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## DIGITALIZATION OF THE ECONOMY AS THE BASIS OF HUMAN CAPITAL POTENTIAL

Digitalization of the economy is critically important in the era of global changes in the modern world. Like previous technological transformations, the digitalization of the economy is associated with a number of significant changes. The digital transformation of modern society has a profound impact on traditional human capital, as the active adoption of digitalization leads to the intellectualization of labor. In the context of a digitized economy, human capital – its development and level – becomes a key driver of economic growth and national prosperity. Currently, the primary goals of societal development are to ensure economic growth and improve quality of life. These objectives can be achieved through the establishment of a new economic model that fosters the digitalization of the economy. Achieving an economic and technological breakthrough is impossible without addressing the challenge of enhancing the development of human capital.

**Relevance of the topic.** Today, countries around the world are experiencing changes marked by significant risks and opportunities, which are becoming more apparent across all areas of society. New technologies and innovative products are spreading rapidly, and existing business processes and economic models are being refined. The accelerated optimization and modernization of economic structures, along with the expanded use of innovations and the digitalization of the economy, are significantly transforming the quality of human capital. Digitalization has a profound impact on all socio-economic processes, including the development of human capital. Therefore, it is particularly important to examine the role of human capital in the context of a digitized economy, highlighting the relevance of this topic.

**The purpose of the article.** The purpose of this study is to justify the necessity of digitalizing the economy and to assess the role of human capital in this context. To examine the role of human capital within the digitalization of the economy, it is essential to explain its essence, importance, key characteristics, and constituent elements. Additionally, the study aims to explore various aspects of the digital transformation of modern society that influence changes in human capital, while evaluating the role of the knowledge economy

and ICT – key components that drive the acceleration of economic digitalization. Considering the role of human capital in this process, one of the primary objectives is to offer recommendations for its development.

**Research methods.** Generalization, grouping, factor analysis, graph analysis, comparative analysis, development dynamics, and economic-statistical methods were the primary research approaches used in the preparation of this article.

**Scientific innovation.** Some pros and cons of the digitalization of the economy were reviewed, with the conclusion that the benefits outweigh the drawbacks. The primary factor for the success of the digitization process is having a sufficient number of highly qualified personnel in relevant positions, along with a system for training specialists with the necessary skills to develop and effectively apply innovative and digital technologies. The key factors influencing the development of human capital – such as the population’s education level, digital literacy, and culture – were also emphasized. Above all, the importance of investing in human capital was highlighted as crucial for achieving these objectives.

**Keywords:** *digital economy, digitalization of the economy, human capital, knowledge economy, education, information, competition, production*

**JEL classification:** *D83, O15, J24*

Цифровізація економіки надзвичайно важлива в епоху глобальних змін сучасного світу. Цифровізація економіки пов’язана з низкою важливих змін, як і попередні технологічні трансформації. Цифрова трансформація сучасного суспільства має великий вплив на зміни традиційного людського капіталу, адже активне застосування цифровізації призводить до інтелектуалізації праці. В умовах цифровізації економіки людський капітал, його розвиток і рівень стають основними факторами економічного зростання та добробуту держави. Нині основними цілями розвитку суспільства є забезпечення економічного зростання та підвищення якості життя. Цього можна досягти через формування нової економічної моделі, яка стимулюватиме розвиток цифровізації економіки. Неможливо забезпечити економічний і технологічний прорив без вирішення проблеми підвищення рівня розвитку людського капіталу.

**Актуальність теми.** Сьогодні країни світу стикаються зі змінами, які характеризуються великими ризиками та можливостями, і ці зміни більш помітні в усіх сферах життя та діяльності суспільства. Нові технології та інноваційні продукти швидко поширюються, існуючі бізнес-процеси та економічні моделі вдосконалюються. Прискорення оптимізації та модернізації економічної структури, розширення можливостей використання інновацій та цифровізація економіки суттєво змінює якість людського капіталу. Цифровізація економіки має великий вплив на всі соціально-економічні процеси, а також проявляється в розвитку людського капіталу. Тому особливо важливим видається дослідження впливу ролі людського капіталу в умовах цифровізації економіки, що зумовлює актуальність обраної теми.

**Мета статті.** Метою дослідження є обґрунтування необхідності цифровізації економіки та визначення ролі людського капіталу в цьому контексті. Щоб розглянути роль людського капіталу в контексті цифровізації економіки, необхідно пояснити його сутність, значення, основні характеристики та складові елементи. Також вивчити деякі аспекти цифрової трансформації сучасного суспільства, що впливає на зміни людського капіталу, оцінити роль економіки знань та ІКТ, які є її основними складовими, що сприяють прискоренню цифровізації економіки. Враховуючи роль людського капіталу в цифровізації економіки, однією з головних цілей є висунення рекомендацій щодо його розвитку.

**Методи дослідження.** Узагальнення, групування, факторний аналіз, графічний аналіз, порівняльний аналіз, динаміка розвитку, економічна статистика та ін. були основними методами дослідження під час підготовки статті.

**Наукова новизна.** Було розглянуто деякі плюси та мінуси цифровізації економіки, і було визначено, що плюси переважають мінуси. Основним чинником успіху процесів цифровізації економіки є наявність достатньої кількості висококваліфікованих кадрів на відповідних посадах, а також системи підготовки фахівців зі спеціальними навичками для розробки та ефективного застосування інноваційних та цифрових технологій. Найважливішими факторами, що впливають на розвиток людського капіталу, є рівень освіти населення, цифрова грамотність і культура. Для успішного досягнення всіх цих цілей насамперед приділяється увага інвестуванню людського капіталу.

**Ключові слова:** *цифрова економіка, цифровізація економіки, людський капітал, економіка знань, освіта, інформація, конкуренція, виробництво*

**JEL classification:** *D83, O15, J24*

## Introduction

Currently, the process of digitalization of the economy is developing rapidly. The digitalization of the economy refers to the financial and economic activities where digital data on economic, labor, business, and other indicators serve as the main factor. By collecting, processing, and analyzing digital data, the efficiency of production, storage, sales, and delivery of technologies, services, and goods increases significantly. Digital technologies impact all spheres of society and influence every level of life – politics, economy, culture, social, and financial sectors. Overall, the positive effects of digitalization lead to qualitative changes in the nature of public production. It is obvious that the development of innovation and digitalization processes play an important role in the economy, contributing to the improvement of various areas of human activity. The primary driver of the economy's digitalization is the development of human capital.

In an era of deepening digitalization of the economy, human capital becomes the main driver of innovative economic growth. In this context, human capital gains informational content and contributes to economic growth by acquiring new informational and network-based properties, functions, and capabilities. Given the increasing importance of human capital in the digital economy, conducting research in this area holds great practical significance.

**Research methods.** During the preparation of the article, methods such as generalization, grouping, factor analysis, graphic analysis, comparative analysis, development dynamics, and economic-statistical methods were used as the primary research approaches. Based on these methods, the role of human capital, along with its main features and constituent elements in the digitalization of the economy, was examined. Additionally, the necessity of expanding the knowledge economy and utilizing ICT in the development of human capital was substantiated. In recent years, the development of human capital in Azerbaijan has been analyzed, focusing on the number

of internet users and their purposes, as well as the expenditures allocated to education, healthcare, social protection, and social security from the state budget. Furthermore, the education levels of individuals aged 15 and older were assessed using the database of the State Statistical Committee (SSC), and relevant conclusions were drawn.

## Discussions and conclusions

### 1. Advantages of digitalization of the economy.

The modern era demonstrates that human capital is the most important component of the digitalization of the economy, as it enhances labor productivity. It is individuals who can quickly adapt to changes, develop, and refine digital skills for the benefit of economic activities. The digitalization of the economy encompasses several key aspects, widely applicable across various fields of economic activity:

1. Digital information and knowledge factors form the foundation of production.
2. Modern information hubs serve as the basis for activities.
3. Optimizing the economic structure and production development factors is determined by the effective use of ICT [8, p.79].

The digitalization of the economy is a natural outcome of innovation-driven development within the market economy system. The rapid spread of digital technologies is primarily driven by the need to increase business efficiency and competitiveness, as well as to enhance national economies. Countries that have emerged as leaders in the digitization of their economies are well-positioned to further strengthen their competitive advantage, thereby maximizing benefits through the reallocation of resources.

Research shows that the digitalization of the economy has both positive and negative aspects. On the positive side, it offers the possibility of making informed choices by accessing vast amounts of information, saving time, reducing costs, and more. On the negative side, it can lead to dependence on technology, the strengthening of monopolistic tendencies among tech

giants, and the risk of involving fewer people in economic processes. However, the advantages and opportunities of digitalization outweigh its disadvantages. Above all, digitalization creates access to extensive information and choice. For instance, the internet allows consumers to access vast amounts of information and compare the prices of goods and services. The greatest benefit, however, lies in the development of human capital [7, p. 46].

The digitization of the economy plays a crucial role in ensuring access to information services for both the country and its enterprises. Information, as an economic asset, circulates as a resource used in and throughout economic activity. Information products and services are exchanged in the information market and possess numerous characteristics at various stages of development, production, and circulation. To ensure widespread access to information within the country, it is essential to create favorable conditions for enterprises that produce and provide information services, as well as to promote the development of the information services sector.

Azerbaijan is committed to ensuring the availability of information and advancing the digitalization of its economy. This is evident in several legal acts adopted in recent years. For instance, the Order 'Azerbaijan 2030: National Priorities for Socio-Economic Development,' approved by President Ilham Aliyev on February 2, 2021, emphasizes the importance of expanding the digitization of the economy and developing human capital in the country [3]. Information plays a crucial role in achieving these objectives, and undoubtedly, the realization of these goals hinges on the availability and accessibility of information.

## **2. Human capital and its role in the digitalization of the economy.**

In Azerbaijan, the human factor, along with ensuring a decent standard of living and high welfare for the population, is central to the state's policy. By fostering an innovation-driven economy, the state aims to develop human capital in line with the modern demands of the labor market,

enhance people's knowledge and skills, promote a high level of digital culture within society, and improve social well-being. In a world of increasing competition, Azerbaijan has prioritized achieving progress through the formation of human capital. As a result, the country is actively working to develop digital technology and the economy by building favorable infrastructure [1, p.84].

Human capital is typically understood as the economic valuation of the accumulated knowledge, skills, and competencies that individuals possess, which play an important role in increasing labor productivity and fostering technological innovation. It is developed through state and entrepreneurial investments, as well as individual self-development. Human capital is the most intensive and productive factor in economic development, acting as the key element that integrates an educated labor force with their knowledge, intellectual skills, and management capabilities. Labor resources and knowledge also include the ability to effectively use technology, known as digital competencies.

In the new era of economic digitization, human capital occupies a central role. Its significance in the digital economy is shaped by new forms and methods of work that align with modern demands, and, most importantly, by the potential of the individual. A well-structured system of personnel development has been established within digital economic sectors, promoting the acquisition of new and innovative knowledge, which facilitates individual and innovative growth. Innovative thinking, in particular, plays a crucial role as a direct productive force.

If we consider human capital in a broad sense, it is a productive and intensive factor in the development of the family, society, and economy. It encompasses labor resources, knowledge, tools for intellectual and managerial work, the living environment, and the educated portion of labor activities. Human capital is a necessary condition for safeguarding the national economy and ensuring its competitiveness in global markets amid globalization. It is also a key indicator of the effectiveness of legislation

and state bodies within a country. According to many researchers, the main components of human capital include knowledge, access to information, various productive abilities, health status, professional mobility, motivation, needs, and more [11, p.200].

### 3. Main characteristics of human capital.

It is well known that human capital has various characteristics, with the main ones illustrated in the following figure (Fig. 1).

Thus, studying human capital in the processes of its formation, use, and development allows for identifying its modern characteristics:

a) the formation and development of human capital in the face of increasing demands require significant financial investment, which, in turn, enhances economic and social benefits;

b) investments in human capital led to its accumulation in the form of knowledge and skills;

c) human capital can exhibit both positive and negative dynamics. Its structure evolves with new elements, while the importance of existing elements may increase, decrease, or disappear entirely;

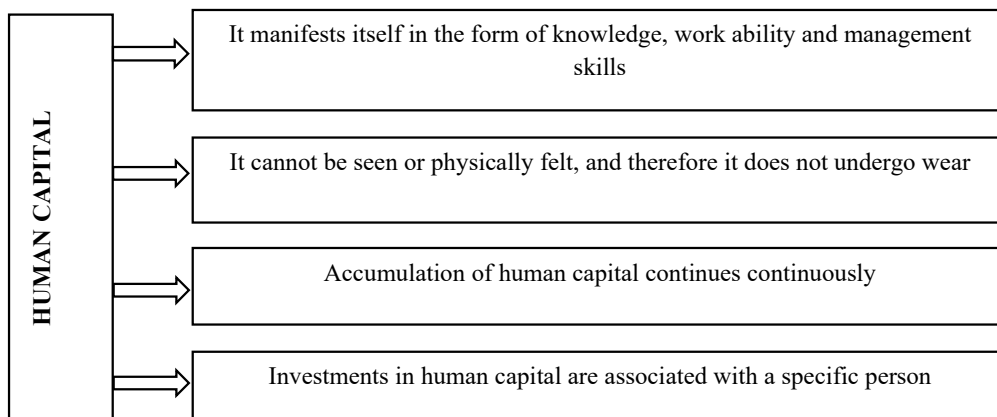
d) human capital has a dual nature: first, it is considered a socio-economic form representing the quality of human potential; second, it is viewed as capital utilized by business entities to generate profit;

e) the formation of human capital can occur in general and specialized forms. In modern conditions, the specialized form is more significant, as enterprises require personnel with specific skills to achieve their goals;

f) factors influencing human capital during its formation include ecological, demographic, socio-economic, institutional, productive, and integrative factors, among others.

A key characteristic of human capital is that it cannot be separated from its carrier, the individual. This feature holds great theoretical and practical significance. The formation of human capital occurs over a long period, involving retention, education, and training before the individual embarks on a professional career. Human capital not only resists deterioration during an employee's working life, but it is also enriched through the accumulation of practical experience and ongoing professional development. Recognizing the importance of continuous learning throughout one's career is essential for the sustainable and progressive development of society and the creation of national wealth – this is the essence of the human capital formation process.

This process is continuous, varying in intensity during different periods and influenced by factors affecting its formation and the sources of investment. There



**Fig. 1. Characteristics of human capital**  
*Source: Compiled by the author*



are several directions in which human capital is formed in modern enterprises, each determined by various factors and having different impacts on the enterprise's activities.

Human capital has a direct relationship with a country's economic growth. It influences economic growth and can contribute to development by expanding people's knowledge and skills. Human capital refers to the knowledge, skills, and experience that individuals possess, which create economic value because a highly skilled workforce drives higher productivity. According to the concept of human capital, 'humans and their potential are not only the primary goal of social development, but also the key means to achieve this goal,' as reflected in the main components of the human development paradigm, such as productivity and empowerment. Through their work, individuals transform innate abilities and acquired knowledge and experience into income [9, p.132].

Human capital requires constant reproduction. This process involves the dynamic development of all its constituent elements, which requires financial resources from the individual, companies, and the state. The objects of reproduction of human capital include the processes of restoration, protection and improvement of immunity against diseases, labor capacity, physical development, processes of formation of human language and cultural competence, labor and intellectual skills. The normal functioning of individuals depends on the successful implementation of these processes.

There are three forms of human capital reproduction: simple, broad, and narrow. Simple reproduction refers to the maintenance and reconstruction of human capital at a constant level. Comprehensive development, or expanded reproduction, involves diversifying and improving all constituent elements of human capital. When the focus is on quantitative goals, reproduction occurs broadly through the acquisition of additional knowledge. If the goal is to improve the quality of existing

human capital, reproduction takes place intensively. In our opinion, this process should be implemented comprehensively. In expanded reproduction, human capital is accumulated, systematized, and enhanced. Narrow reproduction, on the other hand, implies a gradual reduction in the quantity of human capital [12, p.107].

According to the World Bank, human capital accounts for 60-65% of the world's GDP. A high level of human capital helps increase income, prosperity, and quality of life not only for individuals but for the country as a whole.

It is well known that the creation of highly productive jobs is one of the country's main priorities. A key factor for the successful digitization of the economy is having a sufficient number of highly qualified personnel in relevant positions, along with the development of innovative and digital technologies and a system for training specialists with the necessary skills to effectively apply them. Therefore, in the digitalization of the economy, human capital – both within industrial enterprises and on a national scale – is aimed at maximizing development and success.

In the structure of human capital, it is important to distinguish a person's knowledge and skills, health condition, experience, and work motivation. Additionally, the role of human capital in the development of society and the economy should be considered by analyzing functions such as the recovery, accumulation, and stimulation of national human capital development [10, p. 94].

#### **4. Factors of human capital development.**

The development of human capital is influenced by factors such as the population's education level, digital literacy, and culture. In modern conditions, the formation and growth of human capital is a crucial component of the strategic tasks involved in the efficient state management of the country's economy. The standard of living of the population significantly impacts the development of this capital, with the quality of human life serving as the most important qualitative and quantitative characteristic of human capital.

The responsibility for developing human capital falls on the individual, the family, and the state, as it leads to improvements in both micro and macroeconomic indicators over the long term. At the international level, the 'Human Development Index,' which quantifies human capital, is calculated annually by global organization.

The development of human capital is largely dependent on the level of advancement of the knowledge-based economy in a country. The knowledge economy has several important features:

- a person, along with their intellect and intellectual activity, holds a central position in the social sphere of enterprises;
- employment increases in the intellectual sectors of the economy;
- human capital becomes the primary factor of production;
- knowledge transforms into a distinct economic resource;
- science evolves into a productive force, serving as the core of the modern economy;
- the accumulation of national wealth occurs through knowledge-intensive assets, such as know-how and intellectual capital.

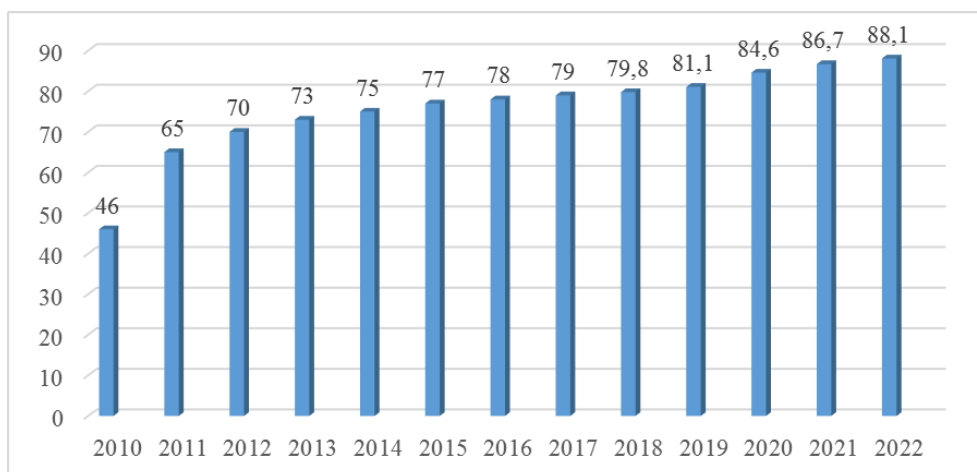
Information and Communication Technology (ICT), as a key component of the knowledge economy, plays a crucial role in accelerating the digitalization of the

economy. These processes are unattainable without creating the necessary conditions for both the digitalization of the economy and the development of the knowledge economy. Such conditions can be fostered by improving the institutional environment, increasing investment activity, supporting the development of science and technology, accelerating the adoption of innovations, training highly qualified personnel, stimulating competition among them, and other related measures [6, p. 69].

The use of ICT is one of the primary means of ensuring information accessibility. The availability and accessibility of information within a country is a crucial factor in raising the education level and qualifications of its workforce. Providing access to information plays an indispensable role in the formation of human capital, which is regarded as one of the key drivers of a country's economic development [2, p.46].

Let's refer to the following figure to understand the current state of information access for the population in Azerbaijan (Fig. 2).

From Figure 2, we can observe that the number of internet users in Azerbaijan has been steadily increasing over the studied periods. For example, the number of internet users in 2022 increased by 91.5% compared to 2010, 14.4% compared to 2015, 8.6%



**Fig. 2. Number of internet users per 100 people in Azerbaijan**

Source: SSCAR

compared to 2019, 4.4% compared to 2020, and 1.6% compared to 2021.

The COVID-19 pandemic led to a rise in internet usage due to various factors. For instance, in 2022, 39.4% of the population used the internet primarily to create connections and search for information. Additionally, 4.9% of the total population used the internet for education and training purposes (Fig. 3).

In the last decade, the volume and quality of information transmitted over the internet in Azerbaijan have significantly increased, and the availability of digital platforms for information exchange and processing has also improved.

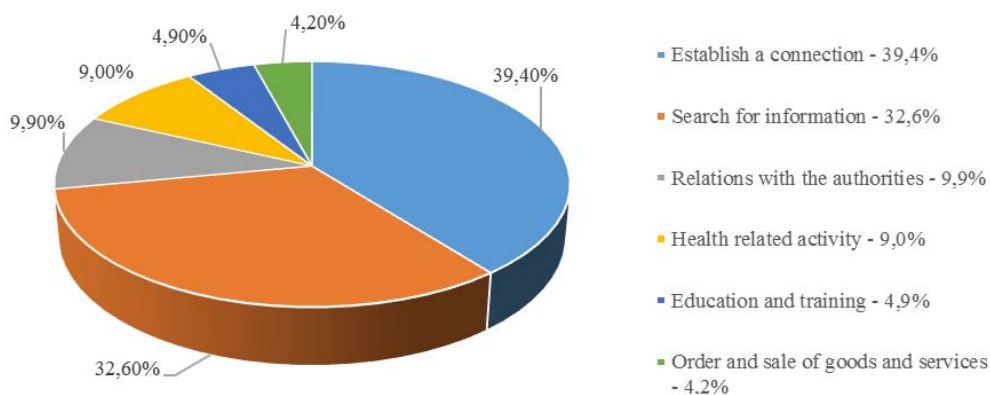
Today, it is essential to capitalize on the benefits of the digital economy, which are reflected in the acceleration of scientific and technological progress (STP), the demand for continuous innovation, and other fundamental changes. As the primary resource of the digital economy, human capital requires the adoption of new methods and approaches for managing its development, particularly in light of the digitization processes occurring within socio-economic relations [5, p.200].

One of the key trends for organizational success in the digital economy is the design, development, and implementation of new approaches to human capital. Human capital becomes the primary and decisive factor in

management decision-making within the framework of economic growth. Therefore, one of the goals of the digital economy is to establish new relationships between organizational management and employees. The most critical factor in the transition to the digital economy is human intellectual capital, which is of paramount importance, as it is the most valuable and non-renewable resource in society.

Elements of intellectual capital cannot create value on their own; a transformation occurs among the elements of intellectual capital, and the starting point of this transformation is human capital. Investments in human capital enhance structural capital and optimize business performance [13, p.200].

In Western countries, intellectual capital forms the foundation of scientific and technological progress (STP). High rates of economic development are observed in nations where continuous investments are made in human intellectual capital. In Azerbaijan, the state budget plays a key role in investing in human capital. Since education is the primary focus of human capital investments, a significant portion of the state budget is allocated to this area each year. To analyze the current level of state budget expenditures dedicated to certain components of human capital in Azerbaijan, let's refer to the following figure (Fig. 4).



**Fig. 3. Goals of Internet use in Azerbaijan in 2022**

*Source: SSCRA*



In 2022, Azerbaijan’s state budget expenditures amounted to 32,063.1 million AZN, of which 11.5% was allocated to education, 10.8% to social security and social protection, and 4.4% to healthcare. Compared to 2021, the expenditure on education increased by 19.5%, social security and social protection expenditures rose by 9.5%, and healthcare expenditures grew by 2.9%.

The level and quality of education can be considered the primary indicators of human capital. Based on this, it is also useful to analyze the educational attainment of the population in Azerbaijan (Table 1).

In 2023, 7.705 million people aged 15 and older in Azerbaijan had varying levels of education. Of these, 58.5% had completed secondary education, 16.4% had higher education, 10.2% had general secondary education, 9.3% had vocational or technical qualifications, and 5.6% had basic secondary education.

In general, it has been established that human capital is the key determinant of efficient economic functioning. Talented and competent specialists are the primary drivers of competitiveness, particularly in the era of digital transformation. Continuous technological progress is the foundation of

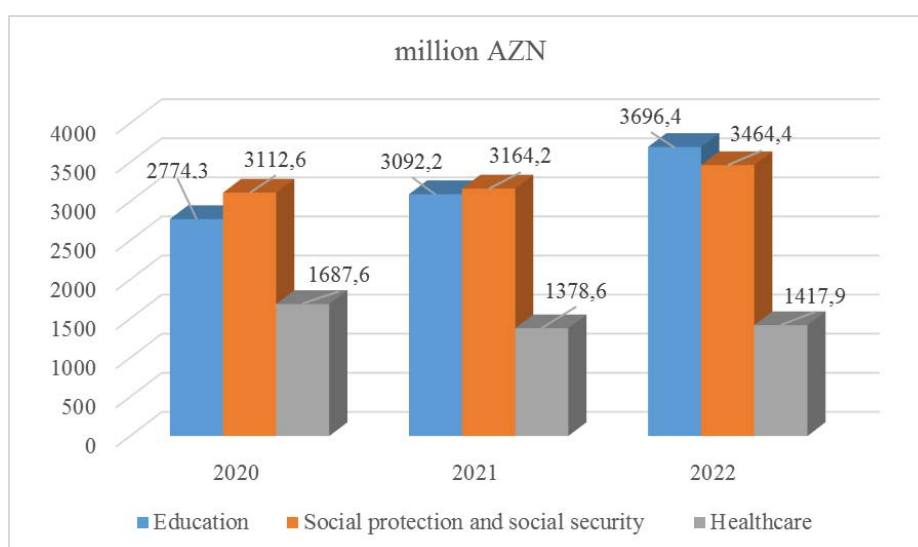


Fig. 4. Expenditures allocated to education, healthcare, social security and social protection from the state budget in Azerbaijan in 2022

Source: SSCAR

Table 1

Education level of the population aged 15 and over in Azerbaijan in 2019-2023, thousand people

Years	Those aged 15 and over	Including				
		Overall average	Totally average	Profession	Vocational	High
2019	7434	758	4355	414	695	1212
2020	7456	759	4368	414	697	1218
2021	7534	766	4409	418	704	1237
2022	7607	773	4452	421	711	1250
2023	7705	783	4509	427	720	1266

Source: SSCAR

transforming the traditional economy into a digital one, creating new opportunities and challenges for human capital. Information technologies, which are central to the operation of the digital economy, offer vast opportunities for obtaining, collecting, exchanging, and utilizing information and knowledge essential for the functioning and development of electronic society, e-commerce, and e-business.

Professional competence is a set of intellectual resources that play a crucial role in establishing long-term competitive advantage in the market. The nature of the skills possessed by individuals in the economy determines its operational capabilities. Incorporating social and humanitarian factors into the mission and strategy of the digital economy helps foster a new digital culture. The ability to shape this culture should be viewed as a core competency, directly tied to the identity of the economy and influencing its market position and competitive advantages.

Professional competence must be recognized as a valuable national asset that enables the economy to secure long-term competitive advantages. Given the variability of economic conditions, adapting competence to the current situation requires continuous change, which can be seen as a facet of human capital development, enhancing its overall value. The development of employee competence is directly tied to the development of human capital, increasing its effectiveness in performing tasks. As workers' competence grows, the value of these intellectual resources also rises.

The tangible results of efforts to enhance human capital include improvements in innovation, quality, organization, and work experience. Competence has become a vital asset in modern digital civilization. Continuous skill development is the best way to adapt to new conditions and drive innovative economic growth.

Thus, based on the research carried out in the article, the following can be formulated as preliminary results:

1. In the new conditions brought about by the digitization of the economy, the ability

to transmit information through alternative communication channels is becoming increasingly important. The development of digital communication methods enables any activity to achieve a global reach. The internet facilitates cheaper and easier access to remote resources, regardless of distance. Universal systems and the circulation of electronic documents alleviate concerns about access to essential information and reduce response times to market events, thereby reshaping the structure of the labor market.

2. In the digitalization of the economy, leveraging human capital is becoming easier through the right combination of competence, knowledge, and skills. Therefore, it is essential to effectively develop human capital by identifying the opportunities and conditions for utilizing modern ICT, such as multimedia, computer networks, artificial intelligence, and Big Data.

3. The transition to the digitization of the economy must be accompanied by the search for resources and tools to develop technologically competent human capital, focusing on its quality and efficiency. The primary quality parameter of human capital is its ability to be utilized in the context of new technologies, as it serves as the carrier of technological knowledge, which is the foundation of innovation. Additionally, the development of ICT requires a corresponding level of specialization from both its creators and users.

4. The use of digital technologies minimizes the time required to complete tasks, as information flows in real time, regardless of the distance between economic agents. Therefore, the digitization process largely depends on the quality of human capital. The digital economy introduces numerous changes and new conditions concerning human capital. As a result, it is essential to explore effective ways to align with modern trends by making the most efficient use of and investment in human capital.

### **Conclusions**

In general, considering the role of human capital in the digitalization of the economy, the following measures need to be taken to support its development:

1. The ability to adapt to rapid changes is of critical importance today. The development of human capital that is well-suited to digital transformations should be considered a key element of strategic economic changes.

2. Economic growth can be achieved through various factors, but the most effective and impactful is the increase in labor productivity. Labor productivity cannot grow without human involvement. The earlier investments are made in human development, the greater the return will be in the future. This is particularly important for our country, as we must remember that the economy cannot rely solely on natural resources, which will eventually be depleted. Therefore, it is crucial to develop knowledge-intensive industries, invest in science and education, adopt new technologies, and digitize the economy. These measures will increase labor productivity, accelerate economic growth, and foster innovative development.

3. The decisive role of human capital is tied to the knowledge-intensive nature of the digital economy. While factors such as access to communication, sales markets, and legislation are important for the success of digital transformation, even the most favorable conditions cannot drive development without high-quality human capital. Therefore, improving the quality of human capital should be the top priority.

4. Currently, knowledge is regarded as an essential resource for any country or enterprise, on par with financial and material resources. Knowledge and intellectual capital form the foundation for effective development and competitiveness across all sectors of the economy. As a result, the modern economy is increasingly defined by the intellectualization of knowledge-based technologies. The rising political, economic, social, and environmental instability in the world underscores the need for knowledge to be the primary resource driving the development of human society in the coming decades.

5. It is essential to improve the system for developing and utilizing human capital, with a key focus on enhancing the efficiency and coordination of both formal and informal institutions that govern education and the highly skilled labor market. To achieve this, it is necessary to reduce administrative barriers and review and improve control mechanisms.

6. Human capital is the basis of economic efficiency, not only at the enterprise and national levels, but also in the global market. A mechanism for interaction between the integrated structures of science, education, and business should be established through the development of appropriate institutional frameworks. These frameworks should aim to strengthen human potential as a system-creating factor in the innovation-driven economy.

## References

1. Abdullayeva, M.R. (2022). Human capital and its influencing factors. *Azerbaijan Confederation of Trade Unions, Azerbaijan Academy of Labor and Social Relations*. Materials of the 1st International Scientific-Practical Conference of Masters and Bachelors on “Human capital: problems, efficient use and prospects” dedicated to Victory Day. Baku, AALSR, pp. 82-86.
2. Allahverdiyeva, L.A. (2022). Measuring the degree of liberality of information services and evaluating their economic effects. *The abstract of the dissertation submitted to receive the scientific degree of Doctor of Sciences*. Baku, 60 p.
3. Decree of the President of the Republic of Azerbaijan on “Azerbaijan 2030: national priorities for socio-economic development”. Baku, February 02, 2021.
4. Statistical indicators of Azerbaijan. Statistical compilation (2023). Baku, 725 p.
5. Mammadova, S.A. (2023). Features of human capital management in the digital economy. *Scientific News*. No. 1, (Social and Technical Sciences Series), pp. 196-201.
6. Osmanov, I.O. (2022). Directions for developing the knowledge economy. Sumgayit State University, Yildiz Technical University. Higher Education Council of the Republic

of Turkey. Strategic directions of economic cooperation between Azerbaijan and Turkey. International scientific conference. Sumgayit State University, May 26–27, pp. 66-69.

7. Gasimli, V., Talibova, M., Guliyeva, G., Museyibov, F., Mirzayev, A., Gadashov, A., Ahmadova, G. (2023). Digital economy. Baku: Azprint publishing house, 262 p.

8. Akzholova, M. Zh. (2019). The role of human capital in the digital economy. Bulletin of Jalal-Abad State University. 2019. No 1(40), pp. 76-80.

9. Boykivska, G., Saladyak, K. (2022). The role of human capital in ensuring the effective development of enterprises. *Bulletin of Khmelnytsky National University*. No 5, Volume 1, p.131-134.

10. Vasilyeva, O. I., Ribka, A. O. (2021). Analysis of current problems in the formation and development of human capital in Ukraine. *Investments: practice and evidence*. No 4, pp. 93–97.

11. Priymak, V.I., Ginda, S.M. (2014). Current problems and prospects for the development of human capital in Ukraine. *Economics and management organization*. No 3 (19) – 4 (20), p.199-204.

12. Kholmatov, M. M. (2020). Digital economy of Tajikistan in assessing human capital. *Economy of Tajikistan*. No 1, p. 104-111.

13. Yılmaz, O, & Ozer, G. (2019). The effects of structural capital and human capital on the quantitative and qualitative performance of the enterprise. *University of Mustafa Kemal Journal of Social Sciences Institute*, 16 (44), 295-220

## DIGITALIZATION OF THE ECONOMY AS THE BASIS OF HUMAN CAPITAL POTENTIAL

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Digitalization of the economy is critically important in the era of global changes in the modern world. Like previous technological transformations, the digitalization of the economy is associated with a number of significant changes. The digital transformation of modern society has a profound impact on traditional human capital, as the active adoption of digitalization leads to the intellectualization of labor. In the context of a digitized economy, human capital – its development and level – becomes a key driver of economic growth and national prosperity. Currently, the primary goals of societal development are to ensure economic growth and improve quality of life. These objectives can be achieved through the establishment of a new economic model that fosters the digitalization of the

economy. Achieving an economic and technological breakthrough is impossible without addressing the challenge of enhancing the development of human capital.

**Relevance of the topic.** Today, countries around the world are experiencing changes marked by significant risks and opportunities, which are becoming more apparent across all areas of society. New technologies and innovative products are spreading rapidly, and existing business processes and economic models are being refined. The accelerated optimization and modernization of economic structures, along with the expanded use of innovations and the digitalization of the economy, are significantly transforming the quality of human capital. Digitalization has a profound impact on all socio-economic processes, including the development of human capital. Therefore, it is particularly important to examine the role of human capital in the context of a digitized economy, highlighting the relevance of this topic.

**The purpose of the article.** The purpose of this study is to justify the necessity of digitalizing the economy and to assess the role of human capital in this context. To examine the role of human capital within the digitalization of the economy, it is essential to explain its essence, importance, key characteristics, and constituent elements. Additionally, the study aims to explore various aspects of the digital transformation of modern society that influence changes in human capital, while evaluating the role of the knowledge economy and ICT – key components that drive the acceleration of economic digitalization. Considering the role of human capital in this process, one of the primary objectives is to offer recommendations for its development.

**Research methods.** Generalization, grouping, factor analysis, graph analysis, comparative analysis, development dynamics, and economic-statistical methods were the primary research approaches used in the preparation of this article.

**Scientific innovation.** Some pros and cons of the digitalization of the economy were reviewed, with the conclusion that the benefits outweigh the drawbacks. The primary factor for the success of the digitization process is having a sufficient number of highly qualified personnel in relevant positions, along with a system for training specialists with the necessary skills to develop and effectively apply innovative and digital technologies. The key factors influencing the development of human capital – such as the population's education level, digital literacy, and culture – were also emphasized. Above all, the importance of investing in human capital was highlighted as crucial for achieving these objectives.

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