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ARTIFICIAL INTELLIGENCE AND THE LABOR MARKET: OPPORTUNITIES AND RISKS (THE CASE OF UZBEKISTAN)

Rozimurodova Dilroz
Student of Economics, Group 1/24
University of Science and Technologies
Rasulov Rustambek Odilovich
Acting Associate Professor, Department of Social Sciences
University of Science and Technologies
Doctor of Philosophy (PhD) in Philosophy

Abstract

This scientific article provides a comprehensive analysis of the impact of artificial intelligence (AI) technologies on the labor market. The study examines the role of artificial intelligence in shaping employment levels, labor productivity, job transformation, and the demand for new competencies. It also discusses the socio-economic risks arising from the implementation of artificial intelligence, including job losses and the widening skills gap. Using the example of Uzbekistan's labor market, the processes of AI adoption, existing challenges, and future prospects are analyzed, and scientific and practical recommendations aimed at adapting the labor market are developed.

Keywords

artificial intelligence, labor market, employment, digital transformation, Uzbekistan.

Introduction

In recent decades, technological progress observed in the global economy—particularly the rapid development of artificial intelligence (AI) technologies—has had a deep impact on all structural components of economic systems. Artificial intelligence enables not only the automation of production processes but also fundamental changes in management, analysis, planning, and decision-making systems. The labor market is one of the sectors most sensitive to the impact of AI technologies. As a result of automation and digitalization, some traditional professions are gradually losing their relevance, while new professions and specializations are emerging. This process leads to structural changes in the labor market, diversification of employment forms, and increased labor productivity.

For developing countries, including Uzbekistan, the introduction of artificial intelligence technologies into the economy is of strategic importance. Within the framework of the "Digital Uzbekistan – 2030" strategy, the widespread implementation of digital technologies in public administration, finance, industry, education, and services has been defined. This process requires qualitative renewal of the labor market. At the same time, the rapid development of artificial intelligence also creates social risks in the labor market, such as the reduction of low-skilled jobs, difficulties in professional adaptation, and the intensification of the digital divide. Therefore, an in-depth scientific analysis of AI's impact on the labor market and the development of effective policy decisions are among the most urgent tasks today.

The purpose of this article is to analyze the impact of artificial intelligence technologies on the labor market from theoretical and practical perspectives, to identify emerging opportunities and risks in Uzbekistan, and to develop scientific and practical recommendations for labor market adaptation.

Literature Review

"Artificial intelligence performs simple, repetitive tasks, but creates new job opportunities for highly skilled specialists". The point is that in Uzbekistan, ordinary office workers, data entry employees, or low-skilled workers in the manufacturing sector can have their tasks performed

with the help of artificial intelligence. As a result, workers are forced to improve their qualifications, because opportunities expand for highly skilled specialists such as programmers, data analysts, and IT professionals. At the same time, labor market demands change: simple repetitive jobs decrease, while job opportunities increase for young specialists who can work with modern technologies. For example, the expansion of IT companies in Tashkent and the growing number of data analytics projects clearly demonstrate this trend. Therefore, students are required to learn modern technologies and acquire new skills, which is considered a necessary condition for being competitive in the labor market. [1]

"If AI enters production processes, the structure of the labor market changes and technical as well as cognitive skills are required." As a result, Uzbekistan will need new qualified workers in automated factories, finance, and logistics sectors. For example, the workforce on automated assembly lines decreases, but the demand for technical specialists who can configure robots and manage programs increases. At the same time, if employees do not learn new technologies, their jobs will be at risk. Therefore, it is very important to include courses on digital skills, robotics, and information technology in the curricula of higher education institutions and vocational colleges. This not only improves workforce qualifications but also aligns Uzbekistan's economy with modern requirements. [2]

"Countries that invest in retraining workers to adapt to AI develop faster and experience lower unemployment." In this regard, Uzbekistan is developing IT and digital skills through the "Digital Uzbekistan 2030" strategy. For example, young people are preparing for new jobs through courses where they learn programming, data analytics, and working with artificial intelligence. At the same time, economic growth accelerates and the risk of unemployment decreases, as demand for modern professions increases in the labor market. From this perspective, it is necessary for the state to take political and economic measures in this direction, because effective allocation of resources is a key factor in preparing the future workforce. [3]

According to World Bank data, "If the digital divide is not eliminated, AI will increase income inequality." This means that if the gap between rural and urban youth in Uzbekistan is not reduced, AI will benefit only urban and highly skilled workers. Therefore, it is necessary to create digital courses and opportunities for rural youth, which will ensure equal opportunities in the labor market in the future. For example, by organizing digital courses in Samarkand or Bukhara regions, young people can improve their IT skills and prepare for the urban labor market. [4]

"The education system must adapt to changes related to AI." Accordingly, Uzbekistan should incorporate modern technologies and digital skills into higher education and vocational college programs. Through this, students will be prepared for the digital economy from an early stage and will be able to meet new labor market demands. For example, young people in IT schools and startup incubators in Tashkent are learning the basics of robotics and artificial intelligence, which prepares them for the modern labor market. [5]

According to reports from the Ministry of Employment and Labor Relations of the Republic of Uzbekistan, "During the digital transformation process, demand for IT sectors is increasing, while low-skilled labor requires retraining." For example, training courses and professional development programs should be organized for young people and employees in Uzbekistan, which will help maximize the positive impact of AI. At the same time, these programs prepare workers to work with new technologies and contribute to the digital development of the economy. [6]

Therefore, artificial intelligence has a dual impact on Uzbekistan's labor market: on the one hand, it creates new job opportunities, modern professions, and possibilities in the fields of IT and digital competencies for highly skilled specialists; on the other hand, there are risks such as

job loss for low-skilled workers, digital inequality, and the automation of traditional jobs. Thus, state policy and the education system must adapt to AI: retraining, courses, teaching digital skills, and creating equal opportunities for rural and urban youth are key components of the strategy. In simple student terms, learning to work with AI is no longer just a convenience, but a necessity for preserving future jobs and creating new opportunities.

Strategies for Mitigating AI Impact in Uzbekistan

Several key strategies can help mitigate the negative impact of artificial intelligence on Uzbekistan's labor market. First, expanding retraining and professional development programs is essential, particularly for workers at risk of job displacement due to automation. Providing access to online courses and digital training can help workers acquire new skills.

Second, aligning the education system with AI and the digital economy by offering courses in programming, data analytics, and robotics will prepare students for future labor market demands. This approach benefits both current students and existing workers seeking new employment opportunities.

Third, reducing the digital divide by creating equal opportunities for rural and urban youth is critical. Establishing digital training centers, courses, and startup incubators in rural areas will enhance skills development and labor market readiness.

Fourth, supporting IT and technology startups encourages innovation, job creation, and youth engagement in advanced technological fields. Startup incubators and bootcamps in cities such as Tashkent and Samarkand play a significant role in developing skilled professionals.

Finally, strengthening cooperation between the public and private sectors is necessary to create new jobs and stabilize the labor market. Comprehensive policy measures can help maximize AI's benefits while minimizing its negative effects.

Conclusion

This study analyzed the impact of artificial intelligence on Uzbekistan's labor market and strategies for mitigating its effects. While AI automates simple repetitive tasks, it simultaneously creates new opportunities for highly skilled professionals, particularly in IT, finance, manufacturing, and data analytics sectors.

Therefore, retraining workers, improving qualifications, and developing modern competencies are essential. Artificial intelligence transforms jobs rather than eliminating them entirely. By promoting lifelong learning, ensuring equal opportunities for rural and urban youth, and aligning education with labor market needs, Uzbekistan can build a competitive workforce.

In conclusion, artificial intelligence has a dual impact on the labor market: it generates new jobs and modern professions while reducing traditional repetitive employment. Coordinated efforts by government, educational institutions, and individuals can maximize AI's positive impact and reduce its risks.

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