, and Tabuchi (2007) by introducing the housing sector. Linearizing the spatial equilibrium conditions, we derive a closed form solution of the conditions, which is empirically testable. Using historical data of population and geography attributes by prefecture in Japan, we show that the interplay between agglomeration and dispersion forces can be expressed by a single key parameter that describes the transition of historical distribution of regional population from 1884 to 2017.

### **Analysis on the relationship between local public services and fertility in Korea**

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G17-O2 Population, Migration and Mobility Behaviour  
IUT\_Room 101, August 29, 2019, 4:30 PM - 6:00 PM

Low fertility has been emerging as an important issue in Korea. The total fertility was 0.98 in 2018. Despite considerable financial supports to encourage childbirth, the fertility rate is still on the decline. We are seriously aware of the problem of declining fertility rate and have been preparing countermeasures at central and local levels. However, since the fertility rate can be influenced by socio-economic policy factors, even if the effect of a particular policy is positive, it may be offset by other factors. Under those circumstances, this study analyzed the effect of public services and labor market conditions in the region on the low fertility rate to find out the fundamental cause of the declining fertility rate. We used panel data from 16 metropolitan provinces and 188 municipal areas from 2003 to 2016. The results show that the better accessibility to childcare and the more stable working environment of women, it has positive impact on childbirth. we found that the more number of infrastructures such as the number of medical infrastructures, the number of social welfare facilities, and the number of cultural infrastructures, they have a positive effect on birth. Therefore, facing the problem of low fertility, we need to implement birth policy to improve the overall quality of life rather than the policy providing quantitative incentive scheme.

### **How does natural disaster experience impact spatial structure of supply chain network?**

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G12-O4 Location of Economic Activityy  
MILC\_Room 310, August 30, 2019, 2:00 PM - 4:00 PM

This paper investigates empirically the interrelationship between the perception of a forthcoming disaster risk based on the actual disaster damage and the change in the spatial distribution of firm transactional networks (supply chains) by examining the Nankai Trough area after the Great East Japan Earthquake in the period 2009 to 2017. By adopting the propensity score matching and the difference-in-difference method, the study estimates the effects of tsunami damage on the magnitude of the spatial concentration or dispersion of the supply chain network stemmed from risk perception, measured by the inverse of the Herfindahl-Hirschman Index after 2011. The results show that the magnitude of the spatial concentration or

dispersion of suppliers changes heterogeneously after 2011 largely dependent on firm size, which can indicate the barrier of the capacity constraint toward the pre-disaster preparation.

### **Trade liberalization and productivity in traded and non-traded sectors**

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S42-S2 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 2:00 PM - 4:00 PM

This paper develops a trade model with heterogeneous firms in traded and non-traded sectors to analyze the intra-industry effects of international trade. We consider how reduction in trade costs affects product switching within traded and non-traded sectors and their productivity change through a reallocation of resources between those sectors.

### **Berlin Calling - Regional Migration in Germany**

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S41-S2 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 28, 2019, 2:00 PM - 4:00 PM

In Germany, being one of the oldest countries in the world, only surpassed by Japan, demographic change is one of the defining social challenges in the coming decades. However, the process of demographic change is heterogeneous on the regional level and might be reinforced or mitigated by migration movements. In order to understand this relationship, it is essential to analyze the drivers of migration patterns in Germany. Using innovative data containing every single migration movement between municipalities (NUTS-3) disaggregated by age-groups, based on administrative records between 2000 and 2015 for the first time; we are able to have a precise look on internal migration in Germany. By enriching this data with regional economic information like GDP, unemployment rates, age-specific wages, and housing prices, we can identify the relevant push and pull factors of internal migration over different stages in the life-course. Another contribution to the existing literature concerning internal migration is the inclusion of housing prices as a price index on a small regional level.

Using PPML gravity models, we are able to identify the predominant role of regional economic considerations as drivers for internal migration in Germany, especially for the younger age-groups who are the majority of interregional migrants. In particular as push factors, labor market considerations are the most powerful explanatory variables for interregional migration. Furthermore, by including the share of persons in the same age group as the migrants as an explanatory variable, we can show, that internal migrants of the same age groups indeed cluster in densely populated areas and reinforce the regional heterogeneity of demographic change.

### **Productivity and Wide-Area Consolidation in Japanese Sewerage Industry**

Dr. Tomoyasu Tanaka<sup>1</sup>

<sup>1</sup>Kindai University, Higashi-osaka, Japan

In the latter half of the 1990s and early 2000s, mergers of municipalities were actively carried out in Japan, and the number of municipalities decreased to about half. Sewerage operators which is owned by municipal governments are no exception, consolidation has been promoted along with municipal merger. Recently, a lot of sewerage operators have problems about aging of sewer facilities, decrease of staff, reduction of revenue from sewage charge and so on and it is getting difficult for sewerage operators to manage like the same as before. Therefore, Japanese government promotes wide-area consolidation of sewerage operators to solve these problems. It is thought that wide-area consolidation is a mean to aim for efficient operation. Under these circumstances, in this paper, we analyze the effect of wide-area consolidation of sewerage operators. We examine whether or not wide-area consolidation contributes to productivity increase of sewerage operators. Firstly, we construct the panel dataset from FY2002 to FY2016 including consolidated and non-consolidated sewerage operators. Secondly, we calculate total factor productivity (TFP) of sewerage operator using the panel dataset. Finally, we examine whether or not wide-area consolidation has a positive impact on total factor productivity (TFP). Through these analyses, we verify the effectiveness of wide-area consolidation in sewerage industry.

### **The miseducation of public art: when art fail its inclusive objective**

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S20-S4 Collective action, commons and commoning : towards the emergence of new forms of territorial  
development processes?

UdL\_Room 103, August 29, 2019, 9:00 AM - 10:30 AM

In the last decade, the role of street art within the public space and their controversial relationship has been broadly investigated. European urban policy-makers increasingly utilize street art practices as planning tools to foster social change and urban renewal in peripheral areas with the aim of improving the quality of life of its inhabitants.

The shared sentiment within the academia sheds light mainly on the inclusive nature of these interventions, focusing on the successful results rather than seeing the big picture of such a complex scenario.

The present work aims to re-think on this debate extending the analysis on the harmful social impacts that artistic practices might have on local hyper-diverse communities. Urban space and its commons, when manipulated for the sake of social order and control through the work of top-down commissioned creative agents, might twist from relational goods born in its space to club goods with exclusionary effects. The commodification of public spaces in fact can lead to brutal forms of exclusion and false forms of participation.

Relying upon the analysis of national and international cases, we read an Italian case of commissioned street art that took place in an emerging peripheral multi-ethnic area, in the light of The Loss of Place Identity theory. Hence, we assess how negative spillovers, such as marginalization and social conflicts, artistic intervention deployed.

We therefore advance behavioural patterns of integration and inclusion between public art practices and local communities in culture-based regeneration initiatives that can enter and shape the discourse on local policies.

See extended abstract online.

## **The contribution of European Programs in Regional Development. The case of European Territorial Cooperation - INTERREG V-A: Greece-Cyprus**

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G21-O2 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 2:00 PM - 4:00 PM

Nowadays the need for territorial cooperation becomes more and more significant, especially among the EU Member States, which try to increase the competitiveness and their development. By identifying that necessity, EU put programs of Territorial Cooperation in place, named as INTERREG.

Since 1990, five programming periods of Interreg have succeeded. The last one is INTERREG V, which ends in 2020. In that program, the Territorial Cooperation between Greece and Cyprus is included (Interreg V-A Greece-Cyprus), which aims to support entrepreneurship and the usage of information and communication technologies in order to increase competitiveness. The program was authorised by EU, on 27 July 2015 with the executive decision No: C(2015) 5319.

In particular, the program, aims to integrate all issues, relating to the environment, either in terms of protection against risks or in terms of promotion of the natural and cultural heritage. The region which participate in that, are Northern Aegean Region, Crete Region, Southern Aegean Region and Cyprus (whole country). The data of the present abstract are collected, from sources like, the official site of European Commission, published reports and interviews from Greek and Cypriot press.

As far as the numbers are concerned, until the end of 2017, 32 projects have been allocated to the program, gathering €48.82 million, activating the 80% of its sources. It is significant to be noticed that since the revision of the program (2016), the total sources running at €64.560.486, of which €54.876.411 (85%) comes from European Regional Development Fund and €9.264.075 (15%) funded from National sources from Greece and Cyprus.

The evaluations which carry out every year, ameliorate the effectiveness of the program. According to the last evaluation, in 2017, there is scope for significant improvement in the expedition of integration, contractualisation, absorption and in certification of expenses of the projects. Cyprus reports more flexibility in projects accomplishment, thanks to the simplified procedures, in comparison with Greece. The procedures in Greece procrastinate due to the complexity of the legal framework.

At the present article, there will be displayed the European Programs which contribute to the Regional Development, as well as, the Territorial Cooperation between Greece and Cyprus will be analyzed. In particular, at the first part there are references on European Programs which boost the development and the competitiveness of European Union Member States and at the second part an extended description of the Territorial Cooperation between Greece and Cyprus, tries to approach the issue.

## **Production Possibilities and Trade in a Ricardian Economy with Public Infrastructure**

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S42-S2 Causes and Effects of Regional Integration: Development of Local Economy via Mobility  
IUT\_Room 210, August 30, 2019, 2:00 PM - 4:00 PM

In this paper, we consider a Ricardian type of economy with a public infrastructure and show that, although the production possibility frontier is convex in the creation of atmosphere type of a public intermediate good but concave in the unpaid factor type, larger is the good with more heavily dependent on the public intermediate good according to an increase in the public intermediate good supply along the production

possibility frontier in both types. Subsequently we show that a country with larger labor endowment likely exports the good more heavily dependent on public input in the creation of atmosphere case, while that country likely exports the other good in the unpaid factor case.

### **Estimation of non-use values by the general public in the Israeli Mediterranean**

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S48-S1 The Mediterranean: conflicts, ecological and economic values Time: of a changing sea environment  
MILC\_Room 409, August 30, 2019, 9:00 AM - 10:30 AM

Non-use values (NUV) are economic values that are not associated with either direct or indirect use of ecosystems. NUVs are composed of existence value (value people gain from knowing a certain feature or asset exists), bequest value (value attributed to knowing that the asset will be attainable to future generations) and altruistic value (value originating from the knowledge that other may use the asset). In order to derive NUVs for the Israeli Mediterranean the study employed a choice experiment. This valuation approach aims to elicit peoples' utility of different features of an asset (habitats within the Israeli Mediterranean). By presenting respondents choices between different 'bundles' of features with different levels associated with different price levels, the willingness to pay for the features' different levels can be obtained. The study implemented the choice experiment method and obtained a range of possible NUVs, depending on the inherent attributes of marine habitats. The resulting total NUV of the Israeli Mediterranean ranges between 223.2-594.4 million Euro per year. Compared with previous valuations of ecosystem values in the Israeli Mediterranean, the values obtained in this study are relatively high, suggesting that NUVs of the Israeli Mediterranean far outweigh other, more tangible benefits in the eyes of the Israeli general public.

### **A meta-analysis on the impact of automation and international trade on employment structure**

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G05-O2 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 2:00 PM - 4:00 PM

This meta-analysis systematizes the empirical evidence on the labor market impacts from various types of factor-biased technical change and participation in global value chains. Our evidence draws upon 1162 empirical estimates from 71 scientific articles published between 1987 and 2017. Despite the vast heterogeneity in the estimated outcomes and the weak evidence of publication bias in the relevant literature, our three-step empirical process documents how the encountered features of heterogeneity alter the likelihood for outcomes of specific sign and significance. In particular, factor-biased technical change is found to hurt industrialized labor markets more in terms of employment rather than wages, while the negative effects concentrate on low-skilled workers. In contrast, engaging in global value chains benefits skilled employees in developed countries and trade in services is associated with positive labor market outcomes compared to trade in manufacturing.

## **Mapping medication reimbursements in Belgium: socio-economical, environmental or public health issues?**

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G19-O2 Health and Environmental Issues, MILC\_Room 409, August 29, 2019, 4:30 PM - 6:00 PM

The relationship between urban living environment and health has been widely tackled in the past years (Twohig-Bennett et al., 2018). Generally, exposure and proximity to natural environments are considered to have beneficial effects on human health (Hartig et al. 1991; de Vries et al. 2003). Unfortunately, data about health are usually scarce and typically protected for privacy issues. But recent advances in data collection has led to the storage of massive amount of data on individuals, among which medication purchases. In our case study, we try to observe links between health status, surrogated by medication reimbursement data, and socio-economic and environmental factors. If some geographical analyses about such data have consequently appeared in recent scientific literature (see e.g. Wangia and Shireman, 2013), results are often not comparable and studies looking at spatial variation in medication consumption within a country are rare (Cheng et al., 2011).

In Belgium, a central agency (IMA-AIM) systematically collects and stores data on medication reimbursement across the entire country, at different administrative levels. We here isolate six medication types associated to a priori defined pathologies representing environment-associated health troubles (asthma, allergies, autoimmune diseases, depression and anxiety, dyslipidemia, and cardiovascular issues). After a first step of data cleaning and standardizing by age, the paper first presents and critically comments the choropleth maps of the different proxies. Then, we test the correlations between the selected health proxies with some standard socio-economic and environmental variables, by means of Pearson correlations, clustering and principal component analyses. Surprisingly enough, environmental and socioeconomic components are totally independent of the proxies used while all health proxies are positively correlated together whatever the sickness considered.

Our results show that medication reimbursement is not an environmentally-driven problem, but rather suggest a public health issue (health policy, education of the medical doctor, pharmaceutical commercial activities, ...). This study warns us on the use of medication data as a proxy for health issues, and to be careful in the interpretation of the results.

## **The relationship between population growth and local job opportunities for highly educated workers.**

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S26-S2 Comparing local and regional development within and between countries – what information and data is needed?

IUT\_Room 202, August 30, 2019, 2:00 PM - 4:00 PM

Many cities and regions around the world struggle with either notable population growth or decline. In this paper, we explore what may determine population change, with a particular focus on the role played by educated workers and the state of the labour market. Understanding the relationship between population growth and growth in jobs is beset by econometric problems. By using unique administrative data from municipalities in Norway covering the years from 1986 to 2010, along with careful model specification, we

are able to estimate effects which we argue are robust and causal. Our results show that the presence of educated workers and jobs for these workers is important in explaining population growth. Spatial structure and spillover effects are also shown to be important.

### **Commercial redevelopment of industrial and residential (inner) periphery of Russian metropolis, St.Petersburg, 1989-2017**

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G04-O3 Regional and Urban Development

IUT\_Room 207, August 28, 2019, 2:00 PM - 4:00 PM

Rephrasing the World Bank definition, urban redevelopment is readjustment of urban land to the new function. While some authors assume the necessity of some government authority to be involved in redevelopment process, others apply the urban regimes approach, claiming that redevelopment could be driven by different combination of forces with the leading role of either authorities, or economic actors as well as of public actors. In such combination of forces the basis for agreement could be informal as opposed to formal government planning . Changing involvement of such actors in urban redevelopment in Russia was indeed the inherent feature of post-socialist transformation after 1989. Central attention in this paper will be given to the third mentioned path-dependency factor of urban redevelopment - post-Socialist transformation.

### **Mobility simulation including autonomous vehicles: what about the urban form ?**

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S66-S1 Assessing impacts of automated driving and automated mobility

IUT\_Room 108, August 30, 2019, 11:00 AM - 1:00 PM

A study on the increasing of projects about autonomous vehicles shows that almost of research fields are concerned, from technological domains (improvement of radar and lidar technologies, AI for best choice decisions, etc...) to social sciences (acceptability for example), including economic domain or insurance and legal fields (responsibility cases). For less than 10 years, geographers and land planners have also investigated this thematic, most using simulations software. These simulations, based on theoretical cases (Fagnant and al., 2014) or on real urban territories (Spieser and al., 2014, Bösh and al., 2016), show “predictable” impacts like the decreasing of the number of cars and the growing of daily mobility, but with different rates, depending of the input scenario. Another way of investigation, still not yet explored, need to be presented: the impact on the urban form. For this reason, we purpose to build more complex scenarios combining daily mobility and residential mobility at different time steps: as predicted, the urban sprawl currently found will it continue, extending Newman and Kenworthy’s publication (Newman and Kenworthy, 1996) on the 3 ages of the city? Or the improvement of the traffic conditions provided from automated mobility which is materialized by the disappearance of the congestion and the emissions of pollutants, can it lead to a densification of the central urban spaces?.

### **The Change of Financial Behavior of Remittance-receiving individuals in Rural Indonesia**

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S41-S5 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 29, 2019, 2:00 PM - 4:00 PM

There is a growing body of literature that recognizes the importance of remittances to the development process. Apparently, a rise in remittances can lead to financial development in the recipient side. Remittances transferred through the financial institution may facilitate access and demand for further financial services from the formal financial institutions. In the case of lack of access and usage of financial services, remittance-receiving households/individuals might rely on informal channels instead of using the formal ones. Numerous studies have investigated the relationship between international migration, remittances, and financial development, however, much of the research up to now has paid too little attention to the linkage between domestic remittances, and financial inclusion. This indicates a need to understand how the dynamic of domestic migration and domestic remittances may affect financial inclusion at the micro level of society.

Our paper focuses on the domestic remittances flow and the financial behavior of the remittance-receiving individuals who stay behind in a (typically) rural area. This paper describes the possible relationship between the patterns in domestic migration destination (i.e., from a village, small town, and big city), the financial access to the formal and informal institution, financial behavior of remittance-receiving individuals in term of access and usage of financial services.

This research relies on a unique data set that is drawn from Indonesian Family Life Survey (RAND, 2014) and combined with the secondary data on the financial access to the formal bank (Indonesia Central Bank, 2015). It is hoped that this research will contribute to a deeper understanding of the linkage between domestic migration, domestic remittances and financial inclusion in the case of emerging economies such as Indonesia. Our data set provides information on how the domestic migration across the village, small town, and big city may create the remittances flow that induces financial access and usage at the household level.

### **Function follows form? Human mobility patterns in urban space.**

Dr. Marina Toger<sup>1</sup>, Dr. Jan Amcoff<sup>1</sup>, Dr. John Östh<sup>1</sup>

<sup>1</sup>Uppsala University, Uppsala, Sweden

S33-S1 Modelling place attractiveness in the era of Big and Open data

MILC\_Room 310, August 28, 2019, 11:00 AM - 1:00 PM

In many post-industrialized countries the urbanization peaked in the middle of the 20th century during, a period distinguished by sprawling urban areas and Modernist town planning. However, the urban milieus built during that period were heavily criticized already 50-60 years ago for disregarding the needs of pedestrian citizen and homogeneous use patterns. Although the planning ideals have changed, empirical knowledge on how does the urban physical and legal environment affect urban liveability is still limited. This is the focus of the present study. We use mobility data, provided by a major Swedish mobile phone operator, to discern different spatial patterns of life. Some parts of cities show mixed kinds of diurnal and weekly behaviour (quick visits, stays of several hours, or overnight), whereas others may show more homogenous patterns. Various urban environment types are detected using the density and size of parcels, land use, land cover and presence and density of amenities (retail, restaurants, entertainment, etc.) and



compared to mobility behaviours characteristic to them. The study presents correlations between urban morphology and mobility patterns of people using them.

### **A new approach to estimating interregional output multipliers using input-output data for South Korean regions**

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G10-O1 Methods in Regional Science or Urban Economics

MILC\_Room 309, August 29, 2019, 4:30 PM - 6:00 PM

The multipliers obtainable from a regional input-output (I-O) table are a valuable analytical tool, yet such tables typically must be constructed via non-survey methods. Although Flegg's location quotient (FLQ) is a method that often performs well, it is designed to estimate intraregional intermediate transactions and coefficients. The input coefficients for different regions are estimated independently and interregional coefficients are not estimated explicitly.

A dataset constructed by the Bank of Korea for all 16 South Korean regions in 2005 is one of the few survey-based full interregional I-O tables. It has data for all intersectoral transactions, both within and across regions, thereby allowing us to test some alternative theoretical approaches. Our focus is on an innovative methodological approach proposed by Jahn (2017), in which two methods of estimation, the FLQ and a gravity model, are combined in a consistent way to estimate the intraregional and interregional transactions, respectively. All regions are treated simultaneously. Furthermore, the estimated transactions are constrained to equal the national aggregates for each pair of sectors.

A novelty of our paper is its use of statistical information criteria to determine the best model for estimating output multipliers. Such criteria are relevant when the approaches being compared employ very different numbers of parameters. With the FLQ, for instance, one has a choice between pursuing a simple approach, whereby an unknown parameter  $\delta$  is held to be invariant across both sectors and regions, and more complex approaches where these assumptions are relaxed. Standard performance criteria cannot reveal whether the inclusion of extra parameters is warranted, whereas information criteria can do so. We demonstrate that, for South Korea, the best approach is to combine the FLQ with a simple trade model. Since the interregional trade flows do not seem to depend much on distances or adjacency, a gravity model is unnecessary.

### **Circular economy dynamics and their impacts on local growth. Analysis of the French case 2015 - 2018**

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S21-S1 Circularities and proximities: stakeholders, scales, ressources

UdL\_Room 106, August 28, 2019, 11:00 AM - 1:00 PM

The territories are undergoing major upheavals in terms of changes in production models, territorial competition and pressure on local authorities' budgets. The emerging circular economy model is proposed as a sustainable response that can create territorial development. The circular economy is perceived (i) as a lever for technological, social and organizational innovation and (ii) a new model of design and manufacture of high value-added products that generates new activities and provides jobs and local growth. However,

scientific knowledge on the territorial externalities of economic activities associated with the circular economy is not yet equal to the current challenges of sustainable development.

The objective of this research is to have a better understanding of the emergence of circular economy projects and how do they drive the local economy. More specifically, we seek (i) to analyse the spatial concentration of employment in the circular economy, and (ii) to assess the impact of circular economy companies on local growth in employment areas (local territorial unit in France).

First, the geographical distribution of the growth of the circular economy and the existence of possible spatial autocorrelation are observed. Then, we estimate spatial autocorrelation coefficients (at both levels, global and local) in order to analyse the spatial concentration of the circular economy in France. Finally, using spatial econometrics, we explain the factors that contribute to the local growth of the value added between 2008 and 2015 in the circular economy, based on demographic, economic and geographical explanatory variables.

### **The evolution of economic clusters through the lenses of web archives: the case of Shoreditch in London**

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S03-S1 Engaging with the Digital World: the effects for society, places and individuals  
IUT\_Room 404, August 29, 2019, 2:00 PM - 4:00 PM

This paper proposes a new methodological approach to identify economic clusters and their evolution over space and time, which builds upon recent developments in data science. We employ an under-used open source of commercial, geolocated and archived webpages during the period 2000-2012. We interrogate these data using data science techniques to build postcode-level, time-varying classifications of economic activities using text data from individual webpages. We apply this method to take a fresh look at an iconic London neighbourhood – Shoreditch – that is rich in technology and creative industries, and has become a leading digital and creative cluster over the past two decades (Hutton 2008, Pratt 2009, Harris 2012, Foord 2013, Martins 2015). Our approach tackles a number of problems inherent in empirical analysis of clusters: backward-looking industrial classifications, reliance on administrative geographies and low data frequency (Nathan and Rosso 2015, OECD 2013, Duranton and Overman 2005). As such, the paper aims to add to the limited empirical literature (Ter Wal and Boschma 2011; Balland, Boschma, and Frenken 2015; Delgado, Porter, and Stern 2015), which moves beyond a pre-determined understanding of economic clusters in spatial, temporal and technological terms (Catini et al. 2015). By allowing us to look flexibly at how co-located economic activities shift over time, our method also provides cleaner links back to theory, especially evolutionary frameworks, and questions of industry specialisation, diversity and branching.

### **La gouvernance territoriale au prisme du concept de Système Alimentaire du Milieu**

Dr. Laurent Trognon<sup>1</sup>

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S23-S1 Territorial and place-based governance, (new) processes for local coordination  
IUT\_Room 303, August 28, 2019, 4:30 PM - 6:00 PM

Un territoire, en tant qu'espace approprié par des acteurs, est un concept complexe qui peut rendre compte à la fois d'un objet que l'on peut gérer et d'une entité apprenante capable de se penser et de concevoir une stratégie. Dans les deux cas, acteurs, ressources, activités et politiques sont en interaction. La gouvernance

territoriale est ce qui va permettre les coordinations d'acteurs et d'échelles, mais aussi d'objets et de projets. Cette coordination peut être pensée au service d'une stratégie construite ex ante (territoire objet) ou co-construite chemin faisant par les acteurs (entité apprenante). Dans tous les cas, une bonne gouvernance se définit relativement aux bénéficiaires de celle-ci. Au sein d'un territoire des secteurs économiques se composent, se distinguent et se combinent. La gouvernance territoriale peut concerner un, plusieurs ou l'ensemble de ses secteurs. À proprement parler la dimension territoriale d'une telle gouvernance suppose un minimum d'ancrage local des acteurs et des problématiques traitées. Cependant la dimension spatiale, territoriale et locale, bien que souvent délimitée par des périmètres administratifs, peut être émergente et relativement floue, c'est au moins l'idée d'un « quelque part ».

Depuis des décennies des travaux de recherche sont menés sur les systèmes alimentaires, appréhendés à partir des concepts de filières, terroir, circuits courts, système alimentaire localisé, système alimentaire territorial, et dans une perspective alternative à l'offre d'une « food from nowhere » (Campbell, 2009). Le concept de système alimentaire du milieu (SYAM) (objet du projet PSDR éponyme, 2016-2019) a ceci d'innovant qu'il se veut extrêmement intégrateur des attentes des acteurs publics et privés, du consommateur au producteur, de l'élu ou de l'association à l'entrepreneur ; il vise à articuler la triple performance voulue par le développement durable et, pour cela, repose sur et s'inscrit dans une gouvernance territorial.

Afin de contribuer aux objectifs de la session spéciale, cette communication présentera tout d'abord le concept de SYAM et l'illustrera d'un cas mettant en évidence les mécanismes de gouvernance. Il le mettra en relation avec celui d'écosystème d'affaires et son extension comme écosystème territorial (territoire apprenant). Le rôle crucial de l'acteur pivot sera analysé et discuté, ainsi que les dispositifs de coordination d'une chaîne de valeurs auxquelles sont sensibles les bénéficiaires de la gouvernance. Enfin, après avoir montré le caractère militant du concept de SYAM, nous montrerons comment son appropriation et sa mobilisation par les acteurs donnent sens à leur action et à la gouvernance territoriale.

## **Agglomeration economies and technical efficiency of European regions**

**Prof. Theodore Tsekeris<sup>1</sup>**, Dr. Sotiris Papaioannou<sup>1</sup>

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G08-O1 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 11:00 AM - 1:00 PM

The enhancement of productivity is regarded as crucial for the long-term sustainable development of an economy. Productivity growth in Europe presents significant variations among countries as well as between regions, with evident implications for the processes of convergence and cohesion. This paper investigates how different types of agglomeration economies, such as the density and diversity of local markets and land uses, the specialisation and the market access, influence the efficiency and productivity disparities across EU regions. It encompasses a rich dataset for 245 regions at the NUTS-2 level, spanning the decade 2007-2016. In contrast with other approaches considering the measure of total factor productivity, the present methodology relies on a regional production function which is simultaneously estimated with an inefficiency equation, using a two-stage econometric model.

The findings show the existence of considerable disparities in the level of technical efficiency across EU regions. In particular, they denote the significant positive impact of the concentration of economic activity and land uses, the total (external and internal) market potential, and the human capital, defined as the percentage of hours worked by people with tertiary education, on regional efficiency. These results suggest the productivity-enhancing role of geographical proximity, spatial spillovers, transport improvements and accessibility. In addition, they indicate the positive impact that institutions related to land use planning may have on reducing regional inefficiencies. Furthermore, they stress the significant influence of country-specific factors, such as national macroeconomic policies, as well as region-invariant time-specific factors on

the technical efficiency of EU regions. The study findings can provide valuable insights into addressing core-periphery disparities in efficiency and failures in the spatial planning system, and deploying active labour, education and R&D policies to strengthen the productivity of the lagging EU regions.

### **Cohesion policy and income inequality: empirical evidence from Greece**

Professor Yannis Psycharis<sup>1</sup>, **Associate Professor Vassilis Tselios**<sup>2</sup>, PhD Candidate Panayotis Panatzis<sup>1</sup>  
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S55-S1 The EU Cohesion Policy after 2020 – How to achieve faster and more impactful spending where it is needed the most?

IUT\_Room 303, August 30, 2019, 9:00 AM - 10:30 AM

Inclusive growth has become one of the main concerns of contemporary economic policy. Based on statistical evidence, economic growth does not necessarily create opportunities for all segments of the population and prosperity is usually fairly unequally distributed across society. Furthermore, due to the recent economic recession not only personal and households income have been reduced but also income inequality has been increased. As a result, the issue of inclusive growth has been placed at the forefront of economic analysis and public policy. Inclusiveness has been one of the main policy priorities of the European Union for the programming period 1994-2020 and this will be extended to the new programming period 2021-2027.

This paper sets out to examine empirically the statistical association/relatedness between cohesion policy and income inequality in Greece during the period 2000-2015. The research question under examination is whether the EU cohesion funds have contributed to the reduction of inter-personal income inequality within regions in Greece or not. Analysis is based on a novel dataset which combines two sets of statistical data. The first set includes data regarding the annual expenditures of co-financed EU funds at NUTS II and NUTS III geographical levels in Greece. The second set includes data regarding the statistical estimation of declared income inequality at the NUTS II and NUTS III geographical levels in Greece throughout the study period under consideration.

Analysis is based on an econometric model and apart from the cohesion policy expenditures and income inequality indicators it utilizes a large number of control variables such as demographic, economic and geographical ones. The analysis which is covering the time periods before and during the economic crisis as well as three different programming periods 2000-2006, 2007-2013, and 2014-2020 provides evidence that cohesion funds have contributed to reduction of income inequality in the Greek regions. The paper concludes with some policy proposals regarding the consideration of inclusiveness as a key factor of the EU cohesion policy for the new programming period 2021-2027.

### **Business cycle asymmetries and idiosyncratic components of the Greek regions**

Dr Ioannis Panteladis<sup>2</sup>, **Dr. Maria Tsiapa**<sup>1</sup>, Dr Dimitris Kallioras<sup>1</sup>  
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G04-O5 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 4:30 PM - 6:00 PM

This paper investigates the business cycle asymmetries of Greece focusing on the route and the characteristics of regions that are lagging behind with an idiosyncratic and eventually a persistent behaviour. Aiming to disentangle the main components and dynamics that have influenced by several (systemically or non-systemically) ways the Greek regions, the analysis focuses on the NUTSIII level of

regions and covers a long time of period (1980-2016) separated it in four sub-periods (1981-1991, 1992-2000, 2001-2007 and 2008-2016) based on substantial and key developments of the economy (introduction in the EU, integration in the Single Market, adaptation of the euro and experience of the deep and protracted economic crisis).

First, it is analysed the degree of business cycle synchronisation of Greek regions using the Hodrick-Prescott filter and it is estimated the regions' volatility and persistence. In the attempt of capturing the part of regional fluctuations that neither explained by the movements of the national cycle nor by the past behaviour of the regional cycle itself, it is estimated afterwards the idiosyncratic component of each region by a VAR model that uses components of the national cycle and the regional cycle itself with specific time lags. In the next stage, the analysis examines the characteristics of those regions with the higher idiosyncratic component in their cycle. For this reason, a spatial panel model is constructed so as to evaluate whether and how specific economic, structural, technological, geographical or time-specific factors are correlated with that type of regions. Moreover, it is investigated whether regions with important idiosyncratic behaviour have common features with "sheltered economies" (Rodriguez Pose and Fratesi, 2006), which are associated with obsolete and traditional economic activities. The results of the analysis help to enrich the picture of the less developed regions in Greece associating regions with low growth rates (and therefore low level of resilience), idiosyncratic characteristics and sheltered economy in a long time period that reasonably entails different phases of the economy of each region.

### **Application of geographical topic model to metropolitan area in japan**

**Prof. Makoto Tsukai**<sup>1</sup>, Ms. Satoko Ohno<sup>2</sup>, Mr. Yuta Tsukano<sup>3</sup>

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G03-R1 Big Data and Regional Science  
IUT\_Room 404, August 28, 2019, 2:00 PM - 4:00 PM

In Japan, the expanded suburban area has often lower density, suffering from inefficient infrastructure performance with higher maintenance cost. In order to induce proper land use, the necessity to understand the structure of metropolitan area is increased.

Understanding the structure of metropolitan area with its dynamics requires the comprehensive analysis not only in built environment, but also demographic, industrial or commercial characteristics.

This study purposes to clarify the applicability of topic model to geographical characteristics, named geographic topic model. Using the proposed model, Kitakyuusyu and Fukuoka metropolitan areas are analyzed to compare the geographical characteristics of both cities and its change between two cross sections.

Topic model is used for a topic estimation problem from the documents with huge number of words. The advantage of output by topic model over by the conventional factor analysis is positive estimation of parameters, while negative estimates often appears in conventional approaches. Positive estimates of parameters make much easier interpretation for topic, and mesh to topic relationship is also clear since spatial aggregation of topic is possible.

The input information to topic model is called Bag-of-Words (BOW), which counts the number of vocabulary for each document. This study proposes to discretize the attribute distribution by using multiple dummy variables, in order to make BOW dataset.

The BOW in this study consists of 34 attributes collected form national census, economic census and office and company statistics. The number of meshes in the target area is totally 2113 for a cross section, by dropping unused area. In order to common topics in two cross sections, the datasets in 2000 and 2010 are stacked, so then totally 4226 samples are inputted. The comparison of spatial distribution of topics showed

that in Fukuoka, CBD area is expanded, and the suburban areas are dynamically developed. On the other hand in Kitakyusyu, CBD area becomes small and low-density suburban area is increased. In terms of public transport access, Fukuoka can successfully attract the agglomeration around the stations, while Kitakyuusyu failed to attract the agglomeration, but makes low density land use around the station. Therefore, the application of geographical topic model, the performance of proposed model was fairly good.

### **Aggregate productivity and its local determinants: A missing spatial dimension in productivity research**

Ms Alexandra Tsvetkova<sup>1</sup>, Mr Nikolaos Terzidis<sup>2</sup>, Mr Dylan Jong<sup>2</sup>

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S69-S4 The spatial dimension of productivity (OECD Spatial Productivity Lab Special Session)  
IUT\_Room 101, August 29, 2019, 9:00 AM - 10:30 AM

Productivity, the efficiency of input conversion into output, is the main determinant of living standards. More productive economies have greater ability to support and enhance well-being of their citizens via higher incomes, better infrastructure, more services and other means. The drivers of productivity, and its effects on a range of social and economic outcomes, are the focus of a voluminous, long-standing and well-developed research literature. Despite the vast scholarly attention paid to productivity, however, it is mostly studied within industries and firms. The spatial dimension of the phenomenon is underdeveloped. In this paper we first provide an overview of the industry-level productivity research identifying a range of important determinants of productivity growth across countries and sectors/industries. We then demonstrate that these determinants themselves are shaped (at least to a degree) by subnational (regional and local) factors. We summarize regional science research that studies each of the productivity determinants identified in the first step and conclude by highlighting the importance of spatial dimension in the study of aggregate productivity growth.

### **Tea for Two: Language and Bilateral Trade with China**

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S24-S1 Neo-Weberian Approaches to China: Cultural Attitudes and Economic Development  
IUT\_Room 415, August 29, 2019, 4:30 PM - 6:00 PM

Trade routes are the reason why half the countries in the world call their herbal brew 'tea' and the other half 'chai' (Saber, 2010; World Atlas of Language Structures, 2019). Yet, it is not clear whether the spread of the word tea indicates the fashion that drove the consumption and consequently the trade with tea, or whether the intensity of the trade is simply reflected in the intensity of use of the word 'tea'. The question of causality between language frequency and volumes of bilateral trade is explored in this paper from the point of view of narrative economics and Culture-Based Development, exploring the role of the cultural discourse in the economic process. Using linguistic data from Google n-grams (a digitalized 5 percent sample of world libraries) spreading over the period 1821 – 2008 and data on bilateral trade with China from the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII, Paris) for the same period, we apply reverse causality test on whether the ranking of the word tea in a local language is influenced by flows of trade with China. Next, we use factor analysis for all Chinese foreign words in a particular language and we infer the frequency of this factor variable to explain the relevant trade flows. Results from a pooled cross section with time and country fixed effects and panel data analysis are strongly consistent. Our findings suggest that the use of the word 'tea' is universally impacted not by the direct flows of trade with China, but

by the overall size of the Chinese economy, independent of the size of the counterpart economy trading with China. Also, while the flows do not affect the change in the frequency of the use of the word 'tea', the use of the word 'tea' does predict both trade inflows and outflows with China. Moreover, the lagged value of the frequency of use of the word 'tea' predicts the trade flows too. In short, the creation of cultural discourse is endogenous to economic power, yet, the cultural discourse itself amplifies the trade flows with the bigger economy. We interpreted these findings as narrative economics evidence for the endogeneity of the cultural discourse and its impact on bilateral economic trade.

### **UK Witches: Signalling for Locally Under-Rewarded Human Capital**

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G15-O3 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 29, 2019, 9:00 AM - 10:30 AM

Religion has been tackled in economics mostly from the supply side. It has been contested as either an exogenous cultural attitude that determines economic productivity (Weberian perspective) or as an endogenous narrative created to enhance the power of the institutions over the disadvantaged individuals – i.e. religion as the 'opium of the people' (Marxian perspective). But considerably little has been said in economics about the demand for religion and especially what the aggregate demand for religion might stand for. Moreover, religion was thought of as a dwindling down institution itself, since developed societies were presumably growing less religious. The current economic crisis might show the demand side of religion in a different colour with the upsurge of religiosity across the West. At this background, the current paper poses two questions: (i) what socio-economic factors drive the demand for religiosity and superstitious belief on individual level; and (ii) what is increased presence of religiosity and superstitious beliefs signaling for local development on aggregate level? To approach these questions empirically, over 5mln individual observations (i.e. the 10% sample) from the UK 2011 Census data is used. More than 60,000 people in this census self-identified as witches when they were asked to specify freely their religious denomination. Clearly, the UK has a historic predisposition for eventual cultural persistence in witchcraft, as an expression of the free-spirited female. However, anecdotal evidence points that most modern witches in the UK are usually individuals who have experienced negative shocks in their personal socio-economic development and are often stigmatized as mental health cases. Propensity score matching and multi-level modelling are employed. On individual level, we find that the demand for superstitious beliefs is a psychological mechanism for handling relative deprivation. On regional level, higher percentage of superstitious beliefs is associated with higher levels of economic segregation and inequality.

### **Mixed methods approach in regional science - a case study on regional needs -**

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G10-O4 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 30, 2019, 2:00 PM - 4:00 PM

The analysis of EU citizens perceptions regarding the regional development and effectiveness of European programs and/or institutions in dealing with regional issues was performed based on quantitative methods. On the other hand, the regional experts/ practitioners point of views regarding the above-mentioned regional aspects was mostly analysed using qualitative methods. So far, the two regional actors' visions

were separately analysed, their integration being not at all an easy task having in view the methodological differences and limitations of each data collection methods.

The general objective of the paper is to propose an innovative approach in analysing the citizens' and practitioners' views on regional issues in order to make the two visions integrable and comparable. This methodological option belongs to the mixed methods design that makes possible to combine the qualitative and quantitative data on the same research topics into the same study. The methodological scheme proposed in our paper is based on convergence model from the mixed model triangulation design. This methodological approach allows, in a first stage of research, to collect and analyse simultaneously and separately the quantitative and qualitative data, using a common ground regarding the research question/topic. In the second phase of research, the two results are converged (by comparing and contrasting the different findings) during the interpretation phase. Contextualization, that gives a meaning of the obtained results with reference to the specific and particular context, is used for interpreting of both qualitative and quantitative data in order to make them suitable for being comparable.

Viability of this methodological approach was validated into a case-study regarding the citizens' and practitioners' views on EU Cohesion Policy. The case-study analysis was conducted at the level of a representative sample of European NUTS II regions.

The comparative analysis highlighted the convergence and divergence points between citizens and practitioners regarding the public intervention needs through Cohesion Policy and evaluation of the effectiveness of these interventions, thus contributing to a better understanding of the general perception of the EU by the large public.

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### **Regional smartness and economic growth convergence: A Romanian case study**

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G08-O2 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 28, 2019, 2:00 PM - 4:00 PM

Whilst recent research has had a keen focus on the concept of a Smart City, less focus has been given to "smartness" in the regional context. Under the umbrella of the European Commission 2020 Strategy, smart specialization is a central pillar in of Cohesion Policy which is based on the principle of Smart Growth (Regional Policy Contributing to Smart Growth in Europe [COM(2010)553]). Accordingly, European regions are called to identify the sectors, technological domains, and major areas of likely competitive advantage to focus their regional policies (Mc Cann & Ortega-Argilés, 2015). Firstly, this paper aims to construct a unique measure "smartness" at regional (NUTS II) level using Romania, as one of the most rural countries of the EU, as a case study. Secondly, this paper then tests the regions' capacity to deliver on economic growth convergence. Here there is a particular focus on the development regions in Romania, which typically have a weak negotiation position in terms of regional design and implementation of Cohesion Policy. Results show that Romania's capital city NUTS II region, Bucuresti, is the "smartest". Western Romania is considered a medium level of smartness and the lowest smartest is seen in the eastern and southern Romanian regions.



We find a statistically significant correlation between regional smartness and the ability of regional economies to bridge the gaps compared to the EU average. These results provide evidence to support the notion that enhancing the underlying indicators of 'smartness' would support a region's economic resilience and development.

Acknowledgment: paper is supported by Horizon 2020 research and innovation programme under the project: Perception and Evaluation of Regional and Cohesion Policies by Europeans and Identification with the Values of Europe (PERCEIVE).

### **Rethinking place-based strategies for integrated development: the challenge of institutional thickness**

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S13-S1 Mainstreaming Smart Specialisation across European Union policies: challenges, opportunities and tools  
UdL\_Room 106, August 30, 2019, 2:00 PM - 4:00 PM

Regional innovation ecosystems or place-based strategies for integrated development are gaining currency as key aspects of research, innovation and increasingly industrial policy. However, these systems need the 'boundary spanners', the 'orchestrators' and 'conductors' to develop the ecosystem. We know that these roles should be found in triple or quadruple helix organisations but there is still an issue that there is no career path, often no job title for these key actors in universities or industry and local and regional government. Is smart specialisation the process that can identify and valorise these roles?.

### **Unconferences and Hackathons as Platforms for Innovation Competencies Enhancement**

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G07-O4 Innovation and Regional Development  
UdL\_Room 104, August 30, 2019, 9:00 AM - 10:30 AM

In recent years the popularity of informal entrepreneurial events such as hackathons, meetups and unconferences persists and grows beyond any specific industry, sector or geographical area. While it is generally acknowledged that informal entrepreneurial events have a significant role in structuring and shaping the innovation ecosystem, only limited research has focused on such new methods capable of enhancing knowledge exposition and people interaction outside the firm boundaries. Notably, scant research has been devoted to assessing HOW, and in WHAT WAYS, these events impact innovation ecosystems.

The study addresses this research lacuna by showing the impact of informal entrepreneurial events on their participants and subsequently the entire innovation ecosystem. We do so by systematically exploring and comparing the impact of two distinctive and predominant informal entrepreneurial events, on the innovation ecosystem: (i) unconferences, which represent an unstructured and open-format events; and (ii) hackathons that represent a relatively structured, competitive and problem-focused events. Both provide a platform for accomplishing two main processes recognized as affecting the innovation process and innovation ecosystems —knowledge sharing and connectivity between diverse crowds.

The study uses a mixed methods research design. It starts with exploratory research to open a window into the topic of informal entrepreneurial events as enablers of innovation capabilities enhancement. The study then continues with a quantitative research to test hypotheses regarding the mechanism of informal entrepreneurial events and the apparent added value generated by such events. Ultimately, a conceptual model demonstrating the impact of informal entrepreneurial events will be presented.

This study makes several potential contributions: (i) it illuminates the particular contribution of informal entrepreneurial events to the connectivity and sustainability of innovation ecosystems, beyond specific industrial, sectorial and institutional boundaries; (ii) it redirects research attention to a category of significant actors, namely the individuals who constitute the micro foundations of the innovation ecosystem; and (iii) beyond illuminating several theoretical aspects, this analysis is of value to organizations and institutions that seek to influence the innovation competencies of their employees and to policy makers who wish to influence the field of innovation generally.

### **The Role of Carpooling in enhancing connectivity for small towns across Northern England**

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S31-S1 Carpooling for daily trips  
IUT\_Room 103, August 30, 2019, 2:00 PM - 4:00 PM

Much recent UK transport policy discussion has focused on supporting economic growth by enhancing the public transport connectivity of towns and cities at a regional level. This has manifested itself in regional economic development initiatives such as the 'Northern Powerhouse' and its supporting Strategic Transport Plan (Transport for the North, 2019). In addition, the widespread regionalisation of activities in sectors such as health service delivery, education and non-food retail has increased the importance of delivering effective public transport connectivity not only within but between urban spaces. However, much of the policy discussion has focused on major centres and large passenger flows. This is to the detriment of smaller urban communities and rural areas, which often face the challenges of low population densities and low levels of demand (Nuttley, 2003). Existing practises of family support in sharing journeys and greater penetration of smartphone technology-enabled mobility concepts (e.g. Uber, Liftshare, demand-responsive transport (DRT) and Mobility as a Service (Maas)) may open up new connectivity possibilities (Mulley and Nelson, 2009) in such areas.

The aim of this paper is to look at the potential for technology-enabled carpooling for small towns as part of the toolkit for regional connectivity within the North of England. The paper explores the scope of carpooling for non-commuting travel for small urban communities in the North of England. It also investigates the scope for promoting technology-enabled carpooling solutions as a way of developing community-based solutions to regional connectivity for particular inter-urban connections between smaller towns and major centres.

This paper identifies a number of small urban areas across Northern England where public transport connectivity to services such as hospitals and major shopping centres is considerably poorer than by car. Through case study research in such areas, it highlights the impact of the regionalisation of service delivery. It identifies key roles played by people, both within family networks and amongst community and public-sector organisations, who act as 'intermediaries' in organising and co-ordinating carpooling. The paper also highlights the importance of trust in informing perceptions of the security of carpooling. It also identifies the

continuing challenge of online connectivity for households within more rural locations as a factor affecting technology-enabled approaches to carpooling. Finally, the paper identifies areas for further understanding of the nature of regional connectivity of small urban areas and for understanding the potential for technology-enabled shared mobility solutions in the context of small across the UK.

### **Spatial analysis of commercial services in Polish towns and rural areas**

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S49-S1 The retail chains development and changes in service patterns in small towns and rural areas  
IUT\_Room 203, August 30, 2019, 2:00 PM - 4:00 PM

Trade is the subject of interest of many areas of science, such as geography, economics, marketing, sociology or urban planning. In many countries in Europe and the USA studies of trade usually focus on location of commercial outlets in urban space, accessibility (time, cost) of trade for customer, selection of assortment offer and innovations in trade. Recent decade of spatial studies on trade in Poland concerns mainly new large-selling area formats and importance of trade in development of suburbanisation process and appropriation of public space by new trade formats.

The aim of the article is to identify the main rightnesses of the locations of commercial and service buildings in Polish towns and rural areas and to determine the percentage of population living in areas with difficult access to the trade. Conducted statistical and spatial analysis with the use of information obtained from Database of Topographic Objects is a method of diagnosis of accessibility that has not been applied before for its entire area of Poland and constitute the introduction for further in-depth studies in this sphere. Commercial and service-providing activity is usually located according to market criteria and takes into consideration the size of settlement unit, economic and financial situation, transport conditions and residents' preferences. Therefore, in Poland, yet not only there, the largest cities and agglomerations offer the best conditions for development of commercial and service providing chains. The assumption is confirmed by the results of conducted statistical and spatial analysis which shows that over 30% buildings of commercial and service-providing purpose are located in the largest cities and in municipalities forming the heart of urban functional areas in the capital cities of voivodeships. According to classical theory of services, location and distribution of individual categories of goods is based on the principle of hierarchy . Distribution of commercial services in Poland is highly correlated with the distribution of settlement and transport network, as well as economic (income) conditions in the country. Presented results of statistical and spatial analysis constitute the introduction for further in-depth studies in this sphere.

### **Discount chains and changes in service patterns in small towns in Poland**

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S49-S1 The retail chains development and changes in service patterns in small towns and rural areas  
IUT\_Room 203, August 30, 2019, 2:00 PM - 4:00 PM

Retail trade and services are becoming the most dynamically developing sector of non-agricultural activity in Polish in small towns and rural areas. State-owned and cooperative stores have been closed down and they were replaced mostly by private stores. There are more and more commercial outlets of various formats, including supermarket chains, discount stores and integrated chains. Despite growing number of modern retail trade formats traditional small-format, often referred to as local market is also really important. New trading posts in small towns and rural areas are mainly located in the zones of influence of larger cities. They affect many changes of spatial, social and economic character. Small towns and rural areas surrounding

them more and more frequently start to compete for further retail trade investments while noticing lots of benefits and costs of this process. Dynamics of changes in rural areas can be observed in frequent occurrence of discount chains in recent years. Investors of discount, supermarket and integrated stores recognise the possibilities of development not only in large cities and in rural areas.

Appearing in small towns and rural areas, discount and supermarket chains are in competition with local shops and local producers.

The aim of the article is to show the scale of new retail investment in small towns and rural areas in Poland. Research devoted to this field is important from the point of view of choosing the location of new investments related to discount chains and of the strategy for the development of small towns and rural areas. Identification of consequences of the operation of discount chains in chosen in rural areas and in small towns can impact the verification of the policy adopted by local authorities in relation to spatial planning and forming the functional structure.

Identification of consequences of the operation of modern retail formats in chosen in rural areas and in small towns can impact the verification of the policy adopted by local authorities in relation to spatial planning and forming the functional structure of the space [Brunetta, Caldarice 2016]. It will result in more conscious (rational) decisions in terms of localising new discounts, which will reduce the number of local conflicts related to the location of such facilities.

### **Migration Diversity and House Prices – Evidence from Sweden**

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S36-S1 Real Estate and the Development of Cities and Regions (ERES Special Session)  
IUT\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

International migration flows into Sweden have been significant over the past few decades, but the nature of flows has changed over the years, with arrivals including waves of refugee flows from Chile, the Balkan countries, and Asia, as well as labour migration from Northern and Central Europe. This paper examines the impact of different forms of international and internal migration on housing markets in Sweden, looking primarily at impacts on house prices. The data covers the period 2000-2015, and 284 municipalities. Our analysis considers regional differences in the impact of migration flows on house prices, and disentangles the impact arising from different types of migration, including internal migration within Sweden. Our findings suggest migration is generally positively associated with house price increases, but the results reveal stark regional differences in impacts on housing in different parts of the country. House prices in major cities appear to benefit most from international migration with internal migration having little impact, while in smaller urban areas we see greater house price increases from internal migration, with international migration having little effect. Further, migrants with different reasons for migration also have dissimilar impacts on different housing market segments, with refugee migrants having a larger impact than expected in some cases.

### **Potential gains from mergers: a case of water supply businesses in Japan**

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G24-O4 Empirical Methods in Regional and Urban Analysis  
MILC\_Room 308, August 29, 2019, 9:00 AM - 10:30 AM

The Japanese water industry is facing a transitional period reflecting changes in populations, natural disasters, and the ageing water pipelines and facilities etcetera. The Ministry of Health, Labour and Welfare, which is the regulatory agency for the water supply businesses in Japan, revised the Waterworks Act in December 2018 to strengthen the foundations of the water utility management, and then promotion of further wide-area consolidation was raised as one of the important policy directions. The purpose of this article is to analyze potential merger gains among the Japanese water supply businesses. A DEA based procedure is applied to tackle this issue and 141 observations in Tokai-area (Gif, Aichi, Shizuoka and Mie prefecture) were used for this analysis. The obtained results are as follows: (1) Efficiency score tends to be one for relatively smaller water supply business; (2) on five years average, there are potential merger gains in thirty one merger cases out of fifty six; (3) especially, efficiency gain tends to appear in the case of mergers with very small water supply business with its employee number is one.

### **Local product-service innovation systems: What type of KIBS contributes most to local manufacturing performance?**

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S10-S1 Territorial Servitization  
IUT\_Room 402, August 28, 2019, 2:00 PM - 4:00 PM

Rather than local industrial specialization, the local hybrid value chains composed of a diverse set of complementary product and service providers are increasingly perceived to be more adequate for developing local product-service innovation systems (Lafuente et al., 2018). In such an innovation ecosystem, the role of indigenous knowledge-intensive service provision is key where knowledge-intensive business service firms (KIBS) have been found to be crucial for the renaissance of local industry (Horváth & Rabetino, 2018). Consequently, value-adding industrial innovation is likely to vary according to the functions of the value chain that are readily accessible locally.

Service provision is crucially important for the innovation capabilities of local industry in the most knowledge-intensive stages of the value chain. KIBS have been categorized into two main groups, technology-based KIBS (T-KIBS) and professional-based KIBS (P-KIBS) (Doloreux and Shearmur, 2010). T-KIBS tend to used complex technologies, bare higher innovation investments and depend to a great extent of the creation, absorption and distribution of knowledge. P-KIBS, on the other hand, are based on professional services and support activities that depend more on expertise. The exclusivity of such expertise is often the source of a P-KIBS's competitiveness, and therefore these firms tend to be less prone to transfer their knowledge to other local firms.

The research objective of the study presented in this paper is therefore to identify whether the positive effect of KIBS on the contribution of manufacturing firms to the local economy is stronger among T-KIBS, as compared to P-KIBS.

To reach this objective, Spatial Durbin Models based on spatial diagnostic tests are applied to data from two separate sources. Data coming from the Regional Entrepreneurship and Development Index (REDI) for the years 2012-2014 is complemented by secondary Eurostat data on the regional economic and industrial performance across Europe.

The results of the study suggest that territorial servitization processes are taking place in many EU regions (Lafuente et al., 2017). The territorial presence of an active hybrid value chain composed of a mixture of industrial and KIBS firms is associated with greater average manufacturing GVA. Therefore, the local presence of KIBS firms pays-off for manufacturers and the territorial product-service innovation system. However, when separating t-KIBS and p-KIBS, regional benefits are only found for t-KIBS businesses.

### **Sectorial productivity linkages through Brazilian economic structure**

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G08-O6 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 4:30 PM - 6:00 PM

The productivity is a crucial and central theme on economic development debate. It is a key factor that may increase the international competitiveness and drive a long-term economic growth. However, the effects of productivity gains are not homogeneous. The sectorial productivity gains may impact the economy in a different way.

Thus, this paper aims to analyze the sectorial productivity spillover effect in the Brazilian economy. In order to reach this aim, we used an applied general equilibrium model calibrated to the Brazilian economy for 2010 and 2015. Our Computable General Equilibrium (CGE) model has its analytical and functional structure based on the ORANI-G (a Generic Single-Country CGE Model). The numerical structure is calibrated based on the Brazilian System of National Accounts (SNA) provided by the Brazilian Institute of Geography and Statistics (IBGE), which had allowed us to consider 68 activities and 128 products.

In order to map the sectorial productivity spillover effect in the Brazilian economy, we had considered a homogeneous increase in the sectorial productivity by 1%. The productivity increase has been implemented by sector separately in order to isolated the effect of each of them. Furthermore, we had considered two years, 2010 and 2015, to capture the effect of the economic downturn in Brazil during the period.

We contribute to the literature and the policy debate through a prospective study able to create a background about the sectorial productivity in Brazil and their heterogeneous spillover effects in the economy. Our results may indicate strategies of investment that may boost the Brazilian economy, since it brings some potential effects on key macroeconomic and sectorial variables. In other words, by the map of the sectorial productivity spillover effect, we had pointed out those sectors that has greater potential to affect the economy as result of a productivity increase.

### **Global value chains in the biotechnology market: an assessment of Russian companies**

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The study examines the creation of global value chains in the biopharmaceutical sector of Russia in general and in Siberian companies in particular. Problems are studied at all stages of research, production and sales cycles. The degree of incorporation of Siberian biotechnology companies into global value chains is analyzed. Survey results showed that domestic companies are poorly embedded in global value chains. As a rule, in the markets of "red" biotechnologies it is the import of primary highly purified / low-purified substances, depending on the sphere of use in the final product and the export of high-tech services in the field of R & D. The weak link of our market in GVC is engineering and distribution. In the markets of "green" biotechnology, in which one can identify segments of genetic engineering (breeding new plant varieties, GM crops), biotechnologies for livestock and plant growing, high competitiveness and export potential have so far formed only in the market of biological plant protection products. However, the pace of growth is far behind the world. This gap is due to several factors: high supply of plant protection chemicals from global corporations, difficulties in registering their own developed drugs, limited financial resources, lack of government funding and support measures.

### **Cross-border commuting between neighbouring EU-countries**

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S41-S2 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 28, 2019, 2:00 PM - 4:00 PM

In a dynamic labour market, a high degree of labour mobility is desirable to help employment adjust favourably to changing demand conditions. An inefficient allocation of labour resources may negatively affect the longer-term employment level and growth rate of potential economic output and, in the short run, limit the pace at which an economy can grow. Therefore, the free movement of labour between countries constitutes still one of the central principles of the EU and is an important component of the completion of the single market. As far as allocation of labour resources is concerned, European border regions are particularly vulnerable. Often they are located in peripheral parts of the country where they are not very well connected to the national urban and economic centres. To achieve more cooperation and integration, economic growth and prosperity, cross-border cooperation and the possibilities of cross-border commuting become a serious option to improve the allocation of labour and the regional economic situation in border regions in European countries. This is the first major analysis of cross-border commuting between European countries. A model of cross-border commuting was developed and estimated for EU-countries and Switzerland for 1998-2016. Commuting is determined by the situation in both living and working countries. We find that (i) real hourly wages, (ii) the share of highways, (iii) the unemployment rate (iv) the distance between EU-countries and (v) a common language determine total EU-cross-border commuting and commuting by gender, education and age.

### **Losing Ground? On Sinkhole Collapses and House Prices**

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S36-S1 Real Estate and the Development of Cities and Regions (ERES Special Session)

IUT\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

Sinkholes are a natural hazard of national scope. The repair of real estate, infrastructure and nature represents a significant cost for local governments. Moreover, the unpredictable nature of sinkholes has important implications on the demand for housing. This study investigates the short- and long-term impact of sinkhole collapses on local house prices. We propose a novel approach by comparing quality-adjusted single family homes in a predefined target and control area before and after the occurrence of sinkholes. We also model the spatial and temporal dimensions of the impact of sinkhole collapses using data for Orange County, Florida, between 2000 and 2014. We find evidence of regional effects of sinkhole collapses on house prices. The effects are small, but persistent. We find no evidence that sinkhole collapses have short-term local external effects on nearby house prices.

### **Global patterns of inventive activity in medical technology. Is there a global shift and what are the growth mechanisms?**

MSc Pieter Stek<sup>2</sup>, [Prof. dr. Marina Van Geenhuizen](#)<sup>1</sup>

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S17-S2 Geography of science and the spatial dimension of scientific activity  
IUT\_Room 201, August 30, 2019, 2:00 PM - 4:00 PM

While there has been an overall global shift of economic activity, it is little known about such a shift in R&D in specific economic sectors. Medical technology is such a sector. To fill the knowledge gap, the study makes use of unique historical patent data and identifies the top clusters and changes herein in the world in a period of 15 years. The theoretical background is that of agglomeration economies, particularly knowledge spill-overs, and as a complement or substitute, that of network economies (Acs et al., 2002, 2013; Ponds et al., 2009). We perceive dynamics from two different angles: enabling conditions and drivers. While agglomeration and networks are seen as enabling conditions, the study perceives R&D organisations, like multinational corporations, universities and government research institutions, primarily as drivers in R&D, causing growth, shrinking, relocation and transfer of R&D activities, thereby drawing on their dynamic knowledge capabilities (Cohen and Levinthal, 2000; Teece, 2006; Autio et al., 2013; Alkemade et al., 2015). Empirically, the focus is on the following questions: 1) Which are the spatial dynamics in global clusters of medical devices technology, with regard to patent output? 2) How do these dynamics relate to characteristics of drivers, agglomeration and networks in clusters?

The main results can be summarized as follows. R&D in the medical devices sector has been growing in the past years. Annual patent output has doubled between 1996 and 2011. However, there is strong stability in terms of numbers of clusters and spread over the continents. With a small increase in number of clusters, only Asia Pacific increases slightly in importance, while North America has maintained the largest share of clusters. Also, clusters of all sizes grow at a similar rate over the whole period (as indicated by a stable gini-coefficient). With regard to individual clusters and rank size, the top ten clusters have remained mostly unchanged over the 15 years period, with a few exceptions, like a somewhat rising Seoul (Korea) and falling Washington and Chicago (US). In the last observation period (2008-2011) most clusters in the top are in the US – New York, San Francisco, Los Angeles, Minneapolis, and Chicago-, three are in Asia – Tokyo, Seoul and Osaka, and one in Europe – Frankfurt and one in Israel (Tel-Aviv).

With regard to underlying mechanisms, a model of patent output is developed and estimated using regression analysis with change in patent output as the dependent variable. Three sets of explanatory variables are used, namely, driving organisations' knowledge gaining, agglomeration conditions and network conditions. The results indicate that patent output is positively and significantly associated with knowledge gaining by multinational corporations. The partial model is relatively strong as evidenced by R<sup>2</sup> of 0.62. In addition, in a partial model that ignores multinational corporations, one agglomeration quality turns out to yield a positive and significant result, namely, number of scientific publications as an indicator



of size and productivity of scientific communities in a cluster. In addition, the 'conditioning' of the clusters through the national innovation system (NIS) also yields a positive and significant result. Remarkably, none of the collaboration network variables, like network size and diversity, turns out to be significant. The partial model of agglomeration factors and network factors (R<sup>2</sup> of 0.26) suggest minor importance compared to drivers. In addition, at the individual level of clusters, different growth trajectories are visible, in particular, Asian clusters' networks are relatively small compared to cluster size. However, relatively small networks do not hinder strong cluster growth, like in the case of Seoul.

The preliminary conclusions are the following ones. There is no global shift in inventive activity in the medical devices sector, but stability. Stability in global distribution tends to go along with specific patterns of knowledge gaining by multinational corporations, as well as with some agglomeration advantages from large and productive scientific communities in clusters and a positive NIS. The underlying mechanisms tend not to be related to (changes in) networks. By adopting a sector approach, the results contribute to literature by providing new understandings of dynamics in the global distribution of inventive activity.

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See extended abstract online.

## **Between citizen sensing and living labs: key performance factors in co-production of improved urban health conditions**

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S20-S1 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 11:00 AM - 1:00 PM

Over the past twenty years many so-called bottom-up or participatory initiatives have emerged in solving urban problems in Europe and North America. Particularly after the recognition of important challenges in urban sustainability, including energy, transport and healthcare, the number of such initiatives has increased. In policy terms, we talk about co-production of urban services and solutions with active involvement of citizens in creating them. Co-production generally aims to increase effectiveness and quality of services (solutions) and addresses in a broader sense, democracy and accountability (Pestoff et al., 2012). In practice, it can be seen as a procedural policy tool, namely, as an instrument helping to accomplish a policy goal by altering actor behaviours, often in dynamic multi-actor situations. Seen from the standpoint of citizens, co-production may range from measurement in determining the magnitude of a problem to the identification and design of problem solutions in responding to their needs (Howlett, 2011).

Challenging the planning and delivery of urban services has attracted attention ever since the work of Ostrom (1990), while today attention is increasingly given to the role of information and communication technology (ICT) and 'smart solutions' (e.g. Pestoff et al., 2012; Gabrys, 2016; Nesti et al., 2018). However, what has stayed behind are systematic studies of the performance (productivity) of co-production initiatives and factors that influence the actual contribution to improving problematic urban situations. This lack of studies is partly connected to the 'popular' character of the initiatives today, causing the use of 'buzzwords' and blurring definitions. In addition, there are methodological problems to be solved, like on process results versus performance results, and multi-level character of performance (Emerson and Nabatchi, 2015). Against this background, the question addressed in the study is: what are the key factors in citizen initiatives, like citizen sensing (science) and living lab methodology, with regard to co-production results, and what is the main differentiation involved?

After clarification of the various concepts, the paper investigates three contrasting citizen initiatives with the aim to increase understanding of the actual contribution of co-production: citizen-sensing, citizen science and living labs. Drawn on analysis of the literature and three case studies, the final step in the paper is the design a preliminary performance framework. Citizen-sensing is conceived as an initiative of citizens that are triggered by exposure to a health risk and intending to challenge the accountable actors (authorities) to recognize and solve the problem. Accordingly, they utilize networked sensor technology in measuring the exposure (Berti Suman, 2018ab; Berti Suman and Van Geenhuizen, 2019). By contrast, in living labs methodology the problem is already recognized and citizens (or users) are already assigned a priority role in participation in the design of solutions. Urban living labs can be seen as a methodology of experimentation in real-life in cities aimed at achieving innovative solutions to societal problems, in particular through co-creation with citizens, including design, prototyping, validation, refinement and eventually, upscaling (Van Geenhuizen, 2018) Accordingly, while citizen-sensing is more on the identification and recognition (legitimacy) side of a problem, living labs are more on the side of designing solutions to a problem. Further, the third type of initiative included in this paper, citizen science, can be seen as the active participation of lay people in scientific research, often to provide more detail in measurement (granularity, time-dimension). However, a more active and informal version of citizen science is increasing in popularity today. A main issue in all initiatives is the democratic content, given the role of self-selection in participation and representativeness of the citizens that participate (Michiels and de Graaff, 2017).

The paper makes use of case studies in literature on citizen-sensing, citizen science and living labs that address urban health conditions (Kehaya et al., 2014; Jiang et al., 2016; Carton and Ache, 2017; Berti Suman,

2018ab; Berti Suman and Van Geenhuizen, 2019; Van Brussel and Huysse, 2018; Van Geenhuizen, 2018). The case studies include: Amsterdam Schiphol Airport (citizen-sensing), CuriousNoses in cities in Flanders (Belgium) (citizen science) and Alexis Nihon Shopping Mall in Montreal (Canada) (living lab methodology). Drawing on analysis of the literature and case study understandings, the paper presents and discusses a performance framework including key performance factors and evidence in realizing contribution to actual improvement of urban health conditions. In the framework, emphasis is put on factors on public organization, citizens and actions/processes. With regard to action/processes, a set of 10 sub-factors is distinguished for living lab methodology. Largest differences can be observed between living labs and citizen-sensing. But differences are also increasing within initiatives, like citizen science. With its level of detail, the performance framework constitutes unique contribution to the literature.

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See extended abstract online.

### **Populism in regions of decline: Livability in declining regions and populist voting in the Dutch national elections.**

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S43-S2 Geography of discontent: Explanations and policies

IUT\_Room 205, August 30, 2019, 11:00 AM - 1:00 PM

The last years the population in most European countries has been declining. In the Netherlands, the total population is still growing but has many regions that are declining. In the Netherlands growing and shrinking regions are close to each other. Inhabitants of shrinking regions are therefore fearful of the consequences of the population decline. The livability can be compromised by the decline of the population in that region. Inhabitants of shrinking region have less trust in the national politics as these regions feel abandoned and not heard. Less trust in the national politics can lead to populist voting. As populist voting is a vote against the current "elite" establishment. People who vote populist are not satisfied with the living situation. As livability can be compromised by population decline, the inhabitants of shrinking regions can vote more populist than inhabitants of growing regions. This research answers the question: Do inhabitants of shrinking regions in the Netherlands vote more populist at the national elections when controlling for socio-demographic and economic factors? The voting data of the national elections is collected from the polling stations of the years 2012 and 2017. The socio-demographic and economic factors of the districts are gathered for the years 2012 and 2016. Three models have been developed on the data, a model for the voting year 2012, 2017 and the difference between 2012 and 2017. The data is clustered on district level, where additional data has been added at the municipality level. A linear regression shows that there is a relationship between populist voting and people living in shrinking regions. Livability is determined as accessibility, distance to facilities and commitment to the region. When there is a community feeling within the region, the inhabitants vote less populist. The results show that investing in the livability of shrinking regions can make inhabitants vote less populist. The politician of the Dutch government can make the inhabitants of shrinking regions feel more heard, so these inhabitants will feel more included to the politics and the country.

### **The Implications of Brexit for UK and EU Regional Competitiveness**

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S34-S2 Regional Modelling: New Approaches and Data

MILC\_Room 308, August 30, 2019, 2:00 PM - 4:00 PM

We analyse the impact of Brexit on the UK and EU regional economies by determining its consequences for the competitiveness of firms. In order to examine the initial impact before substitution of intermediate inputs takes place, our analysis employs a uniquely-detailed and comprehensive dataset which allows us to

distinguish between the Brexit-related direct cost/price effects due to a tariff on export markets, the indirect global value-chain cost effects, and the spatial competition effects underpinning regional competitiveness across both the UK and the EU. In order to examine the effects of Brexit on UK and EU on the costs of firms we split the impact into an economic analysis part which examines the sensitivity (in terms of cost elasticities) of regional sectors to tariff barriers, and then a political economy part regarding the different potential Brexit scenarios which may arise relating to both tariff and non-tariff barriers. In this paper we apply the principle of revealed competition between regions (Thissen et al. 2013, Van Oort & Thissen 2017) to the effect of policies (i.e. Brexit) on costs of different industries allowing for both the product competition and the spatial-competition overlaps in a regional industry's sales markets in European regions and the rest of the world taking value chains into account.

Our analysis demonstrates the adverse competitiveness shocks on the UK are only slightly greater for the largest trade partners in the EU such as the Netherlands, but much greater than for the rest of the EU, and that it is the economically weaker non-core regions of the UK which suffer the most. Moreover, ongoing negotiations on a Brexit treaty may improve the adverse shocks for the economically strong regions, but it will not help the economically weaker regions. We show that even amongst the non-core UK regions, those regions which are relatively stronger face less adverse competitiveness shocks than those which are relatively weaker. It is even the case that the stronger regions may have positive competitiveness shocks at the expense of the economically weaker regions. In other words, Brexit will not only make the core-periphery inequalities across the UK greater, but those core-periphery inequalities which exist within both non-core and core UK regions are also likely to increase. In mainland Europe we see a comparable pattern with a strengthening of the core-periphery structure in several countries due to Brexit and a higher adverse impact on the economic weaker regions.

### **Spatial structure, urban hierarchy and productivity in European regions**

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S39-S2 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)

IUT\_Room 202, August 30, 2019, 9:00 AM - 10:30 AM

Within urban economics, findings related to the impact of external economies of urban size on productivity are increasingly complemented by external economies of spatial structure by the inclusion of dimensions such as polycentricity. It is then argued that hierarchically distributed cities within polycentric urban regions can mutually 'borrow' size and share the associated external economies in a regional context. Similarly, polycentricity has been gaining popularity among policy makers as it is assumed to benefit both intraregional cohesion as well as interregional competition. However, empirical evidence for the impact of polycentricity till date remains ambiguous due to diverging methodologies and conceptualizations. The aim of this paper is twofold, as it strives to harmonize its findings on the impact of spatial organization on productivity for European TL2 regions with the existing knowledge base – which is mainly US-based – while also introducing several measurement and estimation improvements. We predict regional total factor productivity with both ordinary least squares and two-stage least-squares models, and find that significant causal effects exist for both urban size and structure. While confirming the general finding within the literature that a larger urban size positively affects productivity, we also find that an interaction between size and polycentricity has a negative effect, which suggests an inability of regions consisting of polycentric city networks to substitute for the urbanization externalities associated with a single large city.

## **The serious game "Mission Post-Car 2060"**

**Ms. Fanny Cottet**

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S58-S1 Serious Games and Urban Studies  
IUT\_Room 108, August 29, 2019, 9:00 AM - 10:30 AM

"The serious game « Mission Post-Car 2060 » is an urban foresight experience which includes a board game and a software enhancing participative urban design. The serious game was produced in cooperation with UMR Géographie-cités and Forum des Vies Mobiles in a French research program called « Post-car Ile-de-France ». The main goals of this research were to test methods, consequences and the distance to target of reducing the use of individual cars in cities. The serious game contains two elements, a multi-agent system and a board game, both of them being tools to collectively "play" different urban configurations without cars and their evolutions over the next thirty years. The game was developed and tested in 2018 and 2019 by a group of five students on multiple types of audiences (students, researchers, citizens)."

## **The role of multinational enterprises in economic diversification: evidence from Mexico**

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G08-YS1 Regional Competitiveness, Innovation and Productivity  
IUT\_Room 103, August 29, 2019, 11:00 AM - 1:00 PM

Recent studies have analysed how industrial and economic diversification are associated with countries' economic growth and resilience. This paper analyses the role of multinational enterprises (MNEs) in promoting the economic diversification of Mexican municipalities through the introduction of new industries. We explore whether economic diversification is purely limited to the activities conducted by MNEs or if it also encompasses changes in the activities of domestic firms. Our results indicate that the entry of pioneering FDIs positively affects the probability of subsequent entry by domestic firms. Finally, we look at the effect of spillovers across related industries and neighbouring municipalities.

## **Investment forecast error: a spatial story**

**Ms Stefanie Vanneste**<sup>1</sup>, prof dr Stijn Goeminne<sup>1</sup>

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G03-YS1 Big Data and Regional Science  
IUT\_Room 203, August 29, 2019, 11:00 AM - 1:00 PM

See extended abstract online.

## **The economic effects of entrepreneurship policy**

**Prof. Attila Varga**<sup>1</sup>, **Prof. László Szerb**<sup>1</sup>, Dr. Tamás Sebestyén<sup>1</sup>, Mr. Norbert Szabó<sup>1</sup>

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S19-S2 Regional Entrepreneurship Policy  
UdL\_Room 103, August 30, 2019, 2:00 PM - 4:00 PM

Recent findings suggest that policies supporting entrepreneurship should be considered in the palette of public interventions promoting economic growth. Despite the growing evidence, it is still unknown to what extent a given policy intervention would affect economic growth in a particular country or region and how these effects might change over time. These effects can be estimated with economic impact models. GMR-Europe is the first available model that estimates the economic impacts of entrepreneurship policy. In this paper we introduce the most recent version of GMR-Europe. To illustrate the capacity of the model the paper provides a detailed policy impact assessment analysis.

### **An agent-based model of innovation-related cooperation: policy simulations for Hungarian high-growth firms.**

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S14-S1 Collaboration-based innovation policies: theory, empirics and practitioner feedbacks  
UdL\_Room 106, August 30, 2019, 9:00 AM - 10:30 AM

Building on previous literature on the role of proximity dimensions in knowledge flows, we introduce an agent-based model, which is appropriate for simulating knowledge network formation among fast-growing firms. For empirical underpinning of the model, we use survey data on the Hungarian high-tech gazelles' egocentric network. The advantage of the current database is that it contains information about innovation-purpose cooperation in general, covering different types of links between firms. As a result, the scope of the investigation is not limited to exclusive forms of connections like participation in the same EU Framework Programme. In the current study, agents represent firms or universities placed in the two-dimensional abstract social space where they are moving. Their initial position is determined by their network distance, which is measured by the shortest path among them. In line with the gravity principle, we assume that attractiveness between two agents is affected by geographical, organizational, institutional and social proximity as well as by the innovative mass of the two organizations. Agents are moving toward each other according to this gravitational force and other idiosyncratic parameters, so their position in the social space is changing in each time step, rearranging network ties as a result. For illustrative purposes, we show ex-ante policy simulations in which we demonstrate how the agent-based policy simulation could help in developing smart specialization strategies.

### **The political economy of mountain zoning and its impact on rural development and farming activities (1958-1999)**

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S22-S2 The politics of local and regional development  
IUT\_Room 303, August 28, 2019, 2:00 PM - 4:00 PM

This article aims to evaluate the impact of mountain zoning in France.

### **City size and exit from unemployment in bad times : evidences from the French army restructuring**

Dr. Mathieu Sanch-Maritan<sup>2</sup>, Dr. Lionel Vedrine<sup>1</sup>

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This article explores the role of city size on unemployment volatility. We present a simple new economic geography model of labor pooling to illustrate how the relation between economic shocks and local unemployment can be mitigated by city size. Then, we exploit a quasi-natural experiment by studying the economic impact of 357 local shocks both negative and positive generated by the reform and the restructuring of the French army. Exploiting a geo-referenced dataset of unemployment spell over an extensive period of time (2005-2014), we are able to measure the impact of these local shock on the rate at which unemployed workers find a job. To construct a credible counterfactual for each zone which experienced a closure, we use an interactive fixed effects model. We show that contractions in military personnel reduce the local likelihood of finding a job. Moreover, our results reveal some heterogeneity in the local economy's resilience. In line with our theoretical model, we show that city size is a relevant explanation for the observed heterogeneity in resilience: the likelihood of finding a job is less affected in denser area by a relative equal-sized shift in labor demand.

### **Cluster policy evaluation: evidence from African SMEs**

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G08-O5 Regional Competitiveness, Innovation and Productivity  
UdL\_Room 105, August 29, 2019, 2:00 PM - 4:00 PM

For the last three decades cluster policy has been an extremely resilient policy to enhance regional competitiveness. Whilst there are various cases of success (i.e. Basque Country) there is still the need to develop policy instruments that enable regulators and cluster managers to better respond to social demands and economic challenges. This is particularly important in business environments that fall behind in terms of institutional development and public funding support for businesses. We argue that this is precisely the conditions faced of manufacturing firms in some African countries.

Public budget constraints in many African countries limit their ability to provide the necessary level of monetary support needed to implement hard industrial policies to support the competitiveness of African firms. Other mechanisms therefore such as soft policies can become important to support and facilitate local firm development. In this vein the creation of cluster zones has been advocated as a way to stimulate local firms to compete and ultimately increase their productivity. Cluster membership may be particularly important for SMEs as they lack the scale and resources of large MNEs to invest in innovation projects. The advantages to clustered firms are associated with connectedness although the conditions for these advantages to emerge are predicated on institutional support and social exchange. Based on these arguments we hypothesize that cluster membership increase productivity in African manufacturing firms; and that this effect is larger when the country has devoted intentional resources in order to implement this industrial strategy.

In order to respond to this question the authors draw on the World Bank Enterprise Survey. The cross-sectional surveys conducted in nine African Countries during 2010 contain 1,111 African SMEs in various manufacturing industries. The sample includes the question on whether the firm belongs to a cluster association. In the sample 28% of the firms are members of cluster associations. As a measure of firm productivity we use labour productivity. The treatment effect for both, the full sample and matched sub-sample constructed using nearest neighbour propensity matching score, indicate that cluster associates are more productive than non-cluster firms. We implement a series of counterfactual exercises to understand



how non-cluster firms would benefit from joining a cluster association and conclude that the benefit is stronger when the government develops an intentional industrial policy towards the use of cluster zones. This result opens an interesting avenue for further research.

### **Are cities densifying or decentralizing? A global analysis using functional urban areas**

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S39-S1 Understanding urbanisation at a global scale: definitions and empirical analyses (OECD and European Commission)

IUT\_Room 202, August 29, 2019, 4:30 PM - 6:00 PM

This paper proposes a method to define the boundaries of urban economic agglomerations – or functional urban areas (FUAs) – in the whole world and assesses patterns of population growth within such agglomerations. The method builds on the EC-OECD definition of FUAs, which are composed of urban centres least 50 thousand people surrounded by interconnected commuting zones. The estimation of commuting zone borders relies on the use of population gridded data with regular cells of one-km<sup>2</sup> across the globe. Commuting zones surrounding urban centres are identified by relying on the estimated probability that a one square-kilometre cell with at least 300 inhabitants is part of a FUA. Such probabilities are the outcome of a logit model that relies on characteristics at both cell and country level. For this classification problem, a set of about one thousand FUAs in 31 countries is used to construct a training set of about half a million points. Results show that around 54% of the world population live in urban agglomerations, out of which 12% live in their commuting zones. Both these shares increase with level of development, with the proportion of suburban population in developed countries disproportionately overcoming that of the rest of the world. Since 1990, the increase in population in commuting zones as a percentage of the total FUAs' population has been fastest in Europe and Latin America.

### **Do secondary motives shape migration? The interplay between labour markets, residential qualities and family ties.**

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S41-S4 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks

IUT\_Room 201, August 29, 2019, 9:00 AM - 10:30 AM

It is generally reported that short distance moves are associated with residential motives whereas longer distance moves are more often related to labour market or educational motives. Yet, at the same time, in the Graves -Linneman type of frameworks moves are viewed more in terms of a trade off with migrants willing to trade labour market outcomes for untradeable local amenities. Such untradeable amenities can include family networks. Such networks might be instrumental in finding better matches in labour and residential markets, but moving closer to or away from family might be a goal in its own right as well. This suggests that looking at migration as a multi faceted decision, rather than a one dimensional work - housing dichotomy might prove fruitful in deepening our understanding of what drives interregional migration. Even if a longer distance move is undertaken for the primary motive of finding work, secondary motives may

prove vital in making the ultimate decision as to whether to move at all, and if so what the destination might be.

In this paper we will investigate primary and secondary motives for migration. We will try and establish which combinations of primary and secondary motives occur, and what their prevalence is. We will investigate whether there are differences between subgroups that have received ample attention in the literature, such as young recent graduates, families, elderly. In particular, we investigate to what extent more classic motives such as labour, education and residence, coincide with motives related to family networks. Furthermore we investigate whether different profiles are associated with different migration outcomes.

Data (Niedomysl et al, 2009): This paper uses survey data collected in collaboration with Statistics Sweden in spring 2007 via a postal questionnaire sent to a stratified sample of 10,000 Swedish migrants, of a total population of 244,704 migrants who had moved at least 20 km in 2006.

The dataset has been used in motive research before (Niedomysl et al 2009, 2011), looking into the relationship between migration motives and return migration for example. Specifically we will use the questions on primary and secondary motives, and on specific reasons to either stay or leave particular areas.

### **The early career effects of being self-employed while studying**

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S41-S5 Drivers of interregional migration: new insights on the role of local labour markets, human capital, personality and (family) networks  
IUT\_Room 201, August 29, 2019, 2:00 PM - 4:00 PM

In attempts to stimulate entrepreneurship in a general sense and university-business relations specifically, entrepreneurship is given more and more emphasis in curricula of Institutes of Higher Education (HEIs). Students are taught and stimulated to start their own businesses early in their careers. Unfortunately however, little is known about the impact of student self-employment on the development of their careers later on, either in self-employment or in wage employment. This study assesses, using longitudinal Dutch register data on recent HEI graduates, to what extent self-employment experience as a student influences the propensity of being self-employed after graduation, earnings from self-employment after graduation and finally, wages from dependent employment after graduation.

We find that, on average, self-employed students outperform their peers without self-employment experience: In the first years after graduation, they earn higher wages and, if running a firm, have higher income from self-employment.

After controlling for selection into student self-employment, the enabling effects of partners and differences in industries, we find positive effects on continued self-employment for men and women, as well as on the likelihood of being in dependent employment for men. However, we find no effect of self-employment experience as a student on subsequent income from self-employment. Also, we find evidence for slight negative effects on wages further into the careers of men and women.

This leads us to conclude that, even though student self-employment signals persons with great potential on the labour market, it does not foster more successful outcomes. We find no convincing evidence of a learning effect that can be capitalized upon in the early labour market careers of graduates.

## **Terrorism determinants, model uncertainty and space in Colombia**

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G04-O1 Regional and Urban Development  
IUT\_Room 202, August 28, 2019, 11:00 AM - 1:00 PM

This paper studies the socioeconomic determinants of terrorism at the sub-national level in Colombia. With this aim, and in order to deal with model uncertainty, a Bayesian model averaging framework has been implemented to departmental data. The variables robustly linked with terror are the importance of the social, communal and personal services sector and the employment rate. These findings suggest that the violence experienced by this country during the sample period analyzed was mainly driven by economic grievances. Therefore, a sensible strategy to struggle with terrorism in similar contexts should consist of increasing its opportunity cost. Previous results are not significantly altered by using relative measures of terror, specifying alternative parameters and model priors, or controlling for the possible presence of spatial spillovers.

## **Modelling the regional labour market for midwives in Denmark with LINE, an interregional SAM-type 2-by-2-by-2 principle model**

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G05-O6 Regional and Urban Labour Markets  
IUT\_Room 210, August 30, 2019, 9:00 AM - 10:30 AM

The Capital Region of Denmark has the highest share of inhabitants between the age of 20 and 35 in all of Denmark, representing about 24% of the total population in the region in 2016. In addition, the number of births in the Capital Region are expected to grow by 22% between 2016 and 2030. This is likely to have direct effects on the demand for midwives, gynecologists, obstetricians and pediatric specialists. Currently, there is a relatively balanced labour market for midwives in the Capital Region of Denmark. However, will the stock of qualified midwives be enough to meet higher demand in the future? How many more midwives will there be necessary to educate in order to retain a balanced labour market going out to 2035?

In order to assess the demand and supply of labor with educational qualifications in midwifery, the health version of the Local Interregional Economic model for Danish municipalities LINE has been used. The health version of LINE includes several model extensions, including an extended stock-flow demographic sub-model, a sub-model for the demand for individual governmental consumption, as well as the labour market sub-model. In order to accurately forecast the supply health care personnel, an education-graduation sub-model has been imbedded into the demographic model. For the sake of this paper, only the labour market for midwives is considered.

As reported by the Danish Ministry of Higher Education and Science, the educational capacity for midwives increased by 30 additional seats in 2018 in The Capital Region of Denmark. As an alternative scenario, this effect has been manually included in the in the model as a one-off increase of 30 additional admissions into the midwifery program. A forecast of this scenario, representing the consequences on demand and supply of labour with midwifery education, is presented.

## **Impact of fiscal and political decentralization on the government quality in Central and Eastern Europe**

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G09-O2 Regional Finance, Fiscal Issues, Investment or Capital Markets  
IUT\_Room 304, August 28, 2019, 2:00 PM - 4:00 PM

Since seventies of the 20th century the process of decentralization has spread the world, and today more than 95% of the democratic countries are decentralized. According to World Bank decentralization may appear in the following forms: political, administrative, fiscal and market decentralization. The accent of this paper is on the fiscal and political decentralization and their effect on the government quality. Namely, political and fiscal decentralization should result in well-organized and more efficient government. There are numerous papers that have mostly confirmed the positive impact of fiscal decentralization on government quality, while there have been less papers and with vague results on the impact of political decentralization. The idea of this paper is to study the impact of fiscal and political decentralization on the government quality in seventeen Central and Eastern European countries for period 1998 – 2012. Moreover by forming an interaction variable between political and fiscal decentralization, the impact of abovementioned decentralization on the government quality for these countries is further explored. Hypotheses that fiscal decentralization positively influences the government quality, but that political decentralization reduces its positive impact will be tested by multiple linear regression analysis. Fiscal decentralization will be measured by the budget indicators obtained from the International Monetary Fund Database Government Finance Statistics (GFS), while political decentralization will be measured by indicator Authority taken from the World Bank Database of Political Institutions. Control of corruption, rule of law, regulatory quality and government effectiveness will be used as government quality indicators and are available from World Bank Governance Indicators. Adequate control variables such as GDP per capita and government size will be used as well.

### **A Structural Equation Model for Place-Based Love for Swedish Cities**

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G04-O2 Regional and Urban Development  
IUT\_Room 207, August 28, 2019, 11:00 AM - 1:00 PM

In recent years there has been increased interest in local factors that shape the happiness of citizens in regard to their daily living and working environment (sometimes also coined 'city love' or 'neighbourhood love'). This new strand of literature – often also framed in the context of the 'geography of happiness' – is an extension of quantitative socio-psychological research on determinants of affection for the living environment of urban inhabitants, including local quality-of-life, sense of community, place-based social capital, and so forth. This paper conceptualizes the effect of urban characteristics on place attachment and 'city soul' – as a measure of emotional connectedness to the city – in four Swedish cities: Stockholm, Malmö, Gotenborg, and Umeå. Resident surveys were conducted among a total of 2573 respondents and the relationship between variables and factors was tested via a Partial Least Squares Structural Equation Model (PLS-SEM). A preliminary principal component analysis suggested six underlying factors in urban indicators: Aesthetics, Amenities, Accessibility, Safety and Health, City Image, and Green spaces. A PLS-SEM model on the full dataset revealed significant effects of Aesthetics, Amenities, Accessibility, Safety and Health, and City Image on place attachment. Furthermore, there was a direct positive effect of Aesthetics and City image on 'city soul' as well, which was further influenced by place attachment. City-level analysis revealed some place-specific differences. In general, Aesthetics seemed to be the most universal driver for place attachment while City image was the most important determinant to contribute to 'city soul' – in both

cases with the exception of Malmö. Surprisingly, Green spaces did not show significance in any of the tested models.

### **Urban commons: the colorful family**

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S20-S3 Collective action, commons and commoning : towards the emergence of new forms of territorial development processes?

UdL\_Room 103, August 28, 2019, 4:30 PM - 6:00 PM

The proliferation of initiatives in the commons movement has been evident for some years. Polymorphic, it affects many areas of activity and is spread over a wide variety of territories, from rural to large cities. However, if we take a closer look, these initiatives do not, far from it, constitute a homogeneous family that strictly corresponds to the canonical definition of commons as it appears in Ostrom's reflections on common pool resources, or in works based on exclusion and rivalry criteria.

In this way, understanding the current success of the commons requires a precise examination of their diversity, which should make it possible to position these initiatives according to an analytical grid highlighting the resources concerned, the mobilized communities, and the developed governance mechanisms, as well as the motivations that drove local actors to engage in these new forms of collective action. Beyond this, there is a need to identify how these operations spread in time and space, and what are their relations with the diversity of coordination mechanisms in place, from the market to interventions, in order to consider their territorial impact and contribution to new forms of urban model.

This paper aims at understanding the diversity of the models of commons. Starting from the presentation of the results of a research program carried out in France on about 150 cases and ten monographs, we elaborated a grid of analysis reflecting the dynamism, the variety, but also of a certain fragility of the initiatives composing the movement of the urban commons. First, we propose a conceptual statement, highlighting the way in which new forms of urban commons lead us to discuss the usual definitions of commons. In a second part we present the method of analysis and the main results, making it possible to establish a typology of urban commons. Finally, we discuss the territorial anchoring of these initiatives and to what extent they contribute, or not, to the emergence of new models of territorial development.

### **Supporting Half the Sky: Chinese vs EU Social Constructs and the Gender Pay Gap**

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S24-S1 Neo-Weberian Approaches to China: Cultural Attitudes and Economic Development

IUT\_Room 415, August 29, 2019, 4:30 PM - 6:00 PM

This paper examines how social constructs shape the influence of gender and motherhood on the gender pay gap around the world. We analyse the universality of the social construct about women as child bearers rather than being equal to male co-workers in the labour market. We also adopt a Weberian cultural relativity perspective across space, and particularly between the EU and Chinese regions. Estimations of a Mincer-Lemieux specification of the Mincer wage equation using data drawn from the World Values Survey confirms the role of the social construct about females as being child bearers, which has a strong geographical omnipresent effect and is nuanced by local culture. 'Supporting half the sky' is a role for the female worker that remains associated with fewer opportunities for females to benefit from their education and skills, irrespective of the Chinese or Western type economic system. What drives the negative effect of

children on the gender pay gap is the imposition of societal expectations and educationally engrained self-perceptions about the role of the woman as child bearer.

### **GoSmart – a common transnational S3 framework for internationalization in the Baltic Sea Region**

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G06-O5 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 4:30 PM - 6:00 PM

The smart specialization strategy (S3) is one of the key instruments for Europe's regional development. S3 gives a new building block for collaboration in the European Union Cohesion policy. It considers the regional diversity to build a competitive advantage and increase the position in the knowledge economy. Moreover, the framework suggest to focus on different technology strategies, the leader regions capitalize in the invention of new technology, the followers invest in the co-invention aspect of technologies (Foray et al. 2009, McCann and Ortega-Argilés 2015).

However, the situation in the Baltic Sea region is quite diverse in a sense of the development of the regional innovation system (Kruse, Wedemeier 2018). One strategy to develop the competitive advantage of moderate innovators regions is to develop a strategy to overcome the localized lock-in problematic. A transnational S3 is therefore required, which considers interregional knowledge and learning. But the heterogeneity makes it sophisticated to develop and implement such a common strategy. The here suggested approach of a common transnational S3 framework is developed within an INTERREG Baltic Sea Region project named "GoSmart – Strengthening smart specialisation by fostering transnational cooperation". For this, the project developed a methodology in five process' sequences, which include analytical, market technology trends, internationalization potential, and stakeholder aspects in the S3 development. The results show that a common approach is useful, against the background that the socio-economic structural similarities of the selected Baltic Sea regions are very challenging.

### **How cities process information - Local interactions, complex modularity and urban growth**

Dr Joakim Wernberg<sup>1</sup>

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S27-S2 Entropy, Complexity and Spatial Dynamics: A Rebirth of Theory?  
MILC\_Room 309, August 28, 2019, 2:00 PM - 4:00 PM

There is a large body of empirical evidence that indicate increasing returns to scale with city size, including more productive workers and firms, higher wages and increased innovation. At face value, these results are attributed to the city as a whole. However, this does not resonate with the theoretical framework underpinning agglomeration economies or with the growing body of empirical evidence of highly localized externalities within cities, in particular those consistent with learning or informational spillovers. In this paper, I develop a model that builds on complexity and complex systems features to provide a coherent interpretation for empirical regularities associated to both within-city variations in agglomeration externalities and increasing productivity gains with city size. The model provides a conceptual explanation of how individual interactions may self-organize into city-wide modular information processors and a theoretical bridging of the literatures on agglomeration economies and complex systems.

## Technological change, trade-offs and digitalization in Swedish healthcare

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S06-S2 Changes in health care provision, spatial mobility and access to care  
IUT\_Room 103, August 28, 2019, 2:00 PM - 4:00 PM

In this paper, I develop a conceptual model to identify and analyze trade-offs and critical factors in the digitalization of healthcare services in Sweden. Focusing on common denominators across sectors in digitalization with respect to social and economic activities, I synthesize findings from the study of (1) multi-sided platforms, (2) automation and the re-organization of work and (3) data-driven development to the Swedish healthcare sector. In addition, I use the conceptual model to compare and differentiate between the traditional healthcare providers and the emerging digital healthcare services provided by entrepreneurs from the outside of the established institutional framework. The Swedish case provides a combination of a developed Nordic welfare state with a high take-up of new digital technologies. This should make for a strong case for the digitalization of healthcare and strong potential for digital entrepreneurship and future export in digital healthcare services.

## Analysing regional accessibility of speed limit adjustments

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G16-O2 Transport, Land Use and Accessibility  
IUT\_Room 110, August 29, 2019, 9:00 AM - 10:30 AM

The Swedish Transport Administration is working on a project to adjust the speed limits on national roads. A basis for the adjustment is the Vision Zero, a road traffic safety project approved by the Swedish Parliament in 1997 with the long-term goal to radically reduce the number of fatalities or serious injuries in the road transport system. The speed limit adjustments have given rise to criticism since reduced speed limits may have negative effects on regional accessibility and regional economic development.

The purpose of the paper is to present a methodology for analysing regional consequences of changed speed limits in the road network.

Since accessibility is a multifaceted phenomenon, the analysis is based on results from two different transport model systems, SAMPERS and PIPOS. SAMPERS (the Swedish national model system for passenger transport) is a national travel demand forecast tool developed by the Swedish Transport Administration. The model uses Logsum calculations as an indicator of accessibility. PIPOS (Pinpoint Sweden) is a GIS-platform for analysing geographic accessibility developed by the Swedish Agency for Economic and Regional Growth. The tool can calculate distances and travel time between different geographical areas and the change in regional access to workplaces, healthcare, schools and grocery stores etc due to adjusted speed limits. By comparing the estimated effects from changes of speed limits in the road transport system using different transport model systems, the project aims to create an in-depth picture of how speed restrictions affect accessibility and regional development.

Results on regional accessibility from two scenarios are evaluated. In the first scenario, the speed limits on the national roads are chosen based on principles from the Vision Zero Initiative. In this scenario, the speed limit is reduced to 80 km/h on roads with no physical separation between traffic traveling in opposite

directions. In the second scenario, accessibility is prioritized over traffic safety and the speed limit on the prioritized national road network is increased to 110 km/h. For both scenarios, a multidimensional geographical accessibility measure is calculated that varies over space depending on the geographical attributes of each location.

Combining and comparing results from both models, the paper tries to identify areas and parts of the country in the form of regions, stretches and road sections where reduced speed limits can have a particularly negative regional impact on accessibility and, in the long run, a negative impact on opportunities for regional economic development.

### **The symbiotic and dissonant exposed: voicing embeddedness in rural entrepreneurship**

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G23-O3 Rural Issues

MILC\_Room 410, August 30, 2019, 11:00 AM - 1:00 PM

Embeddedness for entrepreneurship in rural contexts contributes to the recognition of a socio-economic texture that is useful for creation of business opportunities and network formation (Pato and Texeira, 2016). Embeddedness is related to economic relations and networks that are influenced due to social attributes like trust, collective action and the relations further developed by those relations and networks (Granovetter, 1985; Johannisson et al., 2002). There is however limited literature that examines meanings of the levels of embeddedness for entrepreneurship in rural contexts. This can help obtain a broader understanding of embeddedness for entrepreneurship in rural context. Thereby, this article aims to examine the meanings of embeddedness for entrepreneurship in rural contexts by giving voice to stakeholders making-do entrepreneurship daily.

When investigating entrepreneurship in rural contexts, embeddedness posits the problem of being multilevel (i.e., individual or company levels, Brailly et al., 2013). At the individual level, entrepreneurship studies focus on the influence of personal relationships and networks such as acquaintances, advice, information exchange, collaboration or resource access (Johannisson et al, 1994). At the business/organizational level, entrepreneurship studies focus on organizations operating in networks of relationships or partnerships that influence collaboration and performance (Powell, 1996; Powell et al., 2005; Uzzi, 1996, 1997). Thus, a combination of levels helps reveal social structures to underline the role of social resources and social capital in economic activities and thus, disclose the multifacetedness of embeddedness.

We investigated the meaning of embeddedness for entrepreneurship by conducting a multiple case study at different levels (Santos and Eisenhardt; 2004) in 21 rural contexts in Sweden. We conducted 54 interviews with entrepreneurs and municipal officers in situ. The interviews were recorded and transcribed in verbatim. A dataset was constructed per case in order to carry out a cross-case analysis. The cross-case analysis allowed us to voice symbiotic and dissonant meanings of embeddedness for entrepreneurship in rural contexts.

Our study contributes to embeddedness literature by showing the interphase of multiple levels for entrepreneurship in rural contexts. We show that rural contexts are more than containers of spatial, social and economic boundaries (Gaddefors and Anderson, 2018), instead rural contexts constitute vessels of embeddedness that pull and push entrepreneurship within and outside the rurality in a multiplicity of directions. Embeddedness combines the use of micro, meso and macro levels. Such combination originates similarities and differences in the perceptions of embeddedness for entrepreneurship in the rural context.



## **Firm productivity and territorial resources: evidence from Wallonia (Belgium)**

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S18-S1 Entrepreneurship and local development: symbiosis and/or dissonance?  
UdL\_Room 103, August 29, 2019, 4:30 PM - 6:00 PM

The aim of our paper is to expose some territorial evidence from a model explaining the firm productivity in Wallonia, the Southern region of Belgium. This model is part of our PhD-thesis project aiming to estimate the impact of territorial resources on the firm performance in Wallonia. Like many other European regions, Wallonia faces up to some challenges related to regional development: firm location is largely structured by agglomeration economies, generating some economic disparities across the region, while public policies in the regional development field are more focused on infrastructure and inexpensive land supply for some decades (Gouvernement wallon, 2014; Vandermeer, 2016; Wilmotte & Halleux, 2018).

We have developed an econometric model in order to correlate the productivity of Walloon SMEs with the firm intern factors estimated from accounting data and with access to territorial resources. By territorial resources, we mean the specific features of the territories that affect the ability of companies to develop their business. Our model illustrates the influence of several territorial resources with multi-scale effects: the key role of wages, the importance of location at European market scale, the effect of proximity to the first-rank cities (and not to the second-rank cities in the Walloon study case) and the weak interrelationship of local infrastructures with firm productivity. The results provide some contributions to the debate for regional development with the key role of agglomeration economies for the SMEs performance.

## **I just run one LASSO regression**

**Dr. Piotr Wójcik<sup>1</sup>**

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G10-O1 Methods in Regional Science or Urban Economics  
MILC\_Room 309, August 29, 2019, 4:30 PM - 6:00 PM

The analysis of real economic convergence and its factors is one of the important topics of research in the field of macroeconomics. It also has important implications for economic policy. The purpose of the article is to identify factors of income convergence between countries with the use of regularized LASSO regression. According to the author's best knowledge, this algorithm has never been used in growth regressions before.

Durlauf et al. (2009) indicate difficulties in verifying conditional beta convergence – the choice of control variables has a key impact on the inference about its occurrence. There is no consensus on what their set is the best. Conclusions regarding the significance of individual factors may contradict each other.

Different approaches were used to select a best subset of convergence factors. Sala-i-Martin (1997) considered all combinations of 62 variables and estimated two million regressions, measuring the significance of individual explanatory variables by weighted statistics based on all regressions. This approach was criticized by Hendry and Krolzig (2004), who indicate that to correctly identify statistically significant convergence factors, it is sufficient to estimate one regression and apply the “general to the specific” approach. Another alternative makes a use of bayesian model averaging – applied to growth regressions by Sala-i-Martin et al. (2004) who called this specific approach Bayesian Averaging of Classical Estimates.

In this article an alternative tool is used, namely the LASSO method (Tibishrani, 1996). It is a popular machine learning tool often used for pre-selection of potentially important explanatory variables. It can also

be used when the initial number of variables exceeds the number of observations. In the case of modeling a continuous variable using the LASSO method, the cost function in the optimization problem apart from minimizing the sum of squared residuals also takes into account the sum of absolute values of the model parameters as an additional constraint. At the expense of a certain bias of the obtained parameter estimates, LASSO often allows to obtain more precise forecasts on the test sample and, what is important in the context of this research, select the most important factors of the studied phenomenon by eliminating the excess variables from the model. The presented article uses leave-one-out cross validation for selection of the optimal lambda hyperparameter (the weight of the additional constraint). The algorithm is applied on empirical data from Sala-i-Martin X. (1997) and Fernández, Ley and Steel (2001), among others.

### **Headquarters location of apparel manufacturers: A comparative study of Japan and South Korea**

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G12-O3 Location of Economic Activity  
MILC\_Room 310, August 30, 2019, 11:00 AM - 1:00 PM

This study highlights the strategic decision undertaken by apparel manufacturers in Japan and South Korea. The logit regression analysis was employed to identify factors affecting the own brand strategies adopted by Japanese and Korean apparel manufacturers, then the differences in strategy were clarified. The main findings are as follows; (1) Apparel manufacturers headquartered in urban areas have added benefits associated with launching their own brands both in Japan and South Korea; (2) The size of the company behind the brand development is significant both in Japan and South Korea. However, the results are quite the opposite. Large-scale apparel manufacturers in South Korea tend to have their own brands. To the contrary, own brand strategy has become an important strategy for relatively small-scale apparel manufacturers in Japan.

### **Out of thin air or soil? Natural conditions, regional industry specialization and the emergence of entrepreneurship**

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S25-S1 Historical Roots of Regional Performance  
IUT\_Room 415, August 29, 2019, 9:00 AM - 10:30 AM

This paper assesses the role of natural conditions for the emergence of regional industry structures and entrepreneurship. There is a lack of research on the role of natural conditions for the emergence of entrepreneurship and regional specialization. The paper shows that certain soil characteristics have a positive impact of the degree of industrialization, the share of crafts businesses, and the rate of entrepreneurship in the early 20th century. There is also a persistent effect on current regional specialization and entrepreneurship. Altogether, the paper demonstrates that current economic structures have historical roots in geography. Such historical roots can severely impede the possibilities and the effectiveness of policy. Hence, understanding such historical roots is highly important for any policy that aims at improving regional performance.

## **The dynamics of increased accessibility to Higher Education and its Returns: A Case Study of Periphery in Israel's Labor Market**

**Dr. Albert Yirmiyahu<sup>1</sup>**, Dr. Ofir Rubin<sup>1</sup>, Prof. Miki Malul<sup>1</sup>

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G05-O1 Regional and Urban Labour Markets  
IUT\_Room 210, August 28, 2019, 11:00 AM - 1:00 PM

Most studies, which deal with the evaluation of large-scale reforms in education, typically focus on the likelihood of acquiring higher education and the associated returns in the labor market. Our previous research, which conducted on the basis of Central Bureau of Statistics (ICBS) data from 2008, indicates that such reform in Israel has made academic education accessible for the residents of the periphery and improved their earning ability. In this study we examine the dynamics of this improvements over time. Our empirical analysis uses data of individual income surveys for 2001-2016 in Israel (ICBS).

The estimation of wage equation as a function of the individual's characteristics generally yields a positive return to education, but taking the number of schooling years as an exogenous variable might cause bias in education coefficient. One of the reasons is that education is a choice variable correlated with unobservable attributes and characteristics such as inborn intelligence, acquired skills, and motivation. In order to overcome the correlation between level of schooling and various unobserved variables, we will focus on a particular shock in supply side of education. We will identify the effect of education on salary using observed variable (instrumental variable) that describes the policy change in the Israeli higher education system (i.e. Academic Colleges Law 1995) which has supported the accessibility of academic studies to a broad spectrum of groups and thereby has also contributed to reducing the wage gap in the long run.

The estimation of wage regression is processed by TSLS approach. Preliminary results indicate that the impact of the Academic Colleges Law on the earning capacity and employment of individuals in the labor market has diminishing marginal effect and stabilizes after several years. In addition, it was found that reform in higher education continues to contribute, but not to a large extent, to the narrowing of the wage gap between the two investigated groups in the Israeli labor market (core vs. periphery). These gaps seemingly stem from the quality of educational institutions and the fields of study chosen by students of periphery regions compared to residents of the core in Israel.

## **The Economic Impacts of Help to Buy**

Dr Felipe Carozzi<sup>1</sup>, Professor Christian Hilber<sup>1</sup>, **Mr Xiaolun Yu<sup>2</sup>**

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S38-S2 Housing Markets: information, taxes, prices  
IUT\_Room 108, August 28, 2019, 2:00 PM - 4:00 PM

The British government introduced its new flagship housing policy—Help to Buy (HtB)—in 2013. The policy aims to help households, especially first-time buyers, to overcome their credit and liquidity constraints, stimulate housing construction and increase housing affordability. To explore the economic impacts of HtB, we exploit a difference in spatial discontinuity design, taking advantage of spatial discontinuities in the scheme that emerge at the Greater London Authority (GLA) boundary and the English/Welsh border post implementation. We find that HtB substantially increased house prices and had no discernible effect on the construction volume or on aggregate private mortgage lending in the GLA, where housing supply is subject to severe long-run constraints and housing is already extremely unaffordable. HtB did increase construction

numbers and did not have a price effect near the English/Welsh border, an area with less binding supply constraints and comparably affordable housing. HtB also led to bunching of newly built units below the price threshold and to smaller new units. We conclude that HtB may be an ineffective policy in already unaffordable areas.

### **Of Financialization and Metropolization. The case of the European REITs sector**

Professor Alain Coën<sup>1</sup>, Dr. Raphaël Languillon<sup>2</sup>, Professor Arnaud Simon<sup>3</sup>, **Mr Saadallah Zaiter**<sup>3</sup>

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S37-S1 Geography of the real estate stock wealth and of its evolutions  
IUT\_Room 201, August 30, 2019, 9:00 AM - 10:30 AM

The aim of this paper is to investigate if financialization and metropolization are two converging dynamics. We aim to verify if the most financialized European public property companies are also the main actors in the metropolization process through their portfolio arbitrages of their building stocks. In 2002, the properties held by our sample companies represented a total surface area of around 60 million square meters. The total surface area increased to 70 million square meters in 2016. We find that, between 2002 and 2016, the financialized European public property companies (F-companies) and the non-financialized European public property companies (NF-companies) exhibit a tendency to disinvest the non-urban spaces, to reinvest in the Hinterlands for the NF-companies, to reinvest in the Core for the F-companies, at least in relative terms. We also find that, in relative terms, the F-companies reallocated their portfolio toward the Large metropolises, in particular in Germany, France and Switzerland while the non-financialized companies shifted their portfolio toward the others segments (exclusively toward the Metropolises segment for Sweden). Belgium is exception, with a reversed evolution. In order to analyze the differences in the behavior of F-companies and NF-companies, we introduce a new score transparency index. Our results suggest that F-companies are more transparent than NF-companies. They are larger in size, less dominated by insiders, are followed by more analysts and they have greater institutional ownership. The results of a logistic regression also show that F-companies have higher liquidity than NF-companies.

### **Urban design management of mixed tenure housing: opportunities and challenges for social sustainability and urban resilience**

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G15-O4 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 29, 2019, 2:00 PM - 4:00 PM

Tenure integration in housing is claimed to encourage improved life chances, social mobility and mixed economy activities for the poorer residents. Such socioeconomic benefits can positively influence wider notions of urban resilience, understood as a city's capacity to build stability in changing socioeconomic circumstances, and social sustainability, defined as communities' efforts towards fairer and more spatially equal societies.

However, lack of clarity around roles in urban design management of mixed tenures is often cited to cause social tensions within them carrying a detrimental influence on the notions of urban resilience and social

sustainability through intensifying physical and thus perceptual social segregation. There has been little research on successful strategies in integrative negotiation management in design, planning, construction and post-occupancy operation of mixed tenures to ensure their social consolidation. This paper will focus on possible approaches to identify critical factors in urban design management for successful mixed tenure schemes from the perspectives of social sustainability and urban resilience understood as alleviation of social and spatial inequalities through tenure integration.

In the proposed approach a number of mixed tenure case studies are investigated in terms of socially sustainable urban design management understood as integrative negotiations and orchestration of activities of various stakeholders involved in the planning and management of such developments with the objective of providing affordable yet high quality mixed housing schemes. The selected cases originate in contrasting settings chosen for their specific approaches to mixed tenure housing: the United Kingdom, where the history of mixed developments has been well established; Finland and Poland, where the interest in such models has been growing recently. The selected cases are at different stages of development ranging from design conception through planning and construction to post-occupancy management, reflecting various roles, challenges and opportunities encountered across the full development cycle.

### **The Huai River Boundary, educational attainment and earnings: A tale of weather and sex**

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G06-O3 Regional and Urban Policy and Governance  
IUT\_Room 306, August 29, 2019, 9:00 AM - 10:30 AM

The literature estimating returns to education in China is extensive. However, as elsewhere, this literature struggles to address the potential endogeneity of educational attainment. This paper exploits the Huai River discontinuity and the exogeneity of residential location in pre- and early-reform China to construct a new instrumental variable for educational attainment. Educational attainment was significantly and negatively associated with temperature in areas where winter heating was limited. The effect of variations in educational attainment that are attributable to this temperature effect on earnings is much higher than conventional estimates of returns to education in China. These variations also have substantial effects on labor force participation.

### **Economic Valuation of Climate Regulation in the Mediterranean**

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S48-S1 The Mediterranean: conflicts, ecological and economic values Time: of a changing sea environment  
MILC\_Room 409, August 30, 2019, 9:00 AM - 10:30 AM

As the scope of the ecosystem services approach expands, research on marine ecosystem services remains limited, mainly due to the lack of sufficient data and poor understanding of the processes that underlie such ecosystems. This study presents a spatiotemporal economic valuation of the climate regulation ecosystem service in the Mediterranean, which accounts for permanent and temporary carbon sequestration. Based on different carbon prices, the estimated value of climate regulation within the Israeli EEZ ranges between 265.1 and 1270.9 € km<sup>-2</sup> year<sup>-1</sup>, which is ~2.5 to 12 fold higher than estimates by (Melaku Canu et al.,

2015), for this area. Comparison with other valuations of climate regulation, which equated oceanic primary productivity (an ecosystem function) with climate regulation (an ecosystem service), points to a recurring economic overestimation of this ecosystem service.

### **Shark aggregation and tourism: Human Wild-Life Conflict in the Mediterranean**

Mr Ziv Zemah Shamir<sup>1</sup>, Dr. Shiri Zemah Shamir<sup>2</sup>, Prof. Nir Becker<sup>3</sup>, Dr. Aviad Scheinin<sup>1</sup>, Prof. Dan Tchernov<sup>1</sup>

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S48-S1 The Mediterranean: conflicts, ecological and economic values Time: of a changing sea environment  
MILC\_Room 409, August 30, 2019, 9:00 AM - 10:30 AM

In the last few winters, sharks have been aggregating near the Israeli Mediterranean coast, at a specific point, near Hadera power station. This unusual phenomenon has fascinated residents, visitors, kayakers, divers and swimmers. We analyse the effects of this intense human interest on the sharks, using contingent behaviour, in Hadera and in Ashkelon, where sharks are present but not the infrastructure for their observation. We also report on changes in shark behaviour due to change in tourism intensity. We find a change of about ILS 4.1 million annually for both sites but a larger individual consumer surplus in Hadera, where sharks are currently observable. Touristic intensity crosses the threshold level by about 12% and making the socio-equilibrium sustainable for both humans and sharks would have a social cost of ILS 0.157 million.

### **A bio-economic approach of marine macroalgae exposed to global increase of CO2 concentrations**

Mr Ziv Zemah Shamir<sup>1</sup>, Dr. Shiri Zemah Shamir<sup>2</sup>, Prof. (RIP) Avraham Haim<sup>1</sup>, Dr. Alvaro Israel<sup>3</sup>

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S48-S1 The Mediterranean: conflicts, ecological and economic values Time: of a changing sea environment  
MILC\_Room 409, August 30, 2019, 9:00 AM - 10:30 AM

Atmospheric CO2 concentration are expected to reach up to 1300 ppm, nearly three times the present concentration by the end of the current century. As an important part of global primary producers, marine macroalgae have received wide attention due to their key roles in the marine biological CO2 pump and in sustaining natural and sea-farming ecosystems. Seaweeds are also important in providing food and bioactive compounds for human benefit. In this study we examined the effects of dissolved CO2 and seawater temperature on the growth rates of two marine macroalgae, *Ulva rigida* (Chlorophyta) and *Gracilaria conferta* (Rhodophyta), common to the Israeli Mediterranean Sea shores and cultivated by the local seaweed industry. The algae were grown under continuous aeration at ambient CO2 concentration (0.036%) or CO2-enriched seawater (0.18-0.20%), and supplied with sufficient N and P. Growth rates of the species studied were generally significantly affected on a seasonal basis by the increased CO2 concentrations in the seawater medium (190.8 average growth rate per day for *U. rigida*). CK of response of photosynthetic traits in these aquatic plants is likely to be due to the presence of CO2 concentrating mechanisms (CCMs) which rely on HCO<sub>3</sub><sup>-</sup> utilization, the inorganic carbon (Ci) form that dominates the total Ci pool available in seawater. Significant changes on the productivity of these particular marine algae species would not be anticipated when facing future increasing atmospheric CO2 levels. We modeled production functions in order to find the maximum output of growing algae under climate changes,

generally, and temperature changes, particularly. In order to find the optimal temperature for maximum yields of the mariculture farmers we optimized the profits. The maximum profits obtained at 225oC for *U. rigida* and for *G. confera* around 24.5-25oC. While the maximum growth rate of *U. rigida* obtained at 21oC and the growth rate of the *G. Confera* is at 25-26 oC. This implies that the maximum growth rate is not necessarily correlated with the profits maximization due to decrease in marginal production law.

## **Innovation and Entrepreneurship as factors of regional development in Russia**

**Dr. Stepan Zemtsov**<sup>1</sup>, Dr Vera Barinova<sup>1</sup>, Yulia Tsareva<sup>1</sup>

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G21-O2 Innovation and Entrepreneurship  
UdL\_Room 106, August 29, 2019, 2:00 PM - 4:00 PM

The Russian regions vary significantly in terms of the level and dynamics of social and economic development, which is primarily due to differences in the availability of natural resources. However, a number of regions managed to improve their position relative to others since 1998, without having hydrocarbon reserves: Leningrad, Kaliningrad, Belgorod, Tambov, Kaluga, Rostov regions, etc. The article discusses the existing mechanisms of influence of the sphere of small and medium enterprises (SMEs) and innovation on the economy. We consider the creation of new firms as a transfer mechanism for transforming ideas into finished products. The purpose of the work is to assess the impact of entrepreneurial activity in the regions of Russia on the level of economic development and regional growth. Our calculations show that in the regions of Russia with developed entrepreneurship, the productivity of the economy is higher (the ratio of GRP to the labor force), in other words, the level of economic development is higher. If entrepreneurial activity in the region (the number of small and micro-firms per 1,000 people of labor) is higher by 1%, the productivity of the economy in it is higher by 0.1-0.2%, taking into account the concentration of human and physical capital. In recent years, the availability of favorable conditions for the development of entrepreneurship and attracting investors has played an increasing role in the development of regions. But at the same time, it was found that entrepreneurial activity is not a factor in the economic growth of Russian regions. We used the results to propose some recommendations for the regional policy: reduction of investment barriers, preservation and attraction of human capital to large cities.

## **New technologies, potential unemployment and nescience economy in the Russian regions**

**Dr. Stepan Zemtsov**<sup>1</sup>

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S11-S1 The regional socio-economic impact of the 4th industrial revolution  
UdL\_Room 104, August 28, 2019, 2:00 PM - 4:00 PM

The use of unmanned technologies (robots as autonomous systems) can cause a decrease in employment rate and inequality growth. For large territorially heterogeneous countries (Russia, the United States, China, Brazil, etc.), the social consequences of technological changes will have a pronounced geographic (regional and urban) specificity, leading to large-scale migrations and changes in the socio-economic space. Based on the internationally comparable methods (Frey and Osborne 2013; Manyika et al. 2017), it was estimated that about 44% of the workers in Russia can be replaced by robots (automated), which is lower than in most countries. Automation does not directly lead to an increase in unemployment. But long-term mismatch between the exponential increase in automation rate and the compensating effects of retraining and new jobs creation is possible. Some people will be not ready for life-long learning, development and

creation of new ideas, technologies and products, competition with robots, and accordingly there is a possibility of their social exclusion in the future. The term "nescience economy" and the corresponding evaluation methodology were proposed to describe these processes.

We estimated that about 50% of labour forces in Russia can be excluded from modern economic activities. The sources of income of these citizens are unclear, but unconditional income introduction is increasingly being discussed. In some regions the share of potentially excluded working citizens in the population is more than 55%: Ingushetia, Chechnya, Nenets autonomous region.

On the basis of the proposed econometric model, a number of measures are described to reduce the threats, which includes the introduction of continuous learning systems, the formation of a network of entrepreneurial universities, reducing investment risks, involving the population in entrepreneurship and improving the quality of the information and communication infrastructure.

### **Fostering home-based work and remote work in neighbourhoods: design scenarios**

**Mr Matthew Zenkteler<sup>1</sup>**, Prof Marcus Foth<sup>1</sup>, Prof Gregory Hearn<sup>1</sup>

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S02-S1 Digital and spatial transformation: structures and relations in the knowledge economy  
IUT\_Room 402, August 28, 2019, 4:30 PM - 6:00 PM

See extended abstract online.

### **Maritime Tourism Satellite Accounts and Regional Impact of Coastal and Maritime Tourism**

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G18-O5 Tourism and Culture  
IUT\_Room 104, August 30, 2019, 2:00 PM - 4:00 PM

Demand for coastal and maritime tourism activities is increasing, this type of tourism receives a wide interest alongside with its contribution to the local economies. Many maritime countries in the EU have seen maritime tourism as the potential driver to regional growth, giving its branding as so-called "Blue Economy".

This paper focuses on the methodologies of compiling coastal and maritime tourism data, where a tourism satellite accounts is made for the coastal and maritime tourism activities. Giving the definition for the coastal and maritime tourism and based on the available data by difference data sources, it is possible to estimate the size of maritime tourism revenue. Supply for the coastal and maritime tourism is mapping by the tourism branches within the 3 kilometer zones along the coast. The estimation for the tourism demand applied "clustering method". The K-mean clustering method is applied, which gives the opportunity to group data points (in this case municipalities with similar tourism traits). Three cluster are chosen to be controlled by geographical location, tourism density and nationality.

The regional and socioeconomic effects of coastal and maritime tourism have a significant impact on the Danish economy and it represents 37 pct. of the total tourism revenue in Denmark. The direct effects of coastal and maritime tourism provide 22,766 jobs and 9,972 million DKK in gross value added to the Danish economy. At a socioeconomic level, coastal and maritime tourism creates 11,398.73 million DKK in total to the tax revenue. The direct effects of the coastal and maritime tourism lead to great positive derived effects to the rest of the society. The total employment creation is 32,537 jobs and total income is 16,491 million DKK, with a positive employment multiplier of 1.43 and a positive value added multiplier of 1.65.



## Quality of government institutions and innovative performance of Chinese firms

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G22-YS1 Institutions

IUT\_Room 205, August 29, 2019, 11:00 AM - 1:00 PM

This paper assesses how quality of government institutions shape firms' innovative performance by focusing on the impact of government institutions in five dimensions (rule of law, government effectiveness, corruption, regulatory quality, and political stability) on Chinese privately-owned firms. The results suggest a higher probability for private firms to achieve innovation success and earn productive innovation output in regions where the rule of law is impartial and the government is effective. Interestingly, it is found that firms are more likely to achieve innovation in corrupted regions with a lower regulatory quality, but in those regions the innovative output firms can reap is less. Meanwhile, in regions where more time is used to deal with government regulations, firms present better innovative performance. All these findings allude a fact that the private sectors in China have long been plagued with prevalence of corruption and inadequate regulations imposed by the government, thus Chinese private firms have learnt how to live through poor institutions to conduct knowledge production activities, but this will not change the fact that firms' innovative capacity has been undermined by poor government institutions. The findings in this paper, therefore, highlight the significance of efforts devoted to improving the quality of government institutions in various dimensions for the private sectors in China to realize better innovative performance.

## How happy are my neighbours? Modeling spatial spillover effects of well-being.

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G11-O2 Spatial Econometrics

MILC\_Room 310, August 29, 2019, 2:00 PM - 4:00 PM

This paper seeks to examine the spatial distribution of individuals as a factor in explaining happiness and well-being levels. There have long been attempts and different approaches in the literature to date regarding the measurement of happiness and the most important factors that seem to contribute to it. The shift from the determinants of happiness towards analyzing levels of happiness through years and a multilevel approach was developed in order to determine the relative importance of the area (district, region). Yet, there is a relative scarcity of studies of the interdependencies of happiness in space and place. Few studies that explicitly analyze the concept of interdependencies are confined at the intra-family level. In this paper we will try to fill this gap in the literature and adding a new geographical dimension by taking into account the arrangement of spatial units (individuals) in our samples and exploring the degree to which geography matters when it comes to happiness. This paper argues that the distance separating different sets of individuals play a crucial role regarding the spatial spillovers of happiness. A key contribution of this paper will be the examination of the spatial spillover effects, e.g. to what extent one's levels of happiness depend on the levels of happiness of her or his neighbours as well as on the latter's employment status and health condition. Anonymized survey data will be used that measure the subjective well-being of individuals while taking into account their spatial distribution. Suitable spatial econometric techniques will be employed to analyze spatial spillover effects, both direct and indirect, and taking into account the (weak or strong) spatial dependence between the neighbourhoods-regions. Being able to identify spatial interdependencies with regards to happiness will provide policy makers a new understanding regarding the policies that will implement. If those interdependencies are valid, there will be spillovers of happiness or

unhappiness from one spatial unit to another prompting social planners to be more cautious when drawing policies. Thus, apart from the increasing need to regional specific policies, the latter should be carefully drawn because of the neighbourhood effect and social interactions. From a scientific perspective, this paper will also add a geographical dimension on the determinants of happiness.

## **Family structures, private life forms and regional voting behaviour**

**Ms Hemma Zmugg<sup>1</sup>**

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G15-O1 Segregation, Social and Spatial Inequalities  
IUT\_Room 205, August 28, 2019, 2:00 PM - 4:00 PM

When it comes to explaining the rise of radical political parties in recent European elections, a large number of studies focuses on economic (“modernisation losers”) or on socio-cultural (cultural backlash thesis) factors, as well as on their interdependencies. In this conference paper the question is raised to what extent an individual’s close socio-environment in the form of private living arrangements, family and household structures determines voting behaviour.

The relevance of this study is given by rising importance of family policies in political discussions – which is assumed to gain influence, considering continuously declining fertility rates and its consequences on age structure and intergenerational distribution. On the regional level, a rising polarisation between different living arrangements can be observed, with traditional family forms (the nuclear family) being more present in some regions than in others, as are adults living alone as well as blended families.

Using the Austrian’s general election in 2017 as a case study, two competing hypotheses are examined. The first relates to the Austrian Freedom Party’s (FPÖ) manifestos and its members’ medial statements. In this context one clear and distinct picture arises: the nuclear family is perceived as the “ideal” living arrangement. As a consequence, the question is raised whether a political cleavage between different family forms can be observed: Are women and men forming traditional family structures more prone to vote for the Freedom Party, in comparison to people in alternative living arrangements? The second hypothesis points to the opposite direction: With the nuclear family still being regarded as a norm for a considerable part of society, it is assumed that extreme voting behaviour may as well at least partly be explained through a sentiment of personal frustration due to one’s partnership status (household size as a proxy).

When analysing extreme voting behaviour, recent studies rely on small-scale regional data as a rich source of information – which, in the Austrian case, is available for districts as well as municipalities. Various information concerning household and family structures on a regional level (districts and municipalities) can be obtained from the Austrian Census, as well as other sociodemographic and economic characteristics which serve as control variables.

## **Spatio-temporal network dynamics: The knowledge economy between 2009 and 2018 in Germany**

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Knowledge generation and dissemination becomes more and more important in key sectors of the economy. Production and services based on knowledge-intensive activities shape the current economy which is characterized by an accelerated pace of technological and scientific advance. Especially advanced producer services (APS) are interesting to study because they show a highly volatile location choice behavior. APS firms establish subsidiaries abroad, coordinate production across countries and relocate their business activities according to new key account customers, changing demand, cost or qualified labour.

These spatial arrangements of firms' locations have changed enormously during the last decades due to the underlying changes in the functional logic of knowledge creation. We analyze these spatio-temporal changes in the German knowledge economy space. Germany is an interesting case to study since it is Europe's biggest economy in global terms and it shows a polycentric, federal urban structure. Our research takes a bottom-up approach and analyses the intra-firm networks of the biggest APS firms in Germany measured by employment.

Previous research about the German space economy of APS firms applies a cross-sectional approach and analyses the connectivity of cities through locations of APS firms. We want to add to this research in three ways. First, we conduct a longitudinal study from 2009 to 2018 arguing that network dynamics over time yield more information about spatial behavior than a static approach. Second, we take into account the firms' perspectives by working directly with the original data structure of a two-mode network, meaning we have two sets of nodes: firms and cities. Third, we apply stochastic actor-oriented models to our network data. These models allow us to estimate and test network dynamics. We assume that preferential attachment will be significant positive based on the structural changes in the knowledge economy: Over time, APS firms will concentrate in cities where many firms are already present in order to facilitate knowledge generation and dissemination through spatial proximity.

### **Healthcare efficiency in EU NUTS 2 regions - comparative analysis with spatial DEA (SDEA) approach**

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G19-O1 Health and Environmental Issues  
MILC\_Room 409, August 29, 2019, 9:00 AM - 10:30 AM

Health, as a well-recognised element of human capital, not only impacts the individuals' quality of life but also strongly affects regional economies. Therefore, assessment of various aspects of population's health as well as healthcare systems becomes an increasingly important issue in local policy making. One of the approaches which enables to combine the systemic aspects of healthcare with the health statistics is to measure the efficiency. This indirect method omits all qualitative particulars (e.g. administrative, informal, financing structure, types of medical facilities) that hinder the standardised regional comparisons. A method often used for the purpose of assessing relative technical efficiency is Data Envelopment Analysis (DEA). In our work we investigate a novel approach to numerical quantification of the comparative efficiency of regional healthcare which explicitly, via spatial weight matrix ( $W$ ), takes into account spatial interactions between regions. Namely, we use a spatial modification of the DEA - Spatial Data Envelopment Analysis (SDEA). In our paper we investigate the efficiency of EU NUTS 2 regions' healthcare, calculated for inputs including the standardised number of doctors and number of beds as well as outputs defined as age-standardised mortality rates of main Western diseases e.g. circulatory and respiratory systems illnesses or neoplasms.

Finally, we conduct an analysis of the resulting spatial distribution of efficiency measures. Similarly to the classic approach, the results of our approach divide EU regions into two groups, that is the effective and ineffective units. Our findings show that the regions' efficiency is driven by a spatial and a non-spatial, structural factor. Applying SDEA reveals that while healthcare systems are mostly homogenous within country borders, the efficiency varies across provinces and neighbouring regions.

### **RIS and territorial servitization: a quantitative approach from the KIBS in Spain**

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S10-S1 Territorial Servitization  
IUT\_Room 402, August 28, 2019, 2:00 PM - 4:00 PM

Adopting the approach of territorial servitization heterogeneity and, aiming to address the explanation of mechanisms that facilitate network interactions between manufactures and KIBS, the paper asks to what extent the entry rates of KIBS sector can be explained by regional techno-economic structure evolution and whether/how the innovation intensity of the RIS places KIBS in the center of knowledge-based learning. More specifically we address the following research questions: i) Is it equally significant the positive relationship between urbanization and KIBS entry for all different KIBS categories?. ii) To what extent a higher manufacturing base is positively related to TKIBS creation?. iii) Does a bigger RIS affect the entry rates of TKIBS?.

The data used in this study comes from two sources. First, KIBS entry rates have been obtained from SABI, a data base with information on companies in Spain. Second, SABI has been also the source to classify KIBS firms into KIBS categories according NACE code and following Böhn & Thomi (2003) distinguishing among: i)TKIBS (research and development and other technical services); ii) CKIBS (computer and related services) and iii) PKIBS (legal services, consultancy and market services) . Third, data on population density and RIS ecosystem have been collected from INE, the Spanish Statistical Office. In this study the unit of analysis is the Spanish regional disaggregation at level NUTS2. The period of analysis extends between 2000 and 2016. From a methodological perspective we use multidimensional panel data analysis.

Even when more in depth analysis is needed, it seems that innovative manufactures certainly stimulate TKIBS, which means that mean territorial servitization statement is corroborated in some degree. The preliminary results corroborate that population density and agglomeration economies matter in KIBS creation rate (Muller & Doloreux, 2007; Shearmur & Doloreux, 2008; Sthalecker, 2014) but it is worth underlining that an exception has been found in TKIBS, the empirical evidence underlines that new TKIBS are located in manufacturing regions and they are more influenced by the environment for innovation than others.

This research aims at contributing towards the scarce empirical literature in the field and contributes a distinct view on supply side, differentiating among TKIBS, CKIBS and PKIBS, and also, a distinct view on demand side relating to the regional innovative system strength. A deeper understanding on how territories materialize servitization intensity can help to shed light on the design of appropriately target industrial and innovation policy at subnational level.