Endogenous Development in Hungarian Districts: Examining Elements of Territorial Capital Between Stable Growth and the Post-Crisis Period

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The investigation of territorial disparities has gained increasing attention in regional science in recent decades. Although regional inequalities have been widely analyzed, the most effective strategies for reducing these disparities remain a subject of ongoing debate at the European level. This study adopts the framework of endogenous development theory, which has become a central concept in regional science. The theory represents a shift in academic thinking, moving away from a primary focus on exogenous development factors—such as central government subsidies, foreign direct investment (FDI), and European Union structural funds—toward the strategic mobilization and utilization of local resources. Importantly, this approach is not limited to rural development but applies more broadly to regional development processes as a whole.

Traditional models of regional growth have largely emphasized external drivers, including financial transfers, international capital inflows, and large-scale policy interventions. While these factors undoubtedly play an important role in supporting regional economies, they often fail to generate sustainable, long-term development when local capacities and internal structures are weak. In contrast, endogenous development theory argues that lasting economic growth depends primarily on how effectively regions can mobilize and utilize their own internal resources. These include human capital, institutional capacity, social networks, innovation potential, and local knowledge. Rather than examining these forms of capital separately, this research focuses explicitly on their interactions and cumulative effects. Such an approach enables a more comprehensive interpretation of regional development processes and provides a deeper understanding of why certain regions outperform others, even when they are exposed to similar external conditions. In this sense, the study contributes to bridging the gap between theoretical models and empirical evidence in regional science.

Within this theoretical framework, the concept of territorial capital plays a crucial role. Territorial capital encompasses the various forms of endogenous resources that shape regional development trajectories. These resources include economic capital, human capital, social capital, institutional capacity, and infrastructural assets. Instead of analyzing these dimensions in isolation, it is essential to understand how they interact and reinforce one another. The combination and interaction of these different types of capital can significantly influence regional performance, competitiveness, and resilience. Therefore, this study adopts a multidimensional perspective, emphasizing the importance of capital interdependencies rather than treating each factor independently.

Based on existing literature, human capital is widely recognized as a key determinant of regional development and a critical factor in reducing spatial inequalities. Since the 1990s, a substantial body of research has examined the role of universities and educational institutions in fostering regional growth. Human capital not only enhances productivity and innovation capacity but also increases the attractiveness of regions for firms and investors. Regions with a highly skilled workforce are more likely to attract knowledge-intensive industries and advanced technologies. As a result, technological diffusion and innovation processes are strengthened, leading to higher levels of economic output and competitiveness. Previous empirical studies have consistently demonstrated that human capital plays a significant role in shaping territorial disparities.

The present research aims to examine which indicators of endogenous regional development most strongly influence economic performance and contribute to the reduction of territorial inequalities. Furthermore, it seeks to identify the main driving forces behind

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endogenous development processes. A particular emphasis is placed on the role of human capital in Hungarian districts, where it is expected to emerge as a key factor in regional development. Within the framework of territorial capital, human capital can be considered a highly rival resource, meaning that its distribution across regions is uneven and often concentrated in more developed areas. This characteristic further highlights its importance in explaining regional disparities.

Building on previous literature and empirical findings, the study formulates several expectations. One key assumption is that immaterial forms of capital—such as human and social capital—play at least as significant a role in shaping regional development paths and spatial structures as material forms of capital, including infrastructure and financial resources. This perspective reflects a broader shift in regional science toward recognizing the importance of intangible assets in driving economic growth and innovation.

The study also takes into account the impact of global crises on regional development. In the early decades of the twenty-first century, Europe has experienced several major shocks, including the global financial crisis and the COVID-19 pandemic. These events have had profound economic and social consequences, affecting production, employment, and public spending. In many cases, governments were forced to reduce expenditures, while businesses—particularly in sectors such as hospitality—faced declining revenues or even closure. These developments led to job losses and contributed to the widening of regional inequalities. As highlighted in the literature, such crises have underscored the need to rely more heavily on endogenous factors of development. Accordingly, this research examines how global crises have influenced the key drivers of regional development and spatial disparities, with a specific focus on Hungarian sub-regions.

The empirical analysis focuses on Hungarian districts and compares two benchmark years: 2017 and 2023. This period captures both a phase of relative economic stability and the subsequent impact of global crises. Given Hungary's size and regional diversity, districts were selected as the unit of analysis, as smaller territorial units allow for a more detailed and nuanced examination of spatial differences. However, analyzing smaller regions also presents challenges, as statistical data at this level can be limited or incomplete. Despite these constraints, the use of district-level data enables a more precise identification of regional patterns and disparities.

By incorporating a temporal dimension, the study aims to identify structural changes in regional development trajectories over time. It examines how patterns of capital accumulation and the relationships between different forms of capital have evolved between 2017 and 2023. This dynamic perspective allows for an assessment of whether the key drivers of regional development have shifted in the post-crisis context. In particular, the research investigates whether there has been a transition from "hard" physical factors—such as infrastructure and financial capital—toward "soft" intangible assets, including human capital, social networks, and institutional quality.

The primary source of empirical data is the National Regional Development and Spatial Planning Information System (TeIR), which provides detailed statistical indicators at the district level. This is complemented by data from the Regional Statistical Yearbook of Hungary. It should be noted that the analysis excludes Budapest, as the capital city exhibits exceptionally high levels of capital accumulation, which could introduce bias into the results. By focusing on non-capital districts, the study aims to provide a more balanced and representative analysis of regional disparities within Hungary. At the same time, it is important to acknowledge that not all aspects of regional development can be captured through quantitative data. Certain factors—such as trust, local cooperation, and informal networks—are inherently difficult to measure, yet they may play a significant role in shaping development outcomes.

Methodologically, the study employs multivariate statistical techniques combined with spatial visualization methods. Cluster analysis is used as an initial step to identify patterns of capital accumulation and to group districts based on similar characteristics. This is followed by

Partial Least Squares Structural Equation Modeling (PLS-SEM), which allows for the analysis of complex relationships between different forms of capital and their impact on regional development. Through this approach, endogenous capital is operationalized using measurable statistical indicators, enabling a systematic examination of its role in shaping spatial disparities.

The main contribution of the research lies in identifying which combinations and interactions of endogenous capital are most effective in promoting regional development and reducing territorial inequalities. By modeling these interdependencies, the study advances the empirical application of endogenous development theory and contributes to a better understanding of the territorial capital framework proposed by Camagni. In doing so, it helps to bridge the gap between theoretical concepts and empirical analysis in regional science.

Previous research conducted by the authors has already explored spatial patterns of capital distribution using factor analysis for the year 2023. The results indicated that, by this time, the effects of global crises had become less pronounced. A general pattern of spatial concentration was observed in the case of both economic and social capital. A similar trend was identified for human capital, with each major region containing at least one district characterized by high levels of capital accumulation. However, the spatial distribution of human capital closely resembled that of economic capital, suggesting a strong correlation between these two dimensions.

The findings of the present study have important policy implications. By identifying the key drivers of regional development and highlighting the role of endogenous resources, the research can support the design of more targeted and effective development strategies. Instead of relying predominantly on external financial support, policymakers can place greater emphasis on strengthening local capacities, particularly in the areas of human capital development, innovation, and institutional quality. Such an approach could contribute to more balanced regional development and help reduce territorial disparities in the long term.

This is particularly relevant for countries like Hungary, where regional inequalities remain significant. Place-based development strategies that take into account the specific characteristics and needs of individual regions may lead to more efficient and sustainable outcomes. By focusing on the mobilization of local resources and the enhancement of endogenous capacities, regional policy can move toward a more resilient and inclusive model of development.

In conclusion, this research provides a comprehensive analysis of endogenous development processes in Hungarian districts, emphasizing the importance of territorial capital and the interactions between its various components. By integrating theoretical insights with empirical methods, the study contributes to a deeper understanding of regional disparities and offers valuable guidance for both academic research and policy-making.

keywords: endogenous development, territorial capital, regional development

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