

EXAMINING SPATIAL DIFFERENCES IN HIGH-PRESTIGE EMPLOYMENT IN HUNGARY, 2011-2022

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Abstract. The structural economic development in the cyclical period of the last decade has generated profound social changes in the Member States of the European Union, including Hungary. High-technology developments, the rise of digitalisation and the demand for highly skilled employment have had a marked impact on changes in labour market needs. The question arises: how do the changing employment trends generated by the development of the national economy affect the situation of sub-national regions? Do regional disparities increase as a result of the absorptive effects of central regions? In our study, we investigated spatial economic correlations that focused on spatial differentials in the social strata working in high-prestige occupations. Our results show that these processes have led to the identification of areas which can be defined as employment centres, since the spatial location of these areas will be an inevitable factor in the development of various spatial development strategies. In our study, we conducted our analyses using occupational statistics from the 2011 and 2022 Hungarian censuses at LAU1 territorial level. The data set used was restricted and compiled on the basis of the Hungarian Standard Classification of Occupations (HCSO-08) of the Hungarian Central Statistical Office. The main results of our analysis also show that human capital is a crucial factor in promoting economic development and reducing regional disparities, as the social structure needed to avoid the middle-income trap is considered a strategic factor in these employment trends.

Keywords: human capital, high-prestige employment, centre-periphery, spatial concentration.

Introduction

In recent decades, the employment prospects of the workforce have changed significantly as a result of tertiarization and the development of the knowledge-based economy. A significant employment transformation has been observed, especially among high-prestige workers. The recent structural changes, the development of modern post-industrial economies and the rise of digitalisation have had a particularly strong impact on employment trends and have particularly affected high-prestige groups of employees [1].

We consider it necessary to clarify which social groups are included in the group of high prestige employment. High-prestige workers are defined as workers in occupations that require the highest skill level. Occupations at high-skill level typically involve the performance of tasks which require complex problem solving and decision making based on an extensive body of theoretical and factual knowledge in a specialised field. The capacities and skills required at this skill level are usually obtained as the result of study at a higher educational institution leading to the award of a first degree or higher qualification.

Nowadays, the management of human resources has become an extremely important part of economic development in Europe and Hungary, as the social classes that play a key role in the development of regional disparities have become the determining actors in growth strategies. Policy makers invest considerable resources in engaging and developing innovative, high-tech industries on a daily basis, but relatively little research is available on the spatial distribution of human resources related to this. In general terms, high-tech growth, by its complexity, increases the incomes of high-prestige workers, thus creating opportunities for economic development through increased domestic consumption. Continuing the analysis of the issue, we can conclude that high-tech industries - intensive high-tech development, expansion of the digital economy - also have a multiplier effect on employment, as every 10 new high-tech jobs indirectly generate about 7 tertiary sector jobs. The employment rate of medium-skilled workers does not increase, but they benefit from higher wages. All this shows that the issue is complex and involves a combination of many factors that require a more in-depth analysis of the subject [2]. Economic policy choices aimed at increasing the number of high-prestige workers have two basic effects.

- The above-average incomes of high-prestige workers help increase the employment share of low- and medium-prestige workers in labour markets by stimulating local demand, a classic method of economic development.

- By employing high-prestige workers, it is possible to attract high-technology and relocate advanced sectors, thus addressing the critical issues of employment and future economic development.

Based on our studies in recent years, we can say that the processes of deep structural economic change – through profound economic structural and territorial changes – are, in a comprehensive way, the combined cause of the cross-cutting issues in employment, of which the employment issues of high-prestige workers stand out. Our research suggests that these trends are unfortunately giving rise to labour market concerns. Our research suggests that the success of a dominant theory of economic development cannot explain the peripheral conditions of employment, and so an examination of its spatial dimensions, knowledge of the endogenous sources of the area and their interrelationships can provide this together [3; 4]. In our study, we attempt to present and analyse spatial correlations that warn of dangerous trends in the transformation processes of the domestic centre and periphery and reveal facts that are inevitable for strategic development. All these contexts also inspire us to search for the answers to the territorial directions of the necessary economic growth, to the long-term strategic objectives of territorial development, which may be strongly determined by the territorial distribution, issues and dimensions of high-prestige workers.

Much of the professional debate on this topic is dominated by the professional conflict between the traditional theories of the problem, arguing that the main source of labour market rigidities is the disadvantaged employment of low-prestige workers [5; 6]. The empirical support for this traditional view [7-10] is found in the results of several professional studies, but these lack the effects of recent macroeconomic, structural, labour market and labour market changes, their interrelationships and the interpretation of the labour market trends of high-preference workers. In our view, if we only look at the trends of economic change and ignore the social factors involved, the responses to change will be misleading, since, in addition to the many institutional factors underlying the complexity of modern labour markets, social factors that cause spatial segregation also play a prominent role. Recent research has emphasised the social, economic and skill composition of the low-skilled as a cause of the greater labour market disadvantage of the low-skilled [11; 12], thus pushing the study of trends in the high-prestige labour market into the background. On this basis, we consider it crucial to note that, in our view, the displacement mechanisms of rapid job transformation are perhaps even more powerful and decisive in the development of employment disadvantage [13; 14], as this provides an opportunity to highlight the importance of skills matching, the anomalies in the employment structure and the directions of development strategies in global economies. Together, these have a significant impact on employment prospects.

The overall consequences of the economic downturns of recent years, the effects of the economic crises and the international pandemic situation have been particularly damaging, as these processes have had a cumulative impact on employment issues [15; 16]. Regardless of whether changes in labour market regulation, elements of social policy, economic fluctuations or a combination of these factors have caused the emergence of employment disadvantages, it can be said that the analysis of the subject remains an open question. In an increasingly globalised economy, where technology and digital literacy fundamentally determine skill requirements and thus increase the risk of labour demand polarisation, policy makers face important challenges in improving the labour market situation [17-20].

Materials and methods

In the quantifiable analysis part of our study, we examined the European Union Member States (EU-27) through the proportions of high-prestige employment in 2011 and 2022. In addition, we used occupational statistics from the Hungarian censuses by districts (LAU-1). According to the uniform census definition, a person aged 15 and over is considered employed if he/she has been engaged in an activity providing an income for at least one hour in the 7 days preceding the reference date or if he/she has been temporarily absent from his/her regular occupation. In our survey, we did not narrow down the employed population by age group, so we used the total number of employed persons aged 15 and over. The data set analysed was based on the classification of occupations by skill level as defined by the Standard Classification of Occupations (HCSO-08). The HCSO-08 classification groups occupations into a four-digit system, which is integrated into a total of ten main groups (1-9, 0). As it was mentioned above, the occupations included here require complex problem-solving and decision-making skills that

require specific knowledge (1 – Managers, 2 – Professionals, 3 – Technicians and associate professionals).

The spatial structure analysis was carried out using the location quotient method (LQ), the formula of which is described below:

$$LQ = \frac{e_{i,f}/E_f}{e_i/E}, \quad (1)$$

where $e_{i,f}$ – number of persons employed in the i -th district at high-skill level,
 e_i – total number of employees in the i -th district,
 E_f – number of employees at high-skill level nationally,
 E – total number of employees nationally.

The aim of the spatial structure analysis was to get a complete picture of spatial differences in social competitiveness, considering the spatial changes between 2011 and 2022. The statistical data used in our study were provided by the Hungarian Central Statistical Office.

Results and discussion

Employment in high-prestige occupations, is a strong indicator of the development of national economies. In this part, we present our main quantifiable data analyses. Taking the data of the European Union (EU-27) Member States, it is possible to see which groups of countries are homogeneously distributed in terms of territory, and which are the most and least developed in terms of employment. Below the average of the EU-27 high-prestige employment rates, we observe mostly the values for the Member States that joined the EU in 2004 or afterwards and for the Southern European Member States. At the same time, the highly developed Member States with employment rates above the EU-27 average are those with higher economic potential and higher income levels. These results show a picture of a bipolar Europe, which is also reflected in several other competitiveness indicators, resulting in the emergence and cumulation of territorial imbalances (Figure 1).

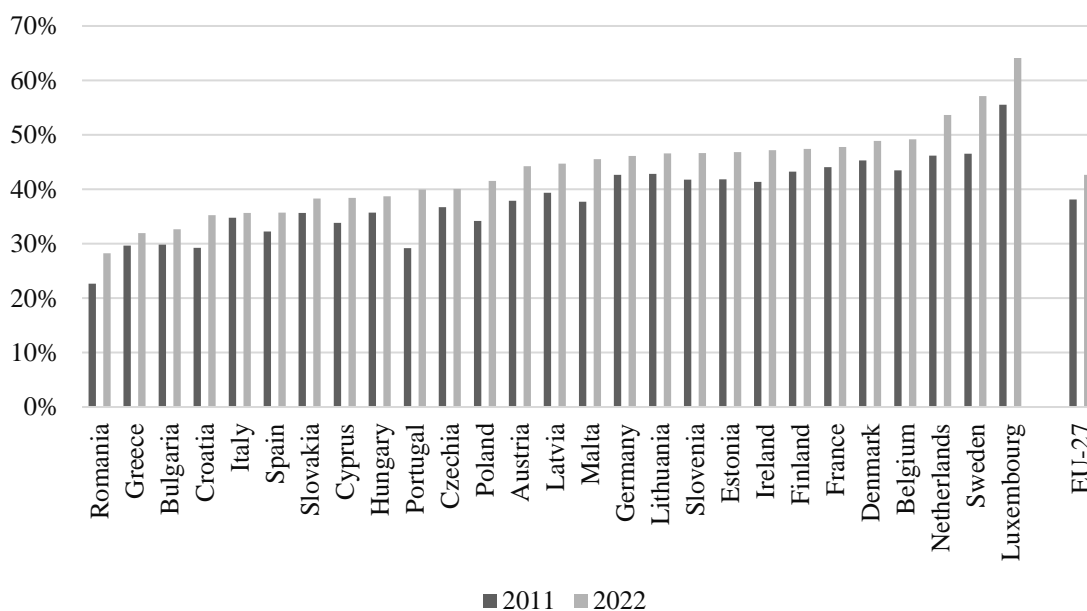


Fig. 1. Percentage of high-prestige employment in EU Member States in 2011 and in 2022

Closely related to the figures for EU Member States, the following are the latest census data for the Hungary, at district (LAU-1) territorial level. Our results clearly show that, based on the data from the last two censuses (2011, 2022), a higher average share of people employed in occupations requiring high skill levels and a higher rate of growth are closely correlated with the definition of employment centres in areas with higher value-added jobs. This result also highlights the centre-periphery

relationship. On this basis, we conclude that the spatial concentration of employment in high-prestige occupations in Hungary has undergone a visible increase and concentration between 2011 and 2022. Based on the data analysed, a parallel can be drawn between the employment rates of the EU-27 and Hungary, as the more economically advanced Member States have a higher concentration of high-prestige jobs, including those with higher educational attainment. In the case of Hungary, the areas defined as employment centres (e.g. Budapest and its agglomeration, the Lake Balaton region, Western Transdanubia) show a significant concentration of high-skilled occupations, as these areas also show a significantly higher increase in the number of high-skilled occupations over the period (Figure 2).

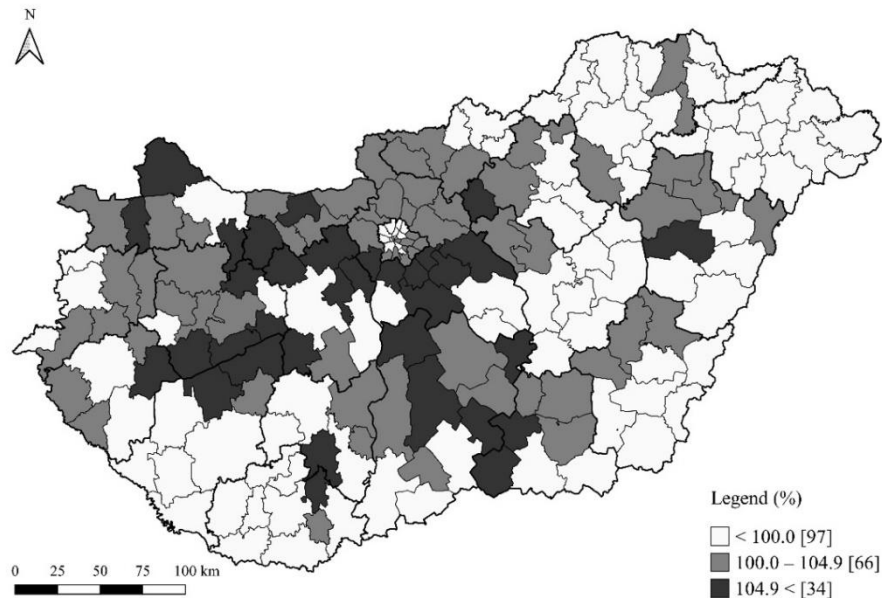


Fig. 2. Percentage of change in the spatial concentration (LQ) of high-prestige employment from 2011 to 2022 in Hungary (2011 data = 100.0%)

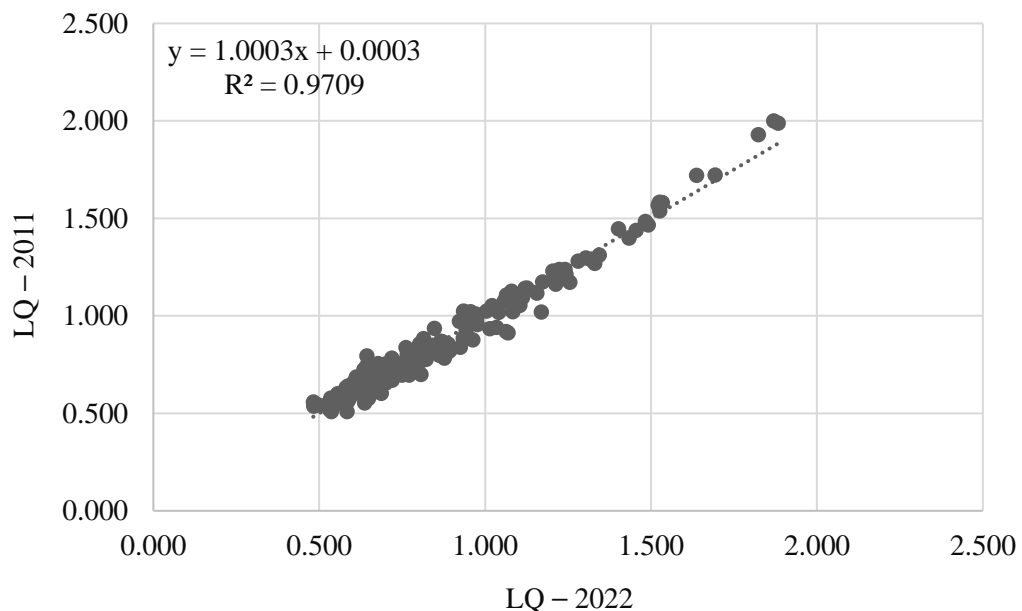


Fig. 3. Correlation between 2011 and 2022 spatial concentration (LQ) of high-prestige employment in Hungary

In further analysing our data, it is also worth considering the changes underlying the spatial structure, as it is important to consider the impact of the spatial concentration of high-prestige employment (LQ) in 2011 on the spatial concentration values in 2022. Our analysis reveals

($R^2 = 0.9709$) that the spatial structural changes in the spatial concentration of high-prestige employment did not change significantly, thus clearly proving our hypothesis that the extent of spatial employment gaps has not decreased over the last decade, and that there has been no significant catching-up (Figure 3).

The most obvious is the “Budapest-centrism”, which is reflected in the high proportion of high-prestige employees. It can be seen that the development of the centre, in this case Budapest, is leading to an increase in the flow of the workforce in this direction, with a simultaneous increase in spatial inequalities, clearly showing the growth and development of the centre and the lagging behind of other regions. All this shows that uneven changes in the economic structure and their effects on the labour market can cause spatial social transformations that can reinforce the cumulation of peripherality. In the long term, these factors can lead not only to the economic peripheralization of areas, but also to a high degree of social amortization. Trends in these processes show a shift from the semi-periphery towards the periphery, which also generates a steady increase in the resource siphoning effect of the centre regions.

Conclusions

1. The economic restructuring of the period under review, implementation of industrial developments, dynamic growth of priority centre regions resulting from the location factors of foreign multinational companies, concentration of service sectors, all reinforced the drain effect towards these regions.
2. High-prestige occupations generated higher incomes, so their spatial concentrations also had a significant (economic, social) draining effect on disadvantaged areas.
3. Education, adult education, labour market integration and increasing equal opportunities for disadvantaged groups will be one of the key issues of the 21st century, as the territorial development of Europe, including Hungary, and the growth of the productivity of the national economy depend significantly on the level of education and training of society and workers.

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Author contributions

Conceptualization, L.B. and K.J.; Data collection and Methodology, L.B.; Formal analysis, K.J.; Investigation, L.B. and K.J.; Writing-review and editing, K.J.; Visualization, L.B. All authors have read and agreed to the published version of the manuscript.

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