

From Fragmented Data to Territorial Intelligence: Strengthening Evidence-Based Urban and Regional Policy in Serbia

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Introduction

Contemporary urban and regional development strategies increasingly emphasize evidence-based policy-making, territorial governance, and the use of spatial analytics as pillars for sustainability. Evidence-based policy-making refers to grounding decisions in solid data and empirical analysis rather than ad hoc or purely political considerations. In principle, this approach improves the quality, transparency, and accountability of public policy by using facts to guide interventions. Meanwhile, territorial governance highlights the importance of place-based and multi-level coordination in policymaking. It aligns development efforts across different scales (local, regional, national) and sectors, ensuring that policies account for local specificities while pursuing cohesive regional outcomes. The European discourse on spatial planning underlines that moving toward territorial governance requires integrating various policy domains and levels of government, thereby enabling more evidence-informed, coordinated development strategies (OECD, 2019). Complementing these governance paradigms is the expanding role of spatial analytics, including GIS mapping, geospatial data dashboards, and urban big data, in illuminating patterns of urban growth, environmental impacts, and social outcomes. Actually, the convergence of data-driven decision-making, territorially sensitive governance, and advanced spatial analysis forms the theoretical support for pursuing sustainable urban and regional development in the 21st century. Researchers and practitioners argue that these elements together can greatly enhance the efficiency of development policies, especially having in mind complexity of contemporary economic, demographic, and environmental transitions.

The aim of the paper is threefold. First, it assesses Serbia's readiness for data-based urban and regional policy-making by discussing typical bottlenecks in data availability, data quality, and institutional uptake, particularly at the interface between national strategies and local implementation. Second, it presents and interprets empirical findings from research conducted for the "Best City" report in Serbia, positioning this work as an applied example of how data collection and benchmarking can inform territorial diagnosis and policy debate. Third, it draws implications for strengthening territorial intelligence in Serbia, proposing pathways for improving data governance, indicator systems, and institutional learning so that evidence can more systematically support sustainable and balanced territorial development.

Empirically, the paper builds on research covering 28 Serbian cities. The design is explicitly territorial and comparative: cities were selected to allow cross-city benchmarking and to reflect broader spatial patterns. In addition, four major cities are treated as key reference points, each corresponding to one statistical region broadly aligned with NUTS2-type regional

planning logic (Belgrade, Vojvodina, Šumadija & Western Serbia, and Southern & Eastern Serbia), enabling an interpretive comparison of urban performance and perceptions of quality of life and wellbeing across macro-regional contexts. While NUTS is formally an EU classification, Serbia has developed a statistical regionalization that mirrors NUTS logic for planning and monitoring regional development, which supports the analytical framing of regional contrasts in the Serbian case.

Methodologically, the “Best City” research is treated as an evidence-generating instrument rather than a purely descriptive publication. The paper frames it as a decision-support contribution that can consolidate scattered indicators, bring comparability and transparency to urban performance assessment, and provide an entry point for policy discussion about priorities and trade-offs. The focus is on preliminary patterns emerging from the multi-city evidence base, emphasizing two overarching insights: pronounced regional inequalities and variation in attitudes toward citizens’ perceptions across cities.

Data Integration and Policy Fragmentation in Serbia

Transitional economies in Southeast Europe, including Serbia, face well-documented challenges in modernizing governance and integrating data into policy. Decades after socialism, many public institutions still struggle with fragmented information systems and policy silos, which impede coherent strategy-making. In Serbia, as in other post-socialist or peripheral economies, the advanced tools of data analytics and digital governance remain underutilized, and policy-making often relies on fragmented or outdated information. Multiple legacy factors contribute to this state of affairs. First, the institutional capacity for data collection and analysis is uneven across agencies and municipalities – local databases are often incompatible, and national statistics may not be fully disaggregated for local use. Issues of data availability, quality, and interoperability persist, compounded by limited resources for modern data infrastructure. Second, policy fragmentation is evident in the way sectoral and tiered governance structures operate. Development initiatives have frequently been with insufficient coordination, leading to overlap or gaps. Moreover, the absence of empowered regional governments in Serbia. Namely, NUTS2 regions exist only as statistical units without administrative authority which means there is a missing layer for meso-level coordination. This places the burden of integration on national ministries and 145 municipalities, 28 cities, which may not always align their priorities. Crucially, local governments in Serbia have historically been marginalized in policy formulation, reflecting a top-down legacy. Until recently, local self-governments were not fully recognized as key stakeholders in designing and implementing economic development policies (Uvalić, M., & Bartlett, W., 2021).

The Best City Report in Serbia: Methodology and Purpose

The insights from the Best City Report can serve as a catalyst for advancing territorial intelligence in Serbian urban and regional policy. In practical terms, this means transforming fragmented data into a coherent system of indicators and embedding those in the policy cycle for continuous learning and adaptation. A first step is developing improved indicator systems for cities and regions. The report demonstrates the value of a multidimensional city

indicator framework – one that goes beyond GDP or simple municipal budgets to include quality-of-life measures, competitiveness indicators, and citizens' perceptions. Such a framework could evolve into a nationwide urban monitoring platform or observatory, where key performance indicators (KPIs) for each city are tracked over time. Regular updates of these indicators (annually or biennially) would enable policymakers to monitor trends and evaluate the impact of interventions. Crucially, by including subjective well-being and service satisfaction metrics, the indicator system ensures that progress is measured not only in economic terms but also in terms of lived experience.

The preliminary results indicate that regional inequalities remain a salient feature of Serbia's urban system. This finding is consistent with longstanding observations in the literature about uneven development and differentiated regional capacities, but its added value lies in translating macro-level disparities into a city-level comparative lens. The implications are practical: when disparities are visible at the city scale, policy can more precisely identify where specific deficits are concentrated (e.g., access to services, infrastructure quality, environmental pressures, labor-market opportunities, housing affordability), rather than relying on broad national averages. From a place-based policy perspective, the evidence supports differentiated policy mixes that recognize varying starting points and constraints across regions and cities, thereby improving both efficiency (targeting binding constraints) and equity (addressing persistent territorial disadvantages).

Incorporating these findings into institutional routines will enhance institutional learning. One aspect of this is horizontal learning: cities can compare results and learn from one another. If the Best City Report finds, for example, that one city has achieved notably high citizen satisfaction in public health services or environmental quality, other city administrations can inquire into the policies or investments behind that success and consider adopting them. This kind of inter-city knowledge transfer turns the report into a tool for peer learning and healthy competition, encouraging lagging cities to catch up and leading cities to continuously improve. Another aspect is vertical learning within government such as using the evidence to adjust national and regional policy frameworks. The existence of clear, evidence-backed rankings and diagnostics means certain national ministries (for regional development, economy, infrastructure, etc.) can better target support to the needs of specific places. For instance, if southern cities consistently underperform, national policy can introduce incentive programs or capacity-building targeted at those areas. Likewise, if citizen surveys indicate widespread dissatisfaction with a particular service, it flags a policy area needing attention across the board. This feedback loop from local data to national policy is essential for moving beyond a one-size-fits-all approach to a more differentiated, effective territorial policy.

Toward Territorial Intelligence: Implications for Indicators and Institutional Learning

The transition from fragmented data to territorial intelligence encapsulates a broader shift needed in Serbia's urban and regional policy domain. By systematically gathering evidence, integrating it into cohesive analytic frameworks, and feeding it into policy decisions at all levels, Serbia can strengthen its capacity for adaptive, evidence-based governance. This will

support more adaptive, transparent, and sustainable development strategies, particularly as the country navigates structural transformations and EU integration challenges. The findings of the Best City study – highlighting where inequalities persist and how citizens experience their cities – provide both a wake-up call and a roadmap. They underscore that achieving balanced territorial development is not only a matter of economic convergence but also of enhancing quality of life for all communities. With improved indicators and institutional learning processes in place, Serbian policymakers can better diagnose issues, design targeted interventions, and track progress toward more sustainable and equitable territorial development. In essence, territorial intelligence offers a path to turn the wealth of fragmented data into actionable knowledge, ultimately fostering long-term territorial resilience and prosperity.

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