

## The Significance of Human Capital in the Development of Territorial Units in the Context of the Formation of the New Economy

**Stanisław Korenik**

Wroclaw University of Economics and Business

e-mail: [stanislaw.korenik@ue.wroc.pl](mailto:stanislaw.korenik@ue.wroc.pl)

ORCID: [0000-0002-7629-0484](https://orcid.org/0000-0002-7629-0484)

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**Quote as:** Korenik, S. (2026). The Significance of Human Capital in the Development of Territorial Units in the Context of the Formation of the New Economy. *Biblioteka Regionalisty. Regional Journal*, 26, 1-8.

DOI: [10.15611/br.2026.1.01](https://doi.org/10.15611/br.2026.1.01)

JEL: F63, R11

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### Abstract

**Aim:** This study aimed to identify and assess the impact of human capital on the functioning and development of territorial units.

**Methodology:** The article employs a broad critical analysis of the literature, an examination of secondary and primary data, and an expert method.

**Results:** The author demonstrates that human capital, along with its qualitative variant – creative capital – exerts a strong and intensifying influence on the development of selected territorial units, which contributes to the growth of disparities.

**Implications and recommendations:** The findings indicate that human capital constitutes the driving force of territorial units, therefore further efforts should be directed towards its qualitative development.

**Originality/value:** The article's value lies in the systematisation of knowledge on the significance of human capital in the development processes of territorial units.

**Keywords:** territorial development (of local and regional units), human capital, creative capital

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### 1. Introduction

In contemporary socio-economic development processes, the influence of human capital is gaining increasing importance. This observation aligns with a broader trend in regional development studies, where intangible resources are increasingly recognised as determinants of competitiveness and resilience. It also emerges as a crucial factor contributing to differences and disparities in the

development levels of territorial units and in the growth of spatial systems of various scales. Consequently, in scientific studies devoted to socio-economic development (particularly in its territorial dimension), researchers increasingly consider not only physical and infrastructural factors but also intangible resources, including human capital. The literature increasingly emphasises its role as a strategic asset that determines regions' competitiveness and capacity to adapt within a knowledge-based economy. It is widely acknowledged that human capital has become a key factor shaping competitiveness at the regional and local levels (Korenik, 2024). Importantly, as noted by Storper and Scott (1995), "knowledgeable people are not evenly distributed in space".

When describing and interpreting territorial disparities, it is argued that the uneven level and varied dynamics of economic development among different territorial units are most often explained by the differentiated quality of human resources (human capital) residing in these areas (Podgrodzka, 2016). In the case of Poland, an example is provided by the findings of Janc, who observed that *the differentiation of human capital clearly corresponds to the established socio-economic landscape of Poland. Two main dimensions of disparities can thus be distinguished: east-west, and cities with their adjacent areas versus other territories. This differentiation is of a universal nature, as it is maintained for almost all characteristics describing human capital. Particularly noteworthy are strong spatial linkages, especially within metropolitan areas and in the eastern part of the country* (Janc, 2009). Such phenomena are also observed in other countries, as confirmed by Borowiec and Dorocki, who demonstrated a strong relationship between the quality of human capital and the innovativeness of regions in France. They further concluded that in the development of the territorial units studied in that country *the fundamental role is played by the quality of human capital and the adaptive capacities of a well-educated workforce to new conditions and challenges of civilisational development* (Borowiec & Dorocki, 2011).

## 2. The Concept of Human Capital

Capital may be understood as a resource (a tangible object or phenomenon) capable of generating new value (income). It is increasingly emphasised in contemporary debate that human capital, in its 'standard definition', has replaced the notion of labour within the classical framework of production factors (Makarewicz-Marcinkiewicz, 2013). This shift also applies to considerations within regional development theory, where human capital, having become one of the key drivers of regional growth, has redefined other factors. Moreover, numerous partial determinants of this process have been identified in more detailed studies thanks to its inclusion.

At the same time many scholars note that in relation to human capital itself, several research trends have emerged in recent years (Gwosdz et al., 2019):

- the transition from a quantitative to a qualitative perspective on human capital (from the number of years of formal education and attained level of schooling to the actual quality of that education),
- the transition from an 'input-based' approach (formal education) to an outcome-based approach (actual skills, competencies, and qualifications),
- the transition from an individual-based approach (the stock of people with a given level of human capital) to a networked/territorial perspective (where innovation results from interactions among individuals with an adequate level of human capital).

In the framework of the new growth theories – commonly referred to as endogenous growth theories – it is assumed that technological progress has an endogenous character, in contrast to neoclassical theories in which technological progress is exogenous. Within this framework, two main approaches to technological progress are distinguished. The first attributes a fundamental role to investment in research and development (R&D), while the second places particular emphasis on human capital (Gawlikowska-Hueckel, 2003). Regardless of the chosen approach, the concept of investment encompasses not only the

accumulation of physical capital but also expenditure on research and development and on education, i.e. the accumulation of human capital.

As a result, it can be argued that in both perspectives, human capital – namely, people and the growth of their skills – plays a crucial role, leading to increased productivity of entire territorial systems. For this reason, endogenous growth theories assume that human capital influences the long-term growth rate. Investment in human capital generate internal effects in the form of increased labour productivity and external effects in the form of higher productivity of physical capital. Thus, human capital is the element of the contemporary economy that stimulates the productivity of the economies of the areas where it is present. As noted by Sztudynger (2005), human capital becomes a fundamental category in endogenous growth theory, where the Solow growth model is juxtaposed with real business cycle models.

The origins of the concept of human capital date back to the second half of the twentieth century, when it was introduced into the social sciences and popularised in the economic literature primarily by Becker (1964, 1990), Schultz (1963, 1971), and Mincer (1958, 1974) (cf. Czapiński, 2008). A broad yet comprehensive definition of this capital was proposed by Domański, who described it as *a resource of knowledge, skills, health, and vital energy contained within a society. This resource is determined once and for all by the genetic features of a given population, but it can be expanded through investments known as investments in man: in people, in human capital, in human life* (Domański, 1993). This approach presents a wide spectrum of elements that combine social factors, education, individual talents, and many others.

The significance of human capital as a 'self-reproducing' value has undoubtedly grown with the widespread emphasis on the concept of sustainable development, where it becomes one of the key factors and its enhancement an outright necessity. This results from the fact that if this capital is expressed in human knowledge and skills, then only through their expansion and rational use can the objectives of sustainable development be achieved, while simultaneously contributing to the competitive position of a given.

Although human capital constitutes a component of social capital, the latter extends far beyond economics and encompasses numerous sociological, ethnic, and cultural phenomena. According to Woolcock, human and social capital are complementary (Przygodzki, 2004), whilst the distinction between them is clear and significant. As described by Klimczak (2006), human capital is private, depletable, and subject to reproduction and expansion, arising from individual decisions. In contrast, social capital belongs to a specific group, is non-transferable, does not require investment, and does not diminish through use, instead it appreciates over time.

The quality of human capital is undoubtedly conditioned by the solutions adopted within the education system (e.g. the quality of schooling), but also by so-called family education, which is associated with the intergenerational transmission of human capital. As Domański (2006) observed, the process of creating capital results from the interconnections and interdependencies between the education system and economic development, leading to various forms of mutual dependence and cumulative effects, and ultimately producing spatial imbalances and the growth of disparities. The term *capital*, when applied to individuals as well as to entire social groups, their skills, or predispositions, is grounded in the assumption of contemporary economics that any object or phenomenon capable of generating added value constitutes capital.

The origins of the human capital theory in the context of the new economy are linked to the inability to explain a significant share of U.S. income solely through physical capital (Domański, 1993). The law of diminishing returns – based on the assumption that profits from successive investments decrease – becomes an inadequate framework for explaining and describing contemporary regional development, as knowledge, one of its most important factors, does not conform to this law.

In economic theory, the classics had already noted that the human individual could be regarded as capital. However, this was not the case until Mincer in 1958 introduced the concept of investing in human capital. Such investment occurs first in school and subsequently through the acquisition of

professional experience (Herbst, 2007). As a result, human capital was defined as the sum of acquired knowledge, measured by the length of schooling and age (Herbst, 2007). This approach, however, is overly simplified and treats the acquisition of knowledge too formally, equating it directly with its accumulation. Knowledge acquired may often be inadequate to current needs, and skills may be lost, for instance, due to not practising a given profession or due to the decline in human capacities with age.

Nevertheless, many studies stress that human capital alone does not directly translate into, for example, growth in GDP per capita. For this reason, it has been proposed that economic growth models should integrate human capital with technological progress. According to Cichy and Malaga, such an approach is promising and may provide a better explanation of the contemporary relationships underlying economic growth, though it remains highly challenging due to its complexity (Herbst, 2007).

In contemporary research, human capital is increasingly indicated as the foundation of sustainable growth, while Glaeser even argued that this form of capital has become the fundamental factor determining the success of development in a given area, particularly in cities (Zasina, 2015).

Returning to the conceptual dimension of human capital, one must agree with Gaczek and Komorowski (2005) that this notion is too complex to define precisely, as it also encompasses intangible values, often specific to and shaped by the cultural traditions of a given area. It is pointed out that, just like financial or material capital, human capital – through positive interlinkages among them and synergy effects – tends to concentrate. This means that studying human capital requires a territorial approach (Gaczek & Komorowski, 2005). Moreover, the increasing significance of the qualitative features of this capital is observed as a factor contributing to differences in the level of regional development. This results from the fact that the inhabitants of a region, through their knowledge, creativity, skills, and competences, directly or indirectly shape the functional specificity of that area (Churski et al., 2020). Human capital functions as a fundamental source of innovation, and is also subject to contemporary unification processes, reflecting ongoing globalisation and the creation of a single market with significant standardisation of products. These processes necessitate the harmonisation of education systems and production processes. This directly affects the possibility of comparing the quality of human capital resources, which, while not losing their specific features derived from place-based contexts, unlike social capital, increasingly acquire global characteristics typical of the economy as a whole rather than of individual geographic areas.

### **3. Human Capital and the Differentiation of Territorial Development**

The aforementioned unification and harmonisation of educational processes and economic systems, however, do not lead to an even distribution of human capital across territories. On the contrary, an increase in mobility is observed alongside standardisation. Moreover, the higher the level of human capital represented by individuals, the greater their propensity to migrate, contributing to disparities in the spatial distribution of human capital. Naturally, the greatest concentration occurs in highly developed areas, typically modern metropolitan regions and their surroundings. Concentrated human capital resources, coupled with significant internal differentiation (in terms of age, qualifications, and education), foster the development of a territorial unit in a more comprehensive manner than in the rest of the economy.

As a key factor in regional and local development, human capital is reflected in numerous theories addressing this issue. However, with the advancement of the knowledge-based economy and the emergence of new theoretical concepts of regional development, greater emphasis has been placed on the quality of this capital rather than its quantity.

For example, in 1995 Etzkowitz and Leydesdorff introduced the Triple Helix model to describe the dynamics of relationships among universities, industry, and government, where human capital naturally constitutes the primary catalyst (Etzkowitz & Leydesdorff, 1995). Later, Etzkowitz (2002)

suggested within this concept a specific configuration of interactions exerting a positive influence on the development and modernisation of the socio-economic system of a region. As a result, regional development gains comprehensive support, leading to reinforcement and acceleration (Tuziak, 2017). In assessing the significance of human capital for developing territorial units, it should be underlined that this has been, and continues to be, one of the most critical factors. Its importance in shaping the situation of territorial units has been growing steadily in parallel with dynamic socio-economic transformations. Over time expectations regarding this capital have increased, and the capital itself has also transformed. Most notably the quality dimension of human capital has gained importance, while the significance of its quantitative dimension has been gradually diminished.

Note that these transformations have a distinctly territorial character. An example is the concept of creative capital, which represents an extension and adaptation of the idea of human capital to the contemporary conditions of the digital economy.

#### 4. Creative Capital as a New Form of Human Capital

One of the first scholars to point out the role of creativity in regional development was Törnqvist (1983), in his study *Creativity and the Renewal of Regional Life*. His concept of a creative environment was associated with the availability of knowledge resources and the ease of their diffusion, which ultimately translated into their accumulation within a region and was manifested in the competencies of people engaged in various activities. This process resulted in the creation of creativity expressed in both tangible and intangible values produced in the region.

However, the breakthrough in this field is commonly attributed to Florida in *Cities and the Creative Class* (2005). Nevertheless, some scholars criticise Florida's approach for overemphasising cultural factors while underestimating structural economic determinants, whilst Florida (2005) himself underlined that his intention was not to replace the theory of human capital with his own theory of the creative class, but rather to highlight more adequate standards for measuring human capital and skills compared to the existing approaches that primarily relied on indicators related to formal education (Gwosdz et al., 2019). The main idea of this publication is that creative capital, as a derivative of human capital, has played an increasingly significant role in the development of territorial units, eventually becoming a leading factor. Landry (2000) also pointed to this, noting that creative capital generates a distinctive milieu, which stimulates creativity throughout a region's socio-economic system through spillover effects. Under contemporary conditions, Florida further suggested that territorial units (cities) must emphasise improving the quality of life, education, and work, thereby creating attractive conditions for individuals characterised by creative attitudes (the creative class). He also argued that overly rigid, archaic, and deeply rooted ties within a regional community may constitute a barrier to developing a territorial unit, for instance, by negatively affecting the diffusion of innovation.

The remedy, therefore, lies in the presence of residents with high qualifications and skills, who are simultaneously distinguished by non-routine, innovative, and creative attitudes. Such individuals directly shape creative capital – the creative class.

A comparison of human and creative capital is presented in Table 1.

Table 1. Human Capital versus Creative Capital in Selected Areas

Areas of Analysis	Human Capital	Creative Capital
Definition	A resource of knowledge, skills, health, and individual experience	The ability to generate new ideas, solutions, and innovations
Sources	Formal education, training, professional experience, and health	Creative environment, culture, interdisciplinarity, openness
Representatives	Teachers, doctors, engineers, technicians	Artists, designers, programmers, scientists, entrepreneurs

Areas of Analysis	Human Capital	Creative Capital
Impact on the Economy	Increased efficiency, development of traditional sectors	Creation of new sectors, products, business models – start-ups
Territorial Concentration	Academic centres, cities with advanced education and services	Metropolises, creative districts, technology parks
Support	Investment in education, health, and training	Support for innovation, culture, start-ups, and cross-sectoral cooperation
Relations	Creative capital as a specialised form of human capital	Requires human capital as its foundation, but adds value through innovativeness and entrepreneurship

Source: author's own elaboration.

As shown in the above comparison, creative capital always originates from human capital, yet not every form of human capital automatically becomes creative capital. The latter is embodied by individuals who possess competencies characterised by non-standard approaches, often involving risk when implementing complex projects, where what matters is not only a high level of education but also the ability to work in teams at different levels. A defining feature of creative capital is mobility and flexibility in all dimensions, closely linked to the so-called creative sectors, where creative occupations are found. For representatives of these professions, the relationship between quality of life in a given area and openness to diversity and difference is particularly important. Through their decisions about where to live, creative class members contribute to intensifying socio-economic development processes within a given territory. High-quality services must characterise such locations, while amenities – that is, attractions, comfort, and conveniences – also play an essential role. Such places are limited to ultramodern metropolises in highly developed countries. Importantly, it is stressed that work follows the creative class, not vice versa. As a result, modern forms of activity tend to be localised in strictly limited and highly concentrated places.

## 5. Conclusion

Human and creative capital's impact on the development of territorial units (e.g. cities, regions, metropolitan areas) is multidimensional and dynamic, and their importance continues to grow, while both the domains of their influence and the factors generating them are evolving. The foundation of these changes lies primarily in the emerging rules of the new economy. As a result, with the growth and development of the knowledge-based economy, the importance of human and creative capital increases – conversely, their expansion stimulates the development of this economy. Such synergy leads to a self-reinforcing feedback loop, particularly within areas of concentration of modern economic activities. In this context, modern metropolises and their surroundings become the primary territorial units of development, contributing to rising disparities in development levels among different territorial units. The processes triggered by human capital in a given area include, above all, the concentration of economic activity, particularly in advanced sectors of the economy. This, in turn, drives migration toward locations offering better work and professional development conditions. The consequences are the depopulation of peripheral areas and the outflow of enterprises from those areas in search of employees with appropriate qualifications.

In areas where human capital is concentrated, social infrastructure and public spaces are rapidly developing, which become increasingly functional and attractive to residents. When creative capital emerges under such conditions, an additional rise in the value of a given location can be observed, manifested, among others, through the development of innovation, culture, and new models and forms of activity such as start-ups. As a result, a territorial unit that becomes a hub for the location and development of these forms of capital is characterised by a more intelligent, sustainable, and inclusive environment, and increasingly attracts investment in advanced sectors such as information technologies, cultural industries, and biotechnology.

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## Znaczenie kapitału ludzkiego w rozwoju jednostek przestrzennych w realiach kształtowania się nowej gospodarki

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### Streszczenie

**Cel:** Celem publikacji jest identyfikacja i ocena wpływu kapitału ludzkiego na funkcjonowanie i rozwój jednostek przestrzennych.

**Metodyka:** W artykule wykorzystano szeroko krytyczną analizę literatury przedmiotu, analizę danych zastanych i informacji pierwotnych oraz metodę ekspercką.

**Wyniki:** W artykule wskazano, że kapitał ludzki oraz jego jakościowa odmiana – kapitał kreatywny w sposób intensyfikujący oddziałują na rozwój wybranych jednostek przestrzennych, co w efekcie prowadzi do narastania dysproporcji.

**Implikacje i rekomendacje:** Poczynione ustalenia wskazują, że motorem napędowym jednostek przestrzennych jest kapitał ludzki, dlatego należy dążyć do jego jakościowego rozwoju.

**Oryginalność/wartość:** Wartość artykułu stanowi uporządkowanie wiedzy na temat znaczenia kapitału ludzkiego w procesach rozwoju jednostek przestrzennych.

**Słowa kluczowe:** rozwój przestrzenny (jednostek lokalnych i regionalnych), kapitał ludzki, kapitał kreatywny

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