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# Human Capital of Young Europeans in the Context of Contemporary Labor Market Challenges

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***Abstract:***

***Purpose:*** *The purpose of this article is to analyze and assess the level of human capital among young Europeans from the perspective of the challenges of the contemporary labor market.*
***Design/methodology/approach:*** *The level of human capital of young people in selected European countries was diagnosed using the development pattern method developed by Z. Hellwig. Additionally, the Ward hierarchical clustering method was used, where a dendrogram was applied to group countries based on the similarity of features. The synthetic measure by Z. Hellwig was calculated on the basis of 24 diagnostic features. These features are organized into four groups that characterize the human capital of young people both directly and indirectly. The first group concerns the activity of young people in terms of broadly understood education and the use of digital skills. The second group of diagnostic features relates to young people's activity in the labor market, through which their human capital may either appreciate or depreciate. The third group pertains to the health status of young people. The fourth group of features characterizes the social and cultural activity of young people, which shapes their interpersonal skills and fosters creativity. The study covered young people (aged 15–29) in 29 European countries.*
***Findings:*** *In light of the features adopted for the study, the level of human capital among young people in European countries varies significantly. The countries with the highest levels of human capital are the Netherlands, Switzerland, and Norway. A notable observation is the relatively large group of countries (11 in total) where the level of human capital remains low. These include: Germany, Spain, Latvia, Hungary, Cyprus, Slovakia, Serbia, and Greece. The lowest levels of human capital among young people are observed in Italy, Bulgaria, and Romania. The presented study may serve as a basis for further, in-depth analyses of the impact that deficits in human capital among young people have on the economic development of European countries.*
***Practical implications:*** *The research findings may serve as guidelines for public authorities in the development and evaluation of strategies for human capital development in the countries covered by the study.*
***Originality/value:*** *This study attempts to fill a research gap regarding human capital among young people in European countries from the perspective of the challenges posed by a transforming economy—one that is increasingly dependent, on the one hand, on digital technologies, and on the other, on human creativity and innovative activity. The diagnostic features (selected by the author of the article) used to characterize human capital were*

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*chosen to best reflect the knowledge, skills, and experiences necessary in today's labor market.*

***Keywords:*** *Labor market, spatial disparities in the human capital of young people, youth education, Z Hellwig's method, Ward's agglomerative clustering method.*

***JEL codes:***

***Paper type:*** *Research article.*

## 1. Introduction

Today, human capital increasingly influences the socio-economic development of countries and regions (Jabłoński, 2012). A high level of human capital, by affecting the overall productivity of production factors (Nelson and Phelps, 1966) and shaping the capacity for innovation creation and diffusion, allows less-developed countries to catch up with leaders in this area (Benhabib and Spiegel, 2005). An insufficient stock of human capital in a catching-up country may lead to a deepening of developmental disparities.

This article contributes to the body of research concerned with assessing the level of human capital at the national and regional levels. Despite numerous conceptual frameworks for measuring human capital (Roszkowska, 2013), it remains an area of research that continues to generate discussion. This is largely due to the complexity and multidimensionality of human capital, as reflected in its various definitions.

Human capital is expressed through knowledge, skills, and attitudes, and is accumulated through formal and non-formal education as well as through the experience gained in various types of work. As research indicates, its sources also include innate personality traits (Cunha and Heckman, 2007), talents (Comunian, England, Faggian, and Mellander, 2021), cognitive abilities (Islam, 2010), and social and cultural capital (Dokurno, 2017).

The purpose of this article is to analyze and assess the level of human capital among young Europeans in selected countries, from the perspective of the challenges posed by the contemporary labor market.

The level of human capital of young people in selected European countries was diagnosed using Z. Hellwig's development pattern method. In addition, Ward's agglomerative clustering method was employed, using a dendrogram to group countries based on the similarity of characteristics.

## 2. Literature Review

The origins of the human capital concept can be traced back to the history of economic thought. As early as Petty (1899), Smith (1776), Farr (1853), and Engel (1883), scholars recognised that individuals, along with their acquired knowledge, skills, and abilities, should be treated as traditional assets, as they constitute an essential component of national wealth.

In contemporary economic theory, human capital occupies a central place in growth models (Lucas, 1988; Romer, 1990; Barro and Sala, and Martin, 1995). Analysing its impact on economic activity, productivity, and innovation—both at the microeconomic and macroeconomic levels—requires, first and foremost, a reliable measurement.

The intangible and multifaceted nature of human capital presents a significant research challenge. Economists have adopted income-based, cost-based, and qualitative methods to measure human capital (Le, Gibson, and Oxley, 2005; Jones and Fender, 2011; UNECE, 2016). Cost-based approaches aim to capture all expenditures related to the formation of human capital, such as spending on education, healthcare, and training.

Income-based methods seek to estimate future returns on investments in human capital. Qualitative methods rely on sets of indicators associated with the flows of investment in human capital, reflecting individuals' knowledge, skills, and their educational, professional, and social engagement.

It is important to note that there is no single, unified set of indicators for measuring human capital. The literature offers numerous proposals representing diverse research approaches.

Among them, qualitative methods are the most direct, with carefully selected partial indicators often forming the basis for constructing synthetic indices that enable the assessment of human capital at regional and national levels.

Likewise, the World Economic Forum's Global Human Capital Index incorporates indicators such as school enrolment, educational attainment, literacy, labour market participation, and the skill composition of the employed population. In these cases, statistical data derived from population censuses or administrative sources must be consistent across countries in a given research period (Samans, Saadia, Till, and Ratcheva, 201).

On the basis of the relevant literature rewiew and previous research on human capital measurement, an attempt was made to develop an original synthetic human capital index characterising the youth population. For the purposes of this study,

human capital is defined as "a stock of knowledge, skills, health, and vital energy embedded in society" (Domański, 1993).

According to S. Domański (1993), "it is determined once and for all by the genetic characteristics of a given population, but it can be expanded through investments—investments in people, in human capital, in human life." This operational definition enabled the subsequent selection of appropriate diagnostic variables (Table 1).

## 3. Research Methodology

The level of human capital among young people was examined on the basis of 24 diagnostic features. These features are grouped into four categories that directly or indirectly reflect components of human capital. The first group concerns the activity of young people in terms of broadly understood education and the use of digital skills.

The second group of diagnostic features relates to young people's activity in the labor market, through which their human capital may either appreciate or depreciate. The third group pertains to the health status of young people. The fourth group of features characterizes the social and cultural activity of young people, which shapes their interpersonal skills and fosters creativity (Table 1).

The diagnostic features used to characterize human capital were selected arbitrarily, with the aim of reflecting as accurately as possible the knowledge, skills, and experience necessary in the contemporary labor market. Their selection meets three fundamental criteria: substantive, formal, and statistical. Among the diagnostic features, both stimulants (15 features) and destimulants (9 features) were included.

The statistical data used in the study were sourced from Eurostat databases and refer primarily to the year 2024. In cases where 2024 data were unavailable, data from 2023 and 2022 were used instead. The study employed the taxonomic method developed by Z. Hellwig (1968). In this approach, the level of human capital development is measured by the distance of individual objects (countries) from a designated model (i.e., the maximum value for stimulants and the minimum value for destimulants).

The study focused on the age group of 15–29 years, under the assumption that this group represents the labor supply that will determine, in the long term, the socio-economic development of countries.

In the first stage of the research, a statistical database was constructed. Next, destimulants were transformed into stimulants, and the diagnostic features were standardized using the so-called zero-one formula, which accounts for the arithmetic mean and standard deviation of the standardized feature set (see formula (1)).

***Table 1.*** *Diagnostic features adopted in the own study*

| **Name of the diagnostic feature** | |
|---|---|
| **The activity of young people in terms of broadly understood education and the use of digital skills** | |
| $x_1$ | Ratio of young people (in the age group of 15-29 years) in the total population |
| $x_2$ | Share of young people with less than primary, primary and lower secondary education (levels 0-2 - International Standard Classification of Education) in the surveyed population |
| $x_3$ | Share of young people with tertiary education (levels 5-8 - International Standard Classification of Education) in the surveyed population) |
| $x_4$ | Ratio of participation in non-formal education and training of young people (in the age group of 20-29 years) |
| $x_5$ | Young people who have written code in a programming language |
| $x_6$ | Young people who have copied or moved files between folders, devices or on the cloud |
| $x_7$ | Young people who downloaded or installed software or apps (%) |
| $x_8$ | Young people who have created files integrating elements such as text, pictures, tables, charts, animations or sound (%) |
| $x_9$ | Young people who used spreadsheet software (%) |
| $_{10}$ | Young people early leavers from education and training (%) (in the age group of 18-24) |
| **The activity of young people in the labor market** | |
| $x_{11}$ | Youth employment (in the age 20-29) |
| $x_{12}$ | Temporary employees young people (%) |
| $x_{13}$ | Involuntary part-time employment as percentage of the total part-time employment for young people |
| $x_{14}$ | Youth unemployment 15-29 (%) |
| $x_{15}$ | Youth long-term unemployment rate (12 months or longer) |
| $x_{16}$ | Young people neither in employment nor in education and training |
| **The health status of young people** | |
| $x_{17}$ | Young people having a long-standing illness or health problem |
| $x_{18}$ | Young people having a sever level of disability (activity limitation) |
| **The social and cultural activity of young people** | |
| $x_{19}$ | Young people participating in formal voluntary activities |
| $x_{20}$ | Young people participating in active citizenship |
| $x_{21}$ | Young people participating in cultural activities (cinema) in the last 12 months |
| $x_{22}$ | Young people participating in cultural activities - Live performances (theatre, concerts, ballet) in the last 12 months |
| $x_{23}$ | Young people participating in cultural activities - Cultural sites (historical monuments, museums, art galleries or archaeological sites) in the last 12 months |
| $x_{24}$ | Young people participating in sports events in the last 12 months |

***Source:*** *Author's calculations.*

$$Z_{ik} = \frac{x_{ik} - \bar{x}_k}{s_k} \tag{1}$$

where:
$z_{ik}$ – the standardized value of trait $k$ in unit $i$,
$x_{ik}$ – the absolute value of feature $k$ in unit $i$,
$\bar{x}_k$ – arithmetic mean of feature k,
$s_k$ – standard deviation of feature $k$.

The development pattern was then defined as the object with the highest values for the stimulants.

The distance between the individual countries and the $P_0$ object (pattern), marked as $c_{io}$, was calculated using the formula:

$$c_{i0} = \sqrt{\sum_{k=1}^{K} (z_{ik} - z_{0k})^2} \tag{2}$$

($i$ = 1, 2, 3, ..., $N$).

The created $c_{i0}$ variable, according to formula (1), is not normalized. In order to meet this requirement, a so-called relative taxonomic development meter is constructed, which is calculated according to the formula:

$$d_i = 1 - \frac{c_{i0}}{c_0} \tag{3}$$

($i$ = 1, 2, 3, ..., $N$),

where:

$$c_o = \bar{c}_o + 2 \cdot s_o \tag{4}$$

$\bar{c}_o$, $s_o$ – respectively the arithmetic mean and the standard deviation of the $c_{i0}$ sequence ($i$ = 1, 2, 3, ..., $N$);
$d_i$ – synthetic indicator;

whereas:

$$\bar{c}_o = \frac{1}{N} \cdot \sum_{i=1}^{N} c_{i0} \tag{5}$$

and

$$s_o = \sqrt{\frac{1}{N} \cdot \sum_{i=1}^{N} (c_{io} - \bar{c}_o)^2} \tag{6}$$

Synthetic measure of development $d_i$ (3) takes values from 0 to 1. The closer the value of the $d_i$ measure is to one, the less distant an object, in this case a country, is from the benchmark and the higher is the level of human capital of its young residents. However, values below zero may occur. This may happen, for example, in the case of extremely low levels of development in individual objects (countries).

The synthetic measure by Z. Hellwig was used to identify four groups of European countries characterized by different levels of human capital among young people.

These are accordingly:

- group I – countries with the highest level of human capital among young people, where $d_i \geq \overline{d_i} + S_{di}$,

- group II – countries with a medium level of human capital among young people, where $\overline{d_i} \leq d_i < \overline{d_i} + S_{di}$,

- group III – countries with a low level of human capital among young people, where $\overline{d_i} - S_{di} \leq d_i < \overline{d_i}$

- group IV – countries with the lowest level of human capital among young people, where $d_i < \overline{d_i} - S_{di}$,

where:
$d_i$– value of the synthetic indicator,
$\overline{di}$ – average value of the synthetic indicator $d_i$,
$S_{di}$– standard deviation of the indicator $d_i$.

## 4. Research Results and Discussion

The results of the author's own research revealed a moderate degree of variation in the diagnostic features (Table 1). The coefficient of variation ranged from 8.9% to 91.0%. The European countries included in the study had a relatively similar share of young people (aged 15–29) in the total population. For this feature, the coefficient of variation was the lowest, at 8.90%. Denmark, the Netherlands, and Norway recorded the highest shares of young people in this age group, amounting to: 19.1%, 18.8%, and 18.7%, respectively.

The lowest shares were observed in Latvia – 14.6%, Lithuania – 15.0%, and Slovenia – 15.0%. In Poland, the share was slightly higher, at 15.4%. The greatest differences among young Europeans concern civic engagement. In this case, the coefficient of variation reached the highest value of 91.0%. Young Norwegians demonstrated the highest level of engagement in various types of civic activities.

***Table 2.*** *Ranking of European countries according to the level of human capital of young people*

| Lp. | Country | The value of the synthetic Z. Hellwig index (di) |
|---|---|---|
| Countries with the highest index | | |
| 1. | Netherlands | 0,521 |
| 2. | Switzerland | 0,514 |
| 3. | Norway | 0,466 |
| Countries with an average index | | |
| 4. | Denmark | 0,420 |
| 5. | Austria | 0,402 |
| 6. | Malta | 0,398 |
| 7. | Estonia | 0,380 |
| 8. | Ireland | 0,370 |
| 9. | Sweden | 0,365 |
| 10. | France | 0,364 |
| 11. | Croatia | 0,354 |
| 12. | Czechia | 0,347 |
| 13. | Finland | 0,331 |
| 14. | Portugal | 0,331 |
| 15. | Lithuania | 0,328 |
| 16. | Slovenia | 0,327 |
| 17. | Poland | 0,320 |

| | | |
|---|---|---|
| 18. | Belgium | 0,313 |
| Countries with a low index | | |
| 19. | Germany | 0,271 |
| 20. | Spain | 0,239 |
| 21. | Latvia | 0,228 |
| 22. | Hungary | 0,223 |
| 23. | Cyprus | 0,222 |
| 24. | Slovakia | 0,215 |
| 25. | Serbia | 0,191 |
| 26. | Greece | 0,181 |
| Countries with the lowest index | | |
| 27. | Italy | 0,067 |
| 28. | Bulgaria | -0,046 |
| 29. | Romania | -0,135 |

***Source:*** *Author's calculations.*

As many as 39.6% declared involvement in this area. Young people in Cyprus and Hungary were the least civically active. In their case, the rate reached 1.6% in both cases. Young Poles also do not stand out in this regard. Only 3.4% declared civic engagement.

The results of the author's own research revealed that the Netherlands, Switzerland, and Norway are characterized by the highest levels of human capital among young people (Table 2). The largest group consists of countries with a medium level of this indicator. This group includes 15 countries, among which Poland is also found—occupying the second-to-last position within this group (Table 2).

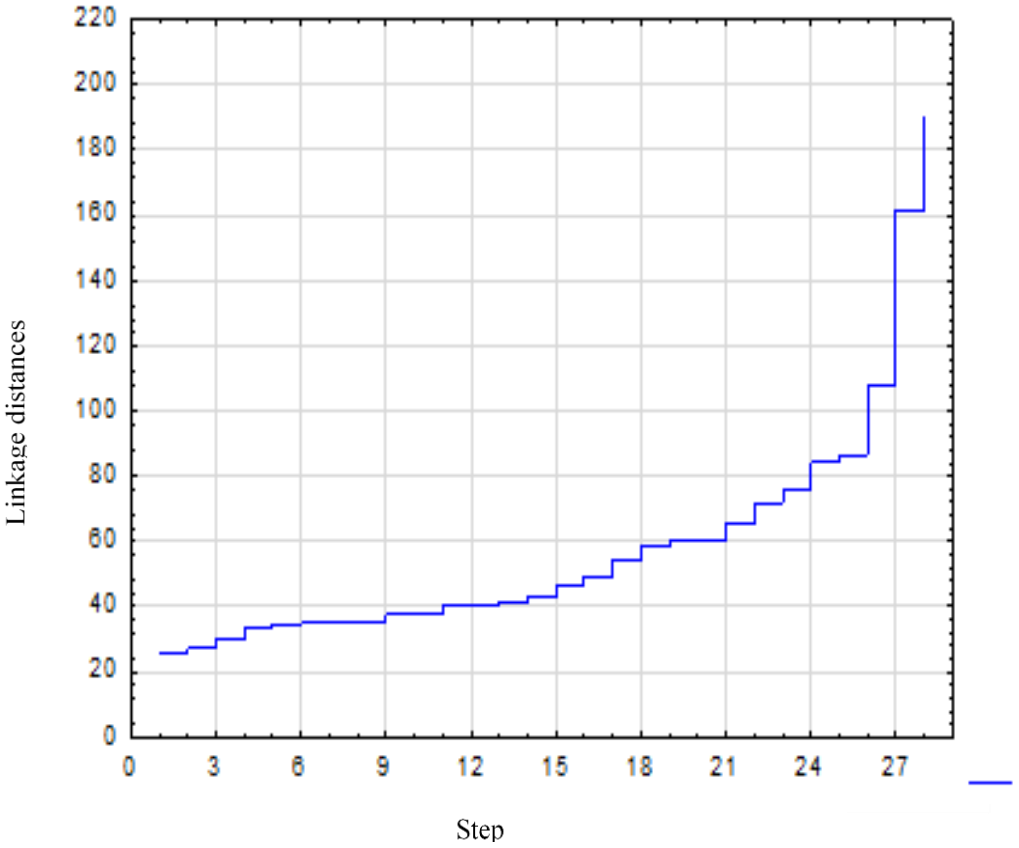
The synthetic indicator for Poland amounted to 0.320, which is 1.6 times lower than that of the ranking leader, the Netherlands. Poland ranked 17th out of 29 countries included in the study (Table 2). Eight countries were characterized by a low level of human capital among young people (Table 2). Three countries—Italy, Bulgaria, and Romania—showed the lowest levels of human capital.

It should be noted that Bulgaria and Romania occupied the lowest positions in terms of human capital development, with index values of –0.046 and –0.135, respectively. Although the synthetic indicator developed by Z. Hellwig generally takes on values in the range from 0 to 1, values below zero may occur. This can happen, for example, in the case of extremely low levels of development in individual countries or in a very small group of countries. Such cases include Bulgaria and Romania.

The cluster analysis was preceded by the determination of a cut-off point. Critical values were established based on the analysis of the line chart of linkage distances across the successive stages of the clustering process. Based on the analysis of the agglomeration plot, it can be stated that the point of division in the dendrogram is

located at step 26 (the first longer vertical line in Figure 1); thus, the linkage distance is positioned between 90 and 110.

***Figure 1.*** *Agglomeration flow chart*




***Source:*** *Own research.*

The dendrogram division at a linkage distance of 90 formed the basis for identifying four relatively homogeneous groups, consisting of: two, six, seven, and fourteen elements, respectively. The smallest cluster consisted of two countries—Romania and Bulgaria—classified by the taxonomic method as units with the lowest level of human capital.

This indicates clear similarities between these two countries in terms of the adopted diagnostic features, and at the same time significant differences from the remaining countries, as emphasized in the further analysis. The next group included seven countries. Three of them (the Netherlands, Switzerland, Norway) represented the highest level of human capital; three others (Denmark, Finland, Ireland) were classified as having a medium level; and one country—Germany—was placed in the group of countries with a low level of human capital. The next cluster comprised

fourteen countries, among which nine, according to the taxonomic method, were classified as having a medium level of human capital (Czechia, Estonia, Lithuania, France, Poland, Austria, Slovenia, Croatia, Malta),while five were characterized by a low level (Serbia, Cyprus, Latvia, Hungary, Slovakia).

In the following part of the article, the diagnostic features characterizing the human capital of young people in the countries covered by the study were analyzed. Particular attention was focused on countries for which the Z. Hellwig index reached the highest and lowest values.

The conducted research revealed a polarization among European countries in terms of the education level of the young generation. Ireland, France, Cyprus, the Netherlands, Austria, and Belgium formed a group of countries characterized by a relatively high percentage of young people with higher education (corresponding to education levels 5 to 8 according to the International Standard Classification of Education – ISCED 2011), along with a relatively low share of individuals with primary and lower secondary education—which in many countries corresponds to lower secondary school (according to ISCED 2011, these are education levels 0 to 2).

Within this group, Ireland stood out in particular. As many as 46.3% of young Irish people had attained higher education, while only 3.5% had completed their education at the primary or lower secondary level. At the opposite end of the spectrum was a group of countries characterized by a relatively high share of young people with the lowest education level, combined with a relatively low share of those with higher education.

This group included Romania, Germany, and Finland. Romania performed particularly poorly in this regard: 20.6% of young people had only primary or lower secondary education, while only 15% had completed higher education. Only Germany had a higher percentage of young people with primary and lower secondary education than Romania—22%—but it also had a significantly higher proportion with higher education (25%), indicating a strong diversification in the education level of young Germans.

In the context of the two diagnostic features described above, which characterize the education level of Europeans, it becomes problematic to assess countries that, on the one hand, stand out due to a high percentage of people with higher education, but on the other hand, also exhibit a relatively high share of individuals with low educational attainment.

This applies particularly to Spain and Norway. In the former, as many as 41.4% of young people have higher education, but at the same time, over 21% possess only primary or lower secondary education. In Norway, these indicators were 41.9% and 16.2%, respectively.

Additionally, it is concerning that countries with a high share of young people with low levels of education are also characterized by a high percentage of youth aged 18–24 who leave education prematurely, at the lower secondary level (equivalent to junior secondary school), and simultaneously do not participate in non-formal education (courses, training, etc.). This applies particularly to: Romania, Norway, Spain, and Germany.

In the case of these countries, the percentage of young people who left education prematurely was: 16.8%, 13.0%, 13.0%, and 12.4%, respectively. On the other hand, Croatia, Ireland, and Poland belong to the group of countries with the lowest level of this indicator. It amounted to 2.0%, 2.8%, and 4.1%, respectively. Poland is also among the countries with a relatively low share of young people with primary and lower secondary education (6.6%) and a moderate share of those with higher education (28.7%).

In most European Union countries, it is men who are more likely to leave education prematurely. In 2023, the share of young men who left education and training early was 3.6 percentage points higher than that of young women. Moreover, in-depth analyses of this phenomenon indicate that more than half of the young people who left education prematurely were unemployed or economically inactive (30.5% were not employed but wanted to work, while the remaining 22.1% were not employed and did not want to work).

The European Union has adopted a target according to which the share of early leavers from education and training should be less than 9% by 2030. It is worth emphasizing that decisions regarding the discontinuation of learning or not continuing education at higher levels are influenced not only by previous academic achievement, but above all by class affiliation and the educational and life experiences associated with it (Becker, 2003).

A serious socio-economic issue is the passivity of young people, expressed by their non-participation in the labour market as well as in both formal and non-formal education. For the purpose of studying this phenomenon, EU statistics introduced the so-called category of young people not in employment, education, or training (NEET).

In the context of this study, it should be emphasized that such passivity among young people negatively affects not only the depreciation of their professional qualifications, but also their future career prospects.

Romania, Italy, and Greece are the countries with the highest share of young people classified as NEET. The indicator reached 19.4%, 15.2%, and 14.2%, respectively. In contrast, the Netherlands (4.9%), Sweden (6.3%), and Norway (6.8%) recorded the lowest NEET levels. In Poland, this indicator reached a slightly higher value of 9.4%.

Young people who experience NEET status are often marked by a specific kind of "scarring" (Ralston, Everington, Feng, and Dibben, 2021), which has a negative impact on their future functioning both in the labour market and in private life. Studies have shown that such individuals earn less later in life and are less satisfied with their career progression (Helbling and Sacchi, 2014). Moreover, O'Dea demonstrated a link between having NEET status in youth and mental health, particularly an increased risk of depression (O'Dea, Lee, and McGorry, 2016).

Despite the gradual improvement in the labour market after the COVID-19 pandemic, many countries are still struggling with relatively high levels of youth unemployment. Spain is one of the countries where the youth unemployment rate (ages 15–29) exceeds 20%, and a similar situation is observed in Greece, where this rate is above 19%. Young people in Sweden, Serbia, and Italy also face difficulties in finding employment. The unemployment rate in these countries is 17.3%, 16.8%, and 14.7%, respectively.

However, it is important to emphasize that long-term unemployment is particularly destructive to human capital. Therefore, Greece and Italy are in an especially adverse situation due to the high proportion of young people who are long-term unemployed. In Greece, this proportion reached 7.8%, while in Italy, it was 5.8%. For comparison, in Sweden, despite the relatively high youth unemployment rate (17.3%), only 1% of young people were long-term unemployed.

Human capital must respond to the needs of an economy undergoing transformation under the influence of digital technologies. A sine qua non condition for the economic development of countries is the need to embrace the integration of the physical and virtual worlds, which are increasingly based on intelligent, digital technological solutions. In this context, it is essential to consider in the assessment of the human capital of young people the diagnostic characteristics that describe their digital skills.

The possession of such skills is reflected in the active use of digital tools by young people. An expression of advanced digital competence is the ability to write code in programming languages. The most active in this area are young people from Portugal, Norway, and Estonia. In these countries, coding activity was declared by 23.3%, 22.9%, and 21.4% of young people, respectively. The digital skill disparity among young Europeans is illustrated by the over sevenfold lower share of young people reporting such activity in Bulgaria and Romania.

In terms of spreadsheet use, the most active were Estonians (69.03%), Czechs (65.8%), and Finns (64.3%). A significantly higher percentage of young people declared copying or moving files between folders, devices, or the cloud, as well as downloading or installing software or applications. Croatia, Czechia, and Poland recorded the highest share of young people active in copying or moving files, with respective rates of 95.3%, 90.6%, and 86.4%.

With regard to downloading or installing software or applications, the leading countries were: Malta, Finland, Czechia, the Netherlands, and Estonia. For these countries, the indicator ranged from 89% to 84%.

The conducted analyses clearly identify the leaders in terms of digital skills among young people. These include countries such as: Estonia, Finland, the Netherlands, and Norway. In contrast, Bulgaria and Romania lag significantly behind the leaders, exhibiting the lowest levels of digital competence among the youth.

Young people currently entering the labor market and starting their professional careers must be prepared to adapt their professional qualifications smoothly to the constantly evolving demands of the job market. A telling indicator of such readiness is the engagement of young people in various types of non-formal educational activities – such as training courses, workshops, and other learning initiatives.

Unfortunately, this educational activity remains low overall, and shows significant variation between countries. The most active in this respect are young Swedes and Danes – in 2024, 29% and 28%, respectively, declared participation in such activities. At the opposite end are young Bulgarians (2.4%), Italians (6.7%), and Germans (7%).

Young Poles are twice less likely to declare educational activity than young Swedes. In this context, it is worth noting that lifelong learning among young Europeans should not be aimed solely at equipping them with specific skills dictated primarily by labor market demands, but should above all focus on shaping creative and active attitudes, fostering their readiness to develop themselves and improve their living conditions, to the benefit of both the individual and society as a whole.

A particularly important role in the development of human capital is played by the active engagement of young people in various forms of civic, social, and cultural activities. Referring to the assumptions of constructivist theory, it is assumed that people learn through mutual interaction with their environment (Wygotski, 1971). In this context, experience and social and cultural engagement form the basis for human development and learning.

Youth involvement in social activities helps develop a specific type of competence referred to as “civic” skills. These consist of interrelated and complementary abilities such as public speaking, giving presentations, writing formal documents (Torney-Purta, 2002), collective decision-making (Morgan and Streb, 2001), cooperation, conflict resolution, achieving compromise, critical thinking, and articulating positions on public matters (Patrick, 2002).

The effects of this social, interaction-based learning through action are also important for the future functioning of young people in the labor market and for the

pursuit of their professional careers. An additional benefit of such activities is the formation of useful social networks.

The European countries that most effectively develop human capital through the social and civic engagement of young people include Norway, the Netherlands, Denmark, Finland, and Switzerland. Among these countries, Norway stands out in particular. Over 45% of young Norwegians reported participation in volunteer work, while nearly 40% declared involvement in various types of civic activities.

Once again, significant differences between European countries can be observed in this regard. Bulgaria, Hungary, and Cyprus are among the countries where young people show particularly low levels of civic engagement. The percentage of individuals declaring participation in such activities amounted to 2.2%, 1.6%, and 1.6%, respectively.

The study also included diagnostic indicators related to young people's involvement in cultural activities, which play an important role not only in personal development, identity formation, and the development of intercultural competences, but also, through stimulating imagination and self-expression, contribute to enhancing young people's creativity—a particularly relevant factor in the post-industrial, innovation-based economy.

Young Europeans most commonly reported attending film screenings at cinemas. The most active in this regard were young people in Germany and Ireland, where 79% and 72.5%, respectively, declared such participation in the past 12 months. On the other hand, young people in Bulgaria (33.7%) and Romania (35%) demonstrated the lowest levels of activity in this area.

In terms of participation in cultural events (concerts, theater performances, and ballet), young people in Switzerland (55.1%) and Greece (51.2%), as well as in Denmark (49.6%) and the Netherlands (47%), were particularly active. Once again, Bulgaria (17.4%) and Romania (20%) recorded the lowest participation rates in this domain.

Visits to cultural sites (such as museums, art galleries, and archaeological sites) were most frequently reported by young people in Switzerland (63.9%), Denmark (57.5%), and the Netherlands (53.15%), and least frequently by young people in Bulgaria (17%) and Romania (19.5%).

This sporadic participation in cultural life results from an underdeveloped habit of engaging with culture, which is often perceived as an unnecessary luxury, both financially and in terms of time. It appears that among young people in Bulgaria and Romania, this habit remains insufficiently developed.

## 5. Conclusion

The socioeconomic development of European countries in the coming decades will depend on the level of human capital among the younger generation currently transitioning into the labor market and on how effectively their knowledge, skills, and talents are allocated across different areas of economic activity.

According to the findings of the present study, the Netherlands, Switzerland, and Norway have the most promising prospects for competitiveness based on human capital, as their younger generations exhibit the highest levels of knowledge and skills aligned with the demands of the modern labor market. Relatively high rankings in the proprietary Human Capital Index for young people are characteristic of countries where young individuals demonstrate strong digital skills and high levels of civic and cultural engagement.

The study highlights the need to improve the level of human capital among young people particularly in countries such as Greece, Italy, Bulgaria, and Romania.

In these cases, increased public investment in human capital is necessary. This refers in particular to public spending on education (with an emphasis on educational quality and systemic reform). These countries are marked by relatively low levels of investment in human capital (including both education expenditures and selected health-related spending).

Between 2009 and 2019, these investments accounted for 5% of GDP in Romania, 5.2% in Bulgaria, 6% in Greece, and 7% in Italy (Leśniewicz, Sawulski, and Paczos, 2021). By comparison, in the Netherlands, which ranks highest in terms of human capital, public investment in human capital exceeded 10% of GDP.

It is important to underline that the most profitable forms of public investment are those allocated to the education of children. Research shows that a 10 percentage point increase in spending per pupil in public schools leads to a 7.3 percentage point increase in future earnings and a 3.2 percentage point decrease in the incidence of poverty in adulthood (Jackson, Johnson, and Persico, 2016).

Additionally, increasing the average number of years of education by one year results in a 3–6% rise in GDP per capita and more than a 1 percentage point increase in the economic growth rate (Sianesi i van Reenen, 2003). The return on investment in public education is particularly high for children and youth from low-income families.

In their case, an educational gap begins to emerge at the very start of schooling when compared to wealthier peers. At a later age, it usually enlarges (EBRD, 2016). Public investment in education can help narrow this gap, and the long-term benefits—such as higher earnings, increased tax revenues, and reduced social

transfer costs (e.g., welfare benefits)—exceed the initial expenditure (Hendren and Sprung-Keyser, 2020).

A limitation of the conducted research, especially in the international dimension, is the lack of access to comparable qualitative data, particularly regarding components of human capital such as young people's attitudes toward work, their motivations, and psychometric predispositions.

The presented findings can serve as a starting point for further in-depth analyses of the factors shaping human capital development in European countries, as well as the impact of human capital deficits among young people on economic development.

In practical terms, the results may provide guidance for public authorities in formulating and evaluating strategies for human capital development in the countries included in the study.

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