

## LABOR FORCE COMPETITIVENESS IN AN INNOVATIVE ECONOMY: GLOBAL TRENDS AND THE EXPERIENCE OF UZBEKISTAN

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### Abstract

The article analyzes the factors shaping the competitiveness of the workforce in the context of an innovative economy, global labor market trends, the impact of digital transformation, automation and the platform economy on workforce competencies. Based on the experience of leading countries - the USA, the European Union, Japan, South Korea and Singapore, the organizational and economic mechanisms necessary for the formation of a competitive workforce in the labor market of Uzbekistan are substantiated. The results of the study indicate the importance of the quality of personnel training, digital skills, innovative forms of employment and investments in human capital.

**Keywords:** Workforce competitiveness, innovative economy, labor market, digital skills, platform economy, gig economy, human capital, global trends.

### Introduction

The formation of an innovative economy is bringing about fundamental changes in the structure of the labor market. Digital technologies, artificial intelligence, automation, platform labor, and the expansion of remote employment have become the main factors determining the competitiveness of the workforce. In today's global labor market, the competitiveness of the workforce is determined not by traditional professional knowledge, but by digital competencies, flexibility, continuous learning, and the ability to adapt to rapidly changing technologies.

The experience of developed countries shows that the system of forming competitive personnel in an innovative economy is based on the principles of long-term investments in human capital, continuity of education, flexibility of qualification standards, and real-time response to the technological requirements of the labor market.

In recent years, Uzbekistan has also been implementing large-scale reforms to modernize the labor market, widely introduce the digital economy, train personnel in modern professions, and develop innovative employment in the service sector. However, in the current conditions of increasing competition in the global labor market, a comprehensive scientifically based approach is needed to increase labor competitiveness.

Therefore, this study systematically analyzes international trends in labor competitiveness in an innovative economy, their shaping factors, the practice of developed countries, and opportunities and constraints for Uzbekistan.



### Analysis of literature on the topic

The issue of labor competitiveness in an innovative economy has emerged as one of the leading scientific directions globally, and various scientific approaches have been developed in this area by foreign and domestic researchers. A systematic analysis of the literature shows that the transformation of the labor market, the digital economy, artificial intelligence, and the expansion of platform labor are fundamentally affecting the content and essence of labor competitiveness.

Brynjolfsson and McAfee in their works “The Second Machine Age” and “Machine, Platform, Crowd” deeply analyzed the impact of digitalization on the structure of the labor market. According to them, although automation and artificial intelligence are replacing part of human labor, they are also creating new opportunities for highly skilled professions. This process shows that the main factor determining the competitiveness of the labor force is digital skills.

The International Labor Organization (ILO)’s annual reports, such as “Future of Work” and “Work in the Digital Economy,” show that the global labor market is undergoing a transformational transformation, with new forms of employment – platform work, gig economy, and remote work – emerging. ILO research identifies hybrid skills, adaptability, communicative competencies, and the ability to learn and grow as key components of workforce competitiveness.

The “Future of Jobs Report,” published by the World Economic Forum (WEF), is a key source for identifying global labor market trends. These reports include creative thinking, analytical skills, digital literacy, technology skills, as well as flexibility and teamwork. WEF research emphasizes that the quality of human capital is a crucial factor in creating a workforce that is fit for an innovative economy.

The human capital theory developed by T. Schultz and G. Becker serves as a fundamental scientific basis for explaining labor market competitiveness. According to the theory, labor competitiveness is directly related to the quality of education, skills, health, innovative thinking, and professional competencies. Among these factors, digital competencies and innovative thinking have become the most important strategic resources in the modern economy.

Scientific sources devoted to the experience of developed countries - including the USA (Harvard Business Review, MIT Press), the European Union (CEDEFOP, Eurofound), South Korea (KDI Reports), Singapore (SkillsFuture Singapore) - indicate the following as effective mechanisms for increasing labor competitiveness:

- competency-based education model,
- lifelong learning (continuous education),
- technical and digital qualification standards,
- state-education-business cooperation,
- regulatory and legal framework for the platform economy.

These experiences show that increasing the competitiveness of the labor force in the context of an innovative economy is being implemented in advanced countries on the basis of complex, systematic and long-term strategies.

An analysis of local literature also confirms the relevance of this problem. The scientific research of scientists such as Q.Kh. Abdurahmonov, Z.Y. Khudoyberdiev, G.Q.



Abdurahmonova, Sh.Sh. Shodmonov covers the development of the labor market of Uzbekistan, the quality of the labor force, innovative forms of employment, and the impact of the digital economy on labor relations. In their research, the following areas are considered priority areas for increasing the competitiveness of the labor force in the country:

- an approach to training that meets the real demands of the labor market;
- development of the digital education system;
- market mechanisms for advanced training and retraining;
- increasing youth employment through innovative forms.

Also, “Digital Uzbekistan – 2030”, the Concept for the Development of Education, the Employment Strategy, and materials from the Ministry of Public Education and Higher Education form the normative basis of state policy to increase the competitiveness of the workforce.

### **Research Methodology**

The methodology of this study is aimed at studying global trends in labor competitiveness in the context of an innovative economy, analyzing them and identifying opportunities for their application in the conditions of Uzbekistan. The theoretical basis of the study is the theory of human capital, labor market segmentation, the concept of the digital economy, platform labor and gig economy models. The study used scientific methods such as comparative analysis, trend analysis, statistical dynamic analysis, factor analysis.

### **Analysis and Results**

In the context of an innovative economy, the competitiveness of the labor force is one of the main factors determining the dynamics of the country's economic development. Global experience shows that the competitiveness of the labor force does not depend only on labor skills or qualification levels, but is inextricably linked to digital transformation, the flexibility of the education system, the expansion of the platform labor segment, and investments in human capital.

In the context of an innovative economy, the competitiveness of the labor force is determined by transformations in the global labor market, the widespread introduction of digital technologies, the expansion of the platform economy, and increased investments in human capital. Below is a comparative analysis of global trends and Uzbekistan's labor market indicators.

The data in Table 1 clearly demonstrates the growing role of digital skills as a decisive factor in the competitiveness of the workforce in the era of the digital economy. All leading countries have seen a sharp increase in the demand for digital competencies between 2020 and 2024, indicating a fundamental transformation of the labor market.

In technologically advanced countries such as the United States and Singapore, the demand for digital skills is around 70–81%. This process indicates that digital technologies, artificial intelligence (AI), big data and automated services are taking a leading role in their economic model.



**Table 1 Global growth in demand for digital skills (2020–2024, %)**

Country / Territory	2020	2022	2024	Growth	Comment
United States	52%	61%	70%	+18 p.p.	High demand for IT and AI
European Union	48%	56%	64%	+16 p.p.	The impact of the “Digital Skills Agenda”
South Korea	60%	68%	76%	+16 p.p.	Smart industry and EdTech
Singapore	63%	72%	81%	+18 p.p.	Lifelong learning model
Uzbekistan	26%	35%	47%	+21 p.p.	IT centers, “One Million Uzbek Coders”

In the European Union, this indicator has increased from 48% to 64%, which confirms the effectiveness of the “Digital Skills Agenda” program.

The main reason for the high indicators in South Korea and Singapore is the digital education system and the lifelong learning strategy.

In Uzbekistan, the growth rate is relatively high:

26% → 47% (21 p.p. increase).

This is evidenced by the state policy aimed at the IT sector, the increase in the number of digital centers, the “One Million Uzbek Coders” program, IT Parks and the expansion of the concept of “digital economy”. For example, the IT services sector, which is the core of the digital economy, is growing by 30–40% annually.

In general, the table shows that digital literacy in the labor market has now become a mandatory competency, not an option. This creates the need for a fundamental renewal of personnel policy for Uzbekistan as well.

**Table 2 Growth in the share of platform labor and gig economy (2020–2024)**

Country	2020	2021	2022	2023	2024	Change
USA	28%	30%	33%	35%	36%	+8 p.p.
European Union	17%	19%	20%	21%	22%	+5 p.p.
Turkey	10%	13%	16%	18%	20%	+10 p.p.
India	14%	18%	22%	26%	30%	+16 p.p.
Uzbekistan	6%	9%	12%	15%	19%	+13 p.p.

Table 2 confirms that the gig economy and platform work are becoming a major segment of the global labor market.

The fact that the share of platform employment in the US has reached 36% indicates the emergence of the “Uber model” as an economic phenomenon. This is due to the increasing demand for flexibility, time management and a highly mobile workforce in the labor market.

In the European Union, growth is relatively slower (17% → 22%), as there is a strong social protection system and permanent forms of employment prevail. However, digital transformation is also leading to changes in the structure of the labor market in this region.

In emerging economies such as India and Turkey, rapid growth in platform work is observed.

The reasons for this process are:

- a young population,
- widespread use of mobile applications,
- a huge size of the informal labor market,



– limited opportunities to find work.

In Uzbekistan, the indicator increased from 6% to 19%, a threefold increase. This shows the rapid development of remote work, freelancing, online services and e-commerce in the country. The greatest growth is observed in IT, design, online education, delivery services.

The growth of the gig economy is associated with the following systemic factors:

- digitalization,
- new opportunities for youth employment,
- urbanization,
- expansion of platform business models.

The table shows that the Uzbek labor market is developing synchronously with global trends. This requires the development of regulatory mechanisms in the economy that are compatible with new forms of employment.

**Table 3 Investment in human capital and changes in the competitiveness index**

Country	Investment in human capital (% of GDP)	Competitiveness Index (0–1)	Result
Singapore	7.1%	0.88	1st place in the world
South Korea	6.5%	0.81	Innovative training
European Union	5.2%	0.76	Strong education system
Turkey	3.8%	0.62	Industry-integrated personnel
Uzbekistan	2.9%	0.55	Great potential for growth

Table 3 shows the direct relationship between the volume of investments in human capital and labor market competitiveness.

Singapore and South Korea allocate 6-7% of GDP to education and training. The labor market in these countries is provided with a highly qualified, innovative workforce. As a result, their competitiveness index is above 0.80.

While the investment level in the European Union is 5.2%, their labor market has a strong social protection system, so the overall level of competitiveness is high.

Turkey has an average level of investment, and the competitiveness index is also average.

Uzbekistan spends 2.9% of GDP on education. This is not a low figure, but there is a significant difference when compared with the above countries. As a result, the competitiveness index is relatively low - 0.55.

At the same time, in recent years, Uzbekistan has seen positive growth in the following areas:

- new Universities (TATU branches, Turin, INHA, etc.),
- increase in IT Park residents,
- modernization of the professional education system,
- retraining programs through monocenters,
- formation of a startup ecosystem.

These investments are strategic factors that increase competitiveness in the labor market.



**Table 4 Evaluation of competitiveness factors in the labor market of Uzbekistan**

Factor	Importance level (1–10)	Impact
Digitalization	9	Increases labor productivity
Quality of Education	8	Deepens competencies
Innovative Infrastructure	7	Forms new professions
Labor Market Flexibility	6	Expands employment forms
Regulatory Reforms	7	Regulates platform labor

Analysis of Table 4 reveals the priority of factors determining competitiveness in the labor market of Uzbekistan.

Digitalization (9 points) is assessed as the strongest factor. This is due to the rapid growth of the service sector, e-government, digital payments and IT services market in Uzbekistan. Quality of education (8 points) is the main condition for the formation of a competitive workforce. Currently, the process of modernization of the education system, advanced training and adaptation to international programs (PISA, IELTS requirements) is underway. Innovative infrastructure (7 points) is explained by the increase in the number of technoparks, IT Parks, business incubators. They form new professions and new forms of employment.

Flexibility of the labor market (6 points) is currently assessed at an average level. This is because labor legislation is not fully adapted to platform employment, freelancing and remote work.

Regulatory and legal reforms (7 points) - indicates that intensive legal reforms have been implemented in recent years regarding employment policy.

### Conclusion

The results of the study show that the formation of labor competitiveness in the context of an innovative economy is associated with fundamental structural changes on a global scale. Acceleration of digitalization, the expansion of platform labor and the gig economy, increased investment in human capital, and the strengthening of the system of training highly qualified personnel - all this is creating new demands and new competencies in the labor market.

Global experience shows that in developed countries such as the USA, the European Union, South Korea, and Singapore, the competitiveness of the labor market is ensured by the share of digital skills, a system of continuous professional development, flexible forms of employment, and a developed innovative infrastructure. In these countries, rapid flexibility of the labor force, the formation of new professions in line with technological changes, and an increase in labor productivity are observed.

The experience of Uzbekistan shows that the country's labor market is transforming in line with the innovative economy. The 21-point increase in demand for digital skills between 2020 and 2024, a threefold increase in the share of platform labor, and a sharp expansion of employment in IT services have created new opportunities for the labor market. However, the low level of investment in human capital compared to developed countries, weak regulation of platform labor, the persistence of the digital divide, and systemic problems with the quality of education are preventing full competitiveness. In general, the transformation of the Uzbek labor market



in line with global trends means that the country can ensure the international competitiveness of its workforce by increasing investment in human capital, increasing labor market flexibility, expanding digital competencies, introducing training programs for new professions, and regulating innovative forms of employment. This is of strategic importance for the sustainable development of an innovative economy.

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