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KEY DRIVERS OF HUMAN CAPITAL DEVELOPMENT UNDER THE INFLUENCE OF DIGITALIZATION

Abstract. Modern technological progress in the form of digitization significantly changes the working environment, prompting global changes in human resource management methods. Automation, robotics, and artificial intelligence not only increase productivity, but also place new demands on skills and other characteristics of human capital. The purpose of the article is to analyze the key factors influencing the development of human capital at the micro level in the context of digitalization. The article examines the challenges and solutions of the micro-level in terms of adaptability to modern features of the workforce under the influence of digitalization. It is emphasized that the COVID-19 pandemic has highlighted the need for staff flexibility and adaptability to ensure resilience in unpredictable circumstances. The importance of digital competence and continuous professional development is emphasized. Innovative analytical tools used in the field of human resource management transform this field into a strategic resource, forcing management to focus on improving the well-being of employees. Emphasis is placed on environmental, social and governance (ESG) criteria that are becoming important for today's organizations. The need for a strategic approach to talent management, adaptability and continuous learning in a dynamic business environment is emphasized. The proposed article can be useful to professional researchers, international organizations, state and local authorities. Prospects for future research include examining the role of public policy in regulating the use of artificial intelligence in the labor market.

Keywords: digitization; human capital; digital transformation; innovations; Artificial Intelligence.
Introduction. In today's context of rapid technological changes, digitalization plays a key role in shaping economic and social processes at the global level. The central place in this process is occupied by the development of human capital, which becomes a decisive factor in the competitiveness of countries and companies. The impact of digitization on human capital is multidimensional and is changing traditional approaches to education, workforce and talent management. The main drivers of human capital development in conditions of digitization are innovations in educational technologies, adaptation of educational programs to the needs of the rapidly changing labor market, development of digital skills and competencies, and, in particular, the formation of a new learning culture that meets the challenges of the digital era. In addition, the integration of artificial intelligence and automation into work processes, which requires employees to have a high level of technical literacy and flexibility, has a significant impact on the development of human capital. In this context, it is important to analyze the key aspects and challenges faced by educational and corporate systems in the context of digital transformation, as well as to study how technological changes affect the needs for qualifications and professional knowledge. The selected set of issues is especially relevant in the context of globalization and international competition, where countries and companies strive not only to adapt to changes, but also to actively use the latest technological opportunities to ensure sustainable development and growth.

Review of previous studies. The problem of the development of human capital under the influence of the expansion of digital technologies is considered by scientists both in Ukraine and abroad. Schneider M. [1] analyzes how digitalization of production affects human and organizational capital. It is emphasized that digital technologies can significantly increase productivity, but also require changes in the management structure and skills of employees. The importance of adapting educational programs for training personnel capable of working in new conditions is emphasized. Goldmann S. [2] explores the issue of conceptualizing the impact of technology on human capital. The study highlights various aspects of digital transformations and their impact on the skills and competencies of employees. Emphasis is placed on the need to develop new talent management strategies in conditions of constant technological changes. Acemoglu D. and others. [3] analyze the competition between people and robots on the example of French enterprises. The study's findings indicate that the introduction of robots may reduce the demand for manual labor, but also stimulate an increase in the demand for advanced skills. Acemoglu D., Restrepo P. [4] focus on the automation of low- and high-skilled labor. The study indicates that technological development can have mixed effects on the labor market, stimulating growth in certain sectors of the economy - and decline in other sectors. Beaudry P., Green D., Sand B. [5] indicate a reduction in the demand for certain highly qualified skills due to changes in the technological context, which requires changes in the standard model of training and development.
Björkdahl J. [6] studies digitization strategies implemented in production. The author emphasizes the importance of integrating the latest technologies to ensure the stability and competitiveness of enterprises. Balog M., Demidova S. [7] focus on the development of human capital within the framework of the Fourth Industrial Revolution. The authors analyze how changes in the technological environment affect the skills and knowledge needs of employees. Special attention is paid to education and training as the main tools for training personnel for the new realities of the digital economy. Khachaturyan A. [8] examines the impact of digitalization on human capital with a special emphasis on the changing role of knowledge and skills in the modern economic space. Ways of adapting employees to the demands of the digital economy are considered, as well as the importance of continuous professional development in response to rapid technological changes. Iordan M., Pielinescu E., Chilian M, [9] analyze the state of human capital in the digital society, focusing on EU countries. The authors emphasize the importance of digital literacy and information technology management skills. The work points to the need for policies that promote the development of digital skills of the population to increase their economic activity. The works of Ukrainian researchers emphasize the importance of human capital development in the conditions of digitization and globalization; the connection of these processes with modern trends in the connection between the national and world economy is highlighted separately. A. Kolot, O. Gerasimenko [10] analyze social and labor development at the current stage, highlighting global changes, new opportunities, limitations and challenges arising in this context. Scientists emphasize the impact of globalization on labor markets and social standards, discuss changes in the relationship between the employee and the employer, and also consider the issue of regulating labor relations in new conditions. Stryzhak O. [11] focuses on the relationship between the level of human capital development and digital technologies in the context of the formation of Society 5.0. The study examines how investments in education and training contribute to the upskilling of workers, which is key to the successful integration of the latest technologies into the economy and contributes to the evolution of society towards more avant-garde forms of interaction. Russiyann O. [12] studies the impact of the development of Industry 4.0 on the human capital of an industrial enterprise, focusing on foreign experience. It analyzes how the introduction of automation, robotization and intellectualization of production affects the training and development needs of employees, highlighting the key aspects and challenges facing enterprises in the era of digital transformations. Melnychuk V., Boyarynova K. [13] pay attention to digitalization of human capital development. It examines how technological innovations in education and corporate training can contribute to increasing the work efficiency and competitiveness of employees, revealing the potential of digital solutions for personalized and adaptive learning. This array of works forms a comprehensive view of modern challenges and opportunities for the
development of human capital and demonstrates the importance of integrating educational and technological strategies to ensure sustainable development and adaptation to new economic conditions.

The purpose of the article is to analyze the main factors that contribute to the development of human capital at the micro level in the conditions of increased digitalization of society. The article examines how technological innovation and digital transformation affect the training, skills and competencies of workers, as well as how these changes affect the efficiency and competitiveness of the labor market.

Presenting main material. The modern stage of technological development is characterized by a significant acceleration of innovation processes, which covers not only the sphere of technologies, but also aspects of human resource management. It is expected that at the global level, the future composition of employees will become the most diverse, consisting of 75% of representatives of the millennial generation [14]. In this sense, digitalization opens up new prospects for business development and growth. Company leaders note the positive impact of digitalization on human resources management, which in particular includes the integration of advanced technologies of automation, robotics and artificial intelligence. These innovations lead to significant changes aimed at improving the productivity of staff and the efficiency of business operations.

The COVID-19 pandemic has caused profound changes in the work environment, emphasizing the need to create adaptive and flexible work teams. This allowed companies to maintain stability and ensure development despite significant economic fluctuations. Research by Mercer [15] indicates that the financial consequences and disruptions in the work process caused by the pandemic have prompted employers to focus on forecasting future needs in the field of human resources, which brings the issue of human capital management to the forefront for stakeholders.

In this context, there is a clear need for a comprehensive approach to training and retraining of personnel, in particular in the field of digital competence. Thus, according to the World Economic Forum in Davos, 80% of employers see new approaches to personnel management as a key lever for business success at the current stage (Fig. 1) [14]. This need applies to both the private and public sectors, as both sectors need to equip their workers with the necessary knowledge and skills to work effectively in the Fourth Industrial Revolution. The importance of this process is increasing given the rapid pace of technological change and its impact on the labor market. Special attention should be paid to the processes of recruitment, training and retraining of employees so that they meet the needs of today's dynamic work environment. This is important not only for ensuring the competitiveness of companies, but also for saving jobs and further career growth of employees. Personnel management in this context turns into a strategic resource that requires special attention from top management and the board of directors. The role of HR
specialists becomes key in assessing training needs and developing programs that will facilitate rapid mastering of the latest technologies and work methods. In addition, it is important to consider digital education as a continuous process that involves not only youth, but also adult age groups. Knowledge and skills acquired in the process of digital learning should be relevant and suitable for solving real tasks in various fields. This creates the prerequisites for a flexible system of education and professional development that can quickly adapt to changes in the labor market and technological environment. The development of digital competences in all age categories, including programs for retraining and upskilling, is an important step on the way to creating a flexible and adaptive workforce capable of meeting the challenges of today.

Fig. 1. Changes in the plane of human capital development under the influence of digitalization

Source: compiled on the basis of data from the World Economic Forum [14].

In the context of the modern trend of dynamic changes, effective talent management is singled out as a critical success factor for organizations. According to a Mercer study [15], 65% of South Asian organizations identify environmental, social and governance criteria (ESG) as priority areas of activity in 2021. However, only 32% of them plan to invest in sustainable development, indicating the existence of a significant gap between strategic intentions and actual investments in sustainability. In addition, 63% of organizations identify the need for new skills to work effectively in the post-COVID-19 environment, but only 25% have implemented a policy to reward such skills, highlighting the need to accelerate adaptation and investment in the development of employee skills.

In the context of implementing a scientific approach to decision-making processes, 84% of organizations already use or plan to use analytical tools to improve the health and well-being of their employees. However, only 37% of them focus on balancing economic benefit and empathy. Additionally, 59% of companies...
intend to reform their flexibility policies as a key element to improve the employee experience, but only 9% are willing to consider phased retirement, indicating a limited willingness to implement flexible work models.

Talent management in modern organizations is becoming increasingly complex and significant in connection with sudden changes in market conditions. The ability of companies to adapt to dynamically changing conditions becomes crucial for their success. Today's challenges in talent management cover a number of aspects, including the need to adapt to rapid changes, improve employee well-being, and use analytics to optimize management decisions. Ensuring a high level of employee well-being requires creating favorable working conditions and flexible working hours, which are critical to attracting and retaining talent.

Strategic changes in organizational policies and practices include revising management models to allow for greater flexibility and responsiveness to change. It also means the development of flexible working schemes and a culture of continuous learning, which are necessary for effective adaptation (Figure 2). The implementation of modern analytical tools allows organizations to better understand the needs of their employees and adapt management strategies accordingly. Effective talent management in today's environment requires organizations to intensify adaptation efforts, improve staff well-being, and integrate analytics into management processes. Such changes not only improve operational performance, but also help create a more motivated and satisfied workforce, which is key to long-term success in a dynamic business environment.

**Fig. 2.** Priority areas of human capital development under the influence of digitalization

*Source: Compiled based on Mercer data [15].*
We can consider the key drivers of human capital development under the influence of digitalization through several main directions. The key drivers of human capital development in the digital age can be viewed through several main areas, including education and training, health and well-being, working environment, innovation and creativity, and ethics and safety. Digitization is transforming approaches to learning by providing access to online education and electronic resources, making educational opportunities more accessible. At the same time, the introduction of digital technologies in the field of health opens up new opportunities for telemedicine and health through mobile applications. The work environment is also adapting to new realities, requiring employees to develop programming, data analysis and project management skills. Innovation in IT and the growth of creativity stimulate the development of new ideas and approaches, and the focus on ethics and security reinforces the need to ensure reliable data protection. Each of these aspects makes an important contribution to the development of human capital, which is key to ensuring sustainable development in today's conditions of rapid change and innovation. The analysis is summarized in Table. 1.

### Table 1

<table>
<thead>
<tr>
<th>Driver</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Education and training</td>
<td>Digitalization is helping to increase access to education through online courses, virtual classrooms and e-learning platforms. This allows people to constantly improve their qualifications and adapt to the changing demands of the labor market.</td>
</tr>
<tr>
<td>Globalization of the workforce</td>
<td>Technology facilitates interaction between different cultures and collaboration at a distance. This opens up new opportunities for employers to hire talent from around the world, and for employees to work in international companies.</td>
</tr>
<tr>
<td>Health and well-being</td>
<td>Digital technologies such as mobile health apps are improving health monitoring and management, which directly impacts productivity and ability to work.</td>
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<tr>
<td>Flexibility and adaptability</td>
<td>Digitalization is changing traditional workplaces, allowing for more flexible work schedules and remote work, which can increase overall job satisfaction and work-life balance.</td>
</tr>
<tr>
<td>Productivity improvement</td>
<td>Automation and the use of artificial intelligence can significantly improve productivity, freeing people from routine tasks and allowing them to focus on more complex and creative aspects of work.</td>
</tr>
<tr>
<td>Career development</td>
<td>Digital career development platforms and social networks help increase opportunities for professional growth by providing tools for networking, learning and job hunting.</td>
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*Source: own analysis.*
These drivers reveal the nature of the impact of digitalization on human capital development, opening up new opportunities for growth and adaptation in a rapidly changing world. They stimulate innovative approaches in education and vocational training, support the skills needed for the modern workplace and promote the development of competencies that ensure competitiveness in the global market. In addition, digitalization helps to identify and use complex technological tools that ensure more effective management of resources and optimization of work processes, and also creates a basis for continuous self-improvement and professional development of an individual.

Conclusions. The current stage of technological development significantly transforms the working environment, stimulating not only technological innovations, but also significant changes in the ways of managing human resources. The rapid penetration of automation, robotics and artificial intelligence increases productivity and at the same time puts new demands on the qualifications of employees. Generational and ethnic differences in the workforce, particularly among millennials, require companies to be flexible in policies and adaptation programs. The COVID-19 pandemic has highlighted the need to have adaptive and flexible workforces capable of providing resilience in unpredictable environments. Continuous learning and professional development become especially relevant, as digital competence becomes key to effective work in the conditions of the Fourth Industrial Revolution. Effective human resource management is transformed into a strategic resource, requiring the attention of senior management and the implementation of innovative analytical tools to optimize the health and well-being of employees. It is also important to focus on environmental, social and governance (ESG) criteria, which are becoming a priority for many organizations. However, the existing gap between strategic intentions and actual investment in sustainability highlights the need for increased efforts in this direction. Increasing the flexibility and adaptability of workplaces is critical to attracting and retaining talent and supporting overall employee satisfaction. Reforming flexibility policies and introducing phased retirement options are becoming key elements affecting employee experience and job satisfaction. Modern challenges in talent management include the need to quickly adapt to changing conditions, integrate analytics to optimize management decisions, and create conditions for continuous learning and professional development. These changes not only improve operational performance, but also help create a more motivated and satisfied workforce, which is a key factor for continued success in a dynamic business environment.

Prospects for further research include studying the needs of state policy in managing the potential of artificial intelligence in the labor market.
References: