Estimation of Human Capital Developmant in Ukraine

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Abstract: Human capital is one of the important elements in the formation, competitiveness, and development of the state. The modern leadership of the developed industrial countries of the world is ensured mainly by the available human capital and powerful technologies and equipment. Therefore, timely assessment of the level of human capital development makes it possible to make effective management decisions on the formation of a competitive economy. The purpose of this article is to study the level of human capital development in Ukraine using international indices and available statistics. To achieve this goal, the most widely used and recognized indices measuring human capital (Human Capital Index, Human Development Index, Social Development Index, Global Competitiveness Index and Global Talent Competitiveness Index) and statistics from the State Statistics Service and international organizations were used. The results of the study showed that modern indices of the level of human capital do not reflect its quality. Most often, they show only a superficial description of human capital in the form of quantitative indicators. Depending on the index, the assessment of human capital also changes, which leads to different conclusions. In particular, Ukraine occupies a high position on certain components of human capital, but there are still many unresolved issues that are destructively reflected in the level of development of the national economy.

1 INTRODUCTION

Most countries are moving to a post-industrial economy and beginning to form a post-industrial society. With the socio-economic development of the state, there is a change in the role of humans. Understanding the importance of human capital development is paramount, so there is a redistribution of investment within the state: more emphasis is being placed on increasing investment in health, education, science, social development, and quality of life. Because these investments are now of the greatest socio-economic importance: they depend on the formation, accumulation, and development of human capital, improving the quality of human capital, expanding economic opportunities and improving their quality of life. Today it is very important to develop human capital. Because it affects not only the economic development of the state or firm but also increases the competitiveness of the state (Porter, 1990).

As emphasized in the materials of the report on the human capital development index for 2019 (The World Bank, 2020c), although fact that human capital is one of the main factors in sustainable growth and poverty reduction, legislatures often cannot justify the need to invest in human capital. The community is inclined to accept better construction of roads and bridges, which can bring economic and political benefits in a much shorter time, compared to investing in human capital (including children), the impact of which is less clear in the current period. However, over time, developed human capital can bring much more economic benefits to the state and the population than infrastructure development and maintenance.

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Therefore, government officials need to understand the level of human capital development in the country. It is customary to use international indices for this, but they do not provide a comprehensive understanding of the level of human capital. Depending on the index, the assessment of human capital also changes, which leads to different interpretations (characteristics) of human capital. The purpose of this article is to analyse the level of human capital development based on international indices and to substantiate the completeness and correctness of the assessment of human capital development in the country.

2 RESEARCH METHODOLOGY

The study proves that current international indices for the assessment of human capital do not reflect the completeness and breadth of data on the quality of human capital. Depending on the index, the assessment of human capital also changes, which leads to different characteristics of human capital.

International indices such as the Human Capital Index, the Human Development Index, the Social Development Index, the Competitiveness Index, and the Talent Competitiveness Index were used in this study. Currently, these indices are the most widely used and used in the assessment of human capital.

There were also some limitations in this study. They were mainly manifested in obtaining statistical information. Also, these indices do not describe qualitative indicators in the assessment of human capital. Therefore, we tried to supplement the indicators of the indexes and explain the destructive processes with the available statistical information. Represented statistical information obtained from the data of the State Statistical Service of Ukraine (periodic surveys of the population of Ukraine) and international organizations.

3 LITERATURE RESEARCH

The gradual transition of countries from industrial to post-industrial economies is closely related to the increasing importance of human capital in the economic and social development of the country. In the 21st century, the leading positions are occupied by those countries that have better and better human capital than natural resources. Interest in the importance of man in the state and economy began in ancient Greece. Aristotle drew attention to the different complexity of work, the level of skills and abilities of workers. He believed that the higher the value of the good, the more skilled labour was spent on its production (Trofimchuk, 2016). He introduced the concept of ability and began to separate the abilities related to the capabilities of the organism and the abilities that a person acquires during practical implementation. He also noted that a person's creative qualities are influenced by the conditions of his life, upbringing and education (Voloshyna, 2014). In his treatise The Republic, Plato described his vision of an ideal state and noted that man is a value. He stressed the responsibility of the state to teach people according to their skills and talents, which led to the creation of Plato's education system (Ahmad, 2012). Attention to the place and importance of man was paid in the Middle Ages. The thinker of the Arab East Ibn Khaldun draws attention to the labour origin of value, based on the fact that most of the accumulated and directly useful to man is equivalent to the value of human labour (Trofimchuk, 2016).

Significant development of the theory of human capital began in the late XIX - early XX century with the beginning of capitalism. This period is characterized by attempts to interpret man, his knowledge, skills, and abilities as capital. Proponents of the theory of three factors of production considered it contradictory because individuals themselves cannot correspond to the category of capital. Instead, human knowledge, skills, and the ability to work correspond to the category of capital. Another direction in economics is the work of researchers who attribute man himself with his natural qualities to capital (Vasylchenko et al., 2005). From the beginning of the concept of "human capital", it was considered only a social factor of development and one that required only costs. Only in the first half of the twentieth century, human capital and man began to be seen as the centre of the reproductive process (Khesin, 2019).

The founders of the theory of human capital are T. Schultz and G. Becker, who received the Nobel Prize in 1979 and 1992, respectively. T. Schultz considered human capital as an additional source of income based on human knowledge, skills and abilities (Schultz, 1961). Becker saw human capital as a store of knowledge, abilities, and motivation of each person. Investing in human capital consists of schooling, on-the-job training, medical care, vitamin intake and the acquisition of information on the economic system. (Becker, 1962).

Shasti and Weil wrote about the importance of health care. As they noted, this could increase the income gap between countries by one third (Shastry & Weil, 2003). Miyamoto wrote about the impact of foreign investment on human capital formation and coherence of human capital investment policies (Miyamoto, 2003).

Thus, the value of man in the modern economy is growing and it is becoming more important than natural resources and accumulated wealth of the country. Because a person can generate new ideas that can be capitalized, it is the person who becomes one of the main indicators in the competitiveness of each country. There is still no single definition of "human capital", so scientists interpret this concept differently. Early interpretations of the concept of "human capital" are aimed at defining the material aspect through investments in health and education, which will have an economic effect in the future. Modern understanding of human capital is based in addition to internal and external motivation.

Summarizing the work of modern researchers, we can identify the following important features that are inherent in human capital: 1) human capital is an asset that consists of innate qualities (physical, psychological, intellectual) and acquired qualities (from education and the environment); 2) accumulation and development of human capital requires significant investments from the state, company, individual; 3) over a period of time, human capital generates income (Khesin, 2019).

That is, when studying the level of human capital development, it is necessary to consider the impact of accessibility and quality of medicine and education, the level of public and private sector investment in these areas, the level of human resource motivation and so on. As world practice shows, all successful countries began with the advanced development of the components of national human capital.

However, the national level of human capital is not exhaustive in research. Often human capital is considered at the enterprise level. Because initially the theory of human capital considered human capital at the macroeconomic level and studied its development and improvement to increase economic benefits for the enterprise. Although the main investment in the preservation, reproduction and development of human capital comes from the state.

Even though human capital has a long history of formation, there are still many unresolved issues.

3.1 The Concept of Human Capital

To date, there is no single definition of "human capital". The definition of this concept depends on the period of development of economic theory. Early attempts to interpret human capital were aimed at determining the place of a man in production. The modern understanding of human capital is not very different from early interpretations and some of them are based on internal and external human motivation:

- Becker noted that investing in human capital includes schooling, on-the-job training, health care and vitamin intake, and knowledge of the economic system. Thus, improving physical and mental abilities increase real income (Becker, 1962)
- Schultz viewed human capital through the prism of human investment. He considered investing in education, health and internal migration for better employment to be the main areas of investment (Schultz, 1961)
- Knowledge, qualifications, skills and other qualities that the individual has and that are important for economic activity (OECD, 2001)
- Human capital is the knowledge, skills, competencies and attributes embodied in individuals that contribute to personal, social and economic well-being (OECD, 2009)
- Formed and developed as a result of investment and accumulated a certain amount of health, knowledge, skills, abilities, motivations, which is purposefully used in a particular field of economic activity, increases productivity and thus affects the growth of income, profits and profits national income (Kolot et al., 2009)

Each of the above mentioned scientists in his definition draws attention to certain components: the functional side of human capital, its ability to generate income, the essential characteristics as a form of the personal factor of production, etc. (Davydiuk, 2008). Early interpretations are aimed at determining the material aspect through investments in health, education, which will have an economic effect in the future. That is, they focus on the knowledge, abilities and skills of human capital. Modern definitions of capital have a broad interpretation. Here, scientists focus on the potential knowledge, abilities and skills of human capital and the possibility of obtaining them. The importance of stimulating and motivating employees to personal development and employment is noted. However, gradually this category is filled with additional qualitative characteristics: psychophysiological, socio-psychological and business (Davydiuk, 2008).

Thus, it can be argued that human capital is an asset that a person has in the form of innate qualities (physical, psychological, intellectual), as well as abilities that a person acquires during life (knowledge, skills, abilities, motivation) that need significant investment and generate income over a period of time (Kompaniets, 2008).

4 BASIC METHODS OF HUMAN CAPITAL EVALUATION

In modern conditions, the issue of conducting a comprehensive assessment of human capital at the

macroeconomic level remains relevant. In most cases, national human capital is calculated based on indicators related to education, science, and health. But the assessment of human capital should be based not only on the above three indicators. The methodology of human capital assessment should reflect not only the quantitative characteristics of human capital, but also qualitative.

Today, the main method of estimating human capital is international indices. The development of indices and their calculations are mainly done by international organizations: the World Economic Forum, the Organization for Economic Cooperation and Development, the European Bank for Reconstruction and Development, the United Nations, and others. All indices can be divided into those that measure individual components of human capital (Human Development Index, Global Competitiveness Index, Social Development Index, Global Talent Competitiveness Index), and those that measure human capital (Human Capital Index).

In addition to these, other indices can indirectly assess human capital and its productivity: the knowledge economy index, the prosperity index, the crime index and more. However, the most accepted indices for assessing human capital are the Global Competitiveness Index, the Global Talent Competitiveness Index, the Social Development Index, the Human Development Index, which until recently was considered the mainstay of human capital assessment, and the Human Capital Index.

4.1 Human Capital Index

The Human Capital Index (HCI) has been calculated by the World Bank since 2018. The purpose of the index is to show the economic losses, the amount of lost income and the long-term consequences of insufficient investment in health care and youth education (Corral et al., 2021; The World Bank, 2020c). This index shows the quality of mobilization of economic and professional potential of the population (The World Bank, 2020c). The index consists of three main indicators: survival (share of children over 5 years of age), school (quantity and quality of education) and health (adult survival rate and healthy growth among children) (The World Bank, 2020c).

The Human Capital Index quantifies the importance of health and education for next-generation productivity. Countries use it to determine how much of their income they lose due to human capital shortages, and how quickly they will turn those losses into achievements if they act without delay. The results of the new PISA survey were taken into account during the review. The index is a total indicator of the level of human capital that a person can accumulate today from birth to 18 years, taking into account the risks associated with low levels of health and education in the country in which he lives. An important feature of the index is that, based on thorough microeconometric studies, it measures the contribution of health and education systems to the productivity of individuals and countries.

4.2 Human Development Index

The Human Development Index was established by the United Nations Development Program and was first published in 1990 (UNDP, 1990). The Human Development Index is an indicator of achievement on the following indicators: long and healthy life, access to knowledge and a decent standard of living (UNDP, 2020). These indicators are measured as life expectancy at birth, the average level of schooling for adults aged 25 and over and the expected years of schooling for school-age children, GDP per capita (*Human Development Index (HDI)*, 2020).

Although the Human Development Index and the Human Capital Index are very similar at first glance and consider human abilities as a key condition, the methodology of calculation in them is different, they complement each other. The Human Development Index is the total measure of the average values of indicators (high life expectancy and healthy lifestyle, high level of awareness and decent standard of living). The Human Capital Index links individual results in human capital development to productivity and income levels. It is a predictive measure of the impact that current health and education outcomes (including a new methodology for measuring school-based learning) will have on the productivity of the next generation of workers.

4.3 Social Development Index

The Social Development Index has been calculated by the American non-governmental organization Social Progress Imperative with the support of Deloitte since 2011 (Deloitte, 2019; Michael et al., 2020). This index is based on non-economic aspects of social activity (Michael et al., 2020). The Social Development Index is a tool that measures the satisfaction of people's needs: comfortable housing, satisfactory nutrition, a sense of security, level of communication and attitude towards people depending on their race, gender, sexual orientation. The main goal of the index is to improve the quality of people's lives (Social Progress Index, 2020). This Index provides a detailed analysis of citizens' access to a wide range of opportunities, including the

provision of basic services, social opportunities, health, education, housing, law enforcement, protection of personal rights and freedom from discrimination (*Indeks sotsialnoho rozvytku*, 2015). In total, the index takes into account 50 indicators, which are grouped into three main groups: basic human needs, well-being and opportunities («Social Progress Index 2020», 2020).

The Social Development Index is likely to show the level of human capital development in each country. It reflects the qualitative characteristics of the conditions in which human capital is formed and developed. The higher the social development of the population is, the higher the well-being of each citizen. With favourable living conditions and a decent income, a person can afford to buy and accumulate more wealth, and therefore has more opportunities for personal development and investment in their human capital.

4.4 Global Competitiveness Index

The main idea for calculating this index has belonged to Klaus Schwab since 1979. This index was published at the World Economic Forum from 2005. Xavier Sala-y-Martin and WEF developed the Global Competitiveness Index (Schwab, 2015). The methodology for calculating the index has changed several times: in 2007, in 2018 (Schwab, 2015, 2018).

After the change in the calculation methodology, not only the macroeconomic indicators of the country are taken into account, but also some indicators related to human capital and its ability to increase the level of competitiveness of the state. The index takes into account the following indicators: institutions, infrastructure, ICT adoption, macroeconomic stability, health, skills, commodity market, labour market, financial system, market size, business dynamism, innovation opportunities (Schwab, 2019). In 2020, the WEF suspended calculations of the Global Competitiveness Index. Instead, ways to rebuild and transform the economy during the COVID-19 pandemic were suggested (Schwab, 2020).

4.5 The Global Talent Competitiveness Index

This annual study is prepared by the INSEAD International Business School in partnership with the Adecco Group and the Singapore Institute for Human Capital Leadership (HCLI) (Balland et al., 2015) .

It examines the impact of technological change on the competitiveness of talent and confirms that despite the trend of crowding out jobs at all levels by technology, technology is also creating new opportunities. The key skills that are key to success are the ability to work with both new technologies and people, flexibility and collaboration (Balland et al., 2015) .

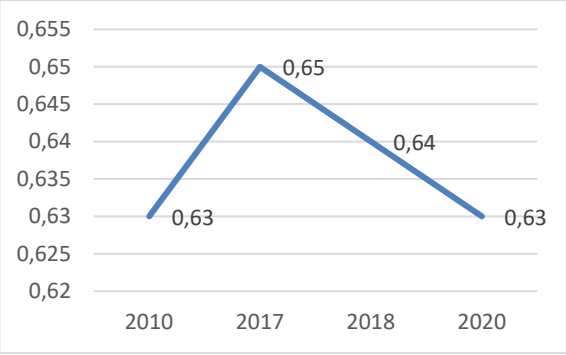
The total index is calculated on the basis of the arithmetic mean of six criteria: market and regulatory conditions in the labour market; career opportunities; opportunities for employers to attract talent from around the world (Talent Attraction Index); ability to retain qualified personnel; production skills of employees and global knowledge (INSEAD, 2018).

5 ESTIMATION OF HUMAN CAPITAL DEVELOPMENT IN UKRAINE

5.1 Human Capital Index

According to the Human Capital Index, Ukraine ranks above average (World Bank, 2020). The results that were in 2010 and in 2020 have not changed and are 0.63 points (fig.1) (The World Bank, 2020c, 2020b). On the one hand, this means that the Ukrainian government has not implemented significant reforms in the last 10 years, and on the other hand, the first returns from investing in human capital can be felt in more than 10 years.

Analysing all indicators of the human capital index, we can see the deterioration of all indicators, except the Probability of Survival to Age of 5 and Survival Rate from Age of 15-60 (table 1). Currently, the average student spends 12.9 years in school before the age of 18, while in 2010 the student spent 13.1 years before the age of 18. At the same time, the average years of schooling decreased from 10.27 years according to 2010 data to 9.9 years in 2020.



Source: (The World Bank, 2020b)

Figure 1: Human Capital Index of Ukraine

There was also a deterioration in the harmonized test results of schoolchildren from 490.09 points in 2010 to 478 points on a scale of 625 – high level, 300 – minimum (The World Bank, 2020a). That is, Ukraine occupies a middle position in terms of the quality of education. In 2018, a PISA study showed that the average score of Ukrainian students in reading is 465.95, in Mathematics – 453.12, and in Natural Sciences – 468.99 (Mazorchuk et al., 2019). First, the results of Ukrainian students are lower than the OECD average in all three fields (the average for OECD countries in reading is 488.89 points, Mathematics – 492.03 and Science – 490.78). The difference in the performance of students in Ukraine compared to the average values in OECD countries in Reading is 23 points, in Mathematics – 39, and in Science –22. This difference is close to the equivalent of one year of study (Mazorchuk et al., 2019; OECD, 2018). Only 74.1% of Ukrainian 15-year-olds have reached the basic level of reading literacy, while on average in OECD countries this figure reaches about 77%, 64.0% of adolescents have reached the basic level of mathematical literacy, in the OECD – 76% male and female students, 73.6% – science literacy in Ukraine and about 78% in the OECD (Mazorchuk et al., 2019; OECD, 2019).

The difficulty of calculating the human capital index is manifested in the fact that some indicators "Fraction of Children Under 5" are not covered at all due to lack of statistics in Ukraine, and the indicator "Harmonized Test Scores" in 2020 contained the results of the Pisa survey for 2018. That is, these two indicators change the results of the index.

The General Health Services Coverage Index (UHC) (0 to 100) measures coverage of basic health services based on follow-up interventions. In Ukraine, the UHC Index rating is 68 (2017). Social SafetyNet accounts for 40 percent (2016) of the poorest quintile covered by social safety nets. According to the report on the Human Capital Index in Ukraine (The World Bank, 2020a), 99 out of 100 children live to 5 years; 81% of 15-year-olds will live to 60 years. In Ukraine, the probability of dying between the ages of 30 and 70 from cardiovascular disease, cancer, diabetes or chronic respiratory diseases is 25 percent (2016 data).

Table 1: Overall assessment of the components of the human capital index for Ukraine, 2010-2020.

Series Name	2010	2017	2018	2020
Expected Years of School	13,1	13,0	12,9	12,9
Fraction of Children Under 5 Not Stunted	..	..	..	..
Harmonized Test Scores	490	490	490	478
Human Capital Index (HCI) (scale 0-1)	0,63	0,65	0,64	0,63
Learning-Adjusted Years of School	10,3	10,2	10,1	9,9
Probability of Survival to Age 5	0,99	0,99	0,99	0,99
Survival Rate from Age 15-60	0,77	0,81	0,81	0,81

Source: (The World Bank, 2020b)

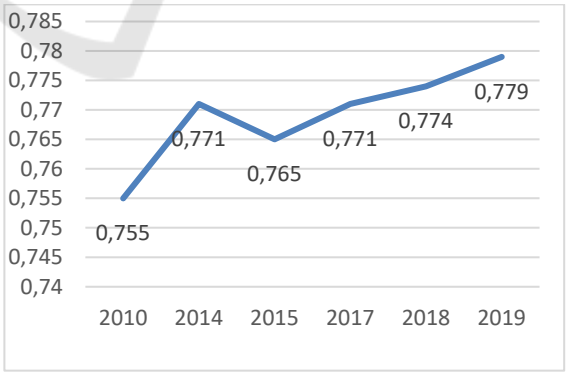
For 10 years in Ukraine the efficiency of education has decreased, the final knowledge, which is the basis for further accumulation of knowledge and its use. Thus, Ukraine ranks high in the Human Capital Index and the Human Development Index not because of the quality of education, but because of the duration of education and the number of people with education.

5.2 Human Development Index

According to the Human Development Index, Ukraine is one of the countries with a high level of human development. Since 2010, Ukraine has shown slow but steady progress in human development. There was a slight decrease in points in 2015, which is due to hostilities in the east of the country.

High indicators of the index are achieved through education, namely the number of educated people and the number of years spent on education.

Recently, the standard of living in Ukraine, determined by gross national income (GNI) per capita, has increased slightly: by about 9% in 2015-2017 education, life expectancy and income among women and men in different countries.



Source: (Conceição, 2020)

Figure 2: Human Development Index of Ukraine

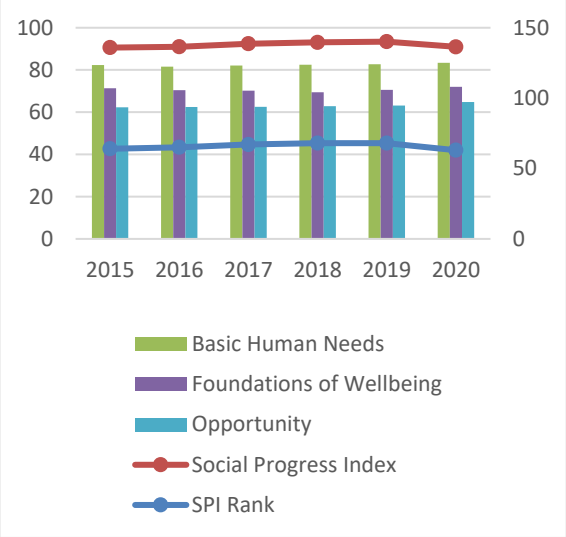
According to the Constitution of Ukraine, the population has the right to medical care. Modern reform of the medical sphere has made it much more difficult to obtain medical services, and for the most part encourages people to turn to private doctors or

refuse treatment altogether due to significant financial difficulties and the high cost of relevant health services. According to the State Statistical Service in 2019, 98.4% of all surveyed households sought medical care, of which 24.4% were unable to receive medical care, purchase medicines and medical equipment (Derzhavna sluzhba statystyky Ukrainy, 2021). According to the respondents, the main difficulty in receiving medical care was not long queues, but the lack of necessary drugs or medical equipment or the difficulty of obtaining medical procedures, hospitalization, and too high cost of treatment.

Shastri and Weil believe that health care increases the income gap between countries by one third (Shastry & Weil, 2003). It can be argued that due to the existing differentiation of countries in their way of life and social status, there is a negative or positive reflection of these factors on the health, energy of the population, their potential for work. Thus, in countries with high or above average incomes, the population has greater opportunities for balanced nutrition, timely and quality health care, opportunities to obtain safe jobs that affect life expectancy. Thus, on average over eight years, the average difference in life expectancy between Ukraine and Poland was 6.04 years, between Hungary – 4.3 years, Estonia – 5.9 years, and between the EU28 – 8.3 years (the author on the basis of state Statistics Service, 2019). Although life expectancy in Ukraine has increased over the last 10 years, it is still lower than in European countries and lower than the EU average. This is mainly due to the premature death of Ukrainians due to various diseases, especially men who live about ten years less than women. Today it is not enough to live a certain number of years. Throughout the life, a person must remain active and healthy for the constant development of their human capital. Therefore, it is necessary to reduce the risk of disease and change lifestyles. This requires, first of all, good funding.

5.3 Social Development Index

As for the social development index, compared to previous years, all indicators remained almost unchanged. There was a slight improvement in the indicators "access to information and communication", "freedom of choice and personal freedom", "access to higher education". At the same time, a slight deterioration is observed in the indicators of "personal security" and "tolerance".



Source: (Social Progress Index. Data base, 2020)

Figure 3: Overall assessment of the social development index for 2015-2020

The above studies show a close relationship between the level of development of the state, the level of investment in the social sphere (human capital) and the level of development and quality of human capital of the state. This is because developed countries have more financial resources to invest in human capital and improve the socio-economic environment of the state (education, health, improving working conditions (creating a favourable environment)). But, on the other hand, we can observe the opposite: quality human capital affects the development of the state (better socio-economic results): improving the quality of life, creating and implementing innovations and so on.

5.4 Global Competitiveness Index

With the development of new technologies there is a need for highly qualified personnel (Bublyk & Shakhno, 2018). Therefore, there is a change in the traditional concept of labour. Thus, the importance of human intellectual abilities increases (World Bank, 2019). Today more than 50% of the GDP of the largest OECD countries is created in areas that are based on knowledge (Bublyk & Shakhno, 2018). Therefore, skills for human capital are crucial.

With the change in the methodology of calculating this index, there are criteria that assess and forecast the assessment of human capital: Current workforce, Skills of current workforce, Future workforce, Skills of future workforce. In 2019, compared to 2018, Ukraine improved the results of

most indicators. The results of Mean years of schooling (Current workforce indicator) and School life expectancy (Future workforce indicator) remained unchanged: 69.3 and 83.3 points.

As you can see, in one year the degree of investment of Ukrainian companies in the development and training of their staff has increased (Table 3). At the same time, the quality of staff training and the level of skills of graduates required for business have slightly increased. Despite small improvements, Ukrainian companies are in no hurry to invest in the development of their staff, developing their skills, interacting with universities and supporting students. Therefore, this is reflected in the quality of the workforce and its training (Karpenko et al., 2021). This is confirmed by the Ease of finding skilled employees' criterion, which has hardly changed this year and in 2019 amounted to 56.7 points. That shows the significant difficulty in companies in finding staff with the necessary skills.

With the development of Industry 4.0, the population's need for digital skills is increasing. The concept of Industry 4.0 is the digitization of the industrial process (Xu et al., 2021). Thus, there is a transition of biological and physical systems in cyberbiological and cyberphysical, the emergence of the Internet of Things, robotics, artificial intelligence, eHealth and more. However, it is impossible to achieve the above and their development without the development of the necessary skills and competencies, especially digital (Karpenko & Zasorina, 2020). According to the Global Competitiveness Index, the digital skills of active users are close to average. This means that in 2019, 57.9% of the active population of Ukraine had sufficient digital skills. Similar results were shown by a study conducted by the Ministry of Digital Transformation of Ukraine in 2019 (Tsyfrova hramotnist naselennia ukrainy, 2019). According to this study, the digital skills of the population are below average and only 53% of the population of Ukraine have digital skills below average (Tsyfrova hramotnist naselennia ukrainy, 2019).

Table 3: Assessment of skills according to the Global Competitiveness Index

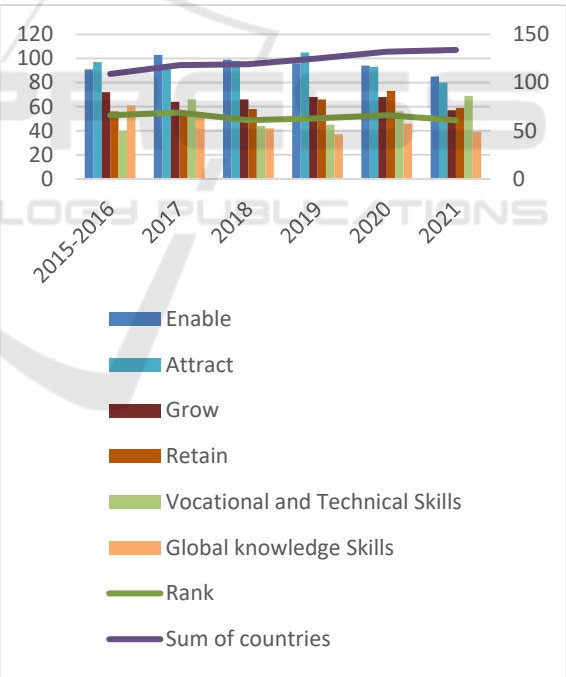
Criteria	2018	2019
Current workforce		
Mean years of schooling	69,3	69,3
Skills of current workforce		
Extent of staff training	46,6	50,4
Quality of vocational training	51,5	53,4
Skillset of graduates	52,1	54,5
Digital skills among active population	57,2	57,5
Ease of finding skilled employees	56,3	56,7
Future workforce		
School life expectancy	83,3	83,3
Skills of future workforce		
Critical thinking in teaching	47,1	52,6
Pupil-to-teacher ratio in primary education	93,1	92,5

Source: Index (Schwab, 2018, 2019)

Thus, this index showed how poor human capital affects the level of competitiveness of the country and the deepening of problems in the labour market.

5.5 The Global Talent Competitiveness Index

Today, Ukraine ranks middle (Fig. 4) in the global competitiveness index and is the most efficient country with below-average incomes and the only economy in its income group, which is located in the top half of the ranking (INSEAD, 2021b). Ukraine is consistently the only country with a below-average income to be ranked second in the annual rankings. Other low-income countries are in the third and lower quartiles of the annual ranking (INSEAD, 2021b).



Source:(Balland et al., 2015; INSEAD, 2018, 2020, 2021a; Lanvin & Evans, 2016)

Figure 4: The value of the main criteria of the Global Talent Competitiveness Index for Ukraine for 2015-2021.

Ukraine shows good results on two indicators: vocational and global skills and global skills and growth, 69, 36 and 57 places respectively. These indicators are due to high performance in high-level skills (24th place) and formal learning (46th place). Ukraine's regulatory landscape, access to growth opportunities, the spread of the foreign property and the preservation of the brain are the most degraded in terms of indicators.

6 CONCLUSIONS

To conclude, in this paper we analysed the dynamics of human capital in Ukraine according to various international indices: human capital index, human development index, social development index, global competitiveness index and global talent competitiveness index. Insufficient attention to the development of human capital at the state level leads to significant social losses: low quality of life, low incomes, reduced welfare. This is partly due to insufficient funding (investment) in human capital. In the leading areas, such as education, health care, social spending to support the population.

Despite the relatively high level of education of the population of Ukraine, the quality of knowledge that they receive and can further apply in the workplace, corresponds to the average level. This means that it is difficult for a modern employer to find a skilled worker who would meet all his needs and meet the needs of the modern labour market. But thorough cooperation between employers and government officials can be remedied. Thus, in general, the solution to the problems of inefficient formation and use of human capital can be solved through close cooperation: initiated by leaders of education, research and government agencies and business to develop a common agenda.

The situation is complicated by indicators of political instability, brain drain, insufficient financial resources for investment in human capital.

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