

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON EMPLOYMENT AND THE LABOR MARKET

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Abstract

This study is aimed at a comprehensive study of the influence of artificial intelligence technologies on the modern labor market and employment structure, that is, based on theoretical analysis and practical research. The article emphasizes the dual nature of AI development, noting that, on the one hand, there are opportunities to increase efficiency, reduce costs, and create new jobs in the production and service sectors, and on the other hand, the automation of traditional professions leads to the reduction of certain jobs and an increased risk of unemployment. Within the framework of the empirical part of the study, a quantitative survey was conducted among young people and students of Uzbekistan $n=50$. The survey results showed that the majority of respondents, 78%, have a general understanding of artificial intelligence technologies, that is, they have an understanding of what artificial intelligence is and what tasks it performs today. However, a significant portion of them, 64%, expressed concern about the possibility of job losses in the future due to the development of AI. At the same time, 70% of participants believe that artificial intelligence will stimulate the emergence of new professions and specialties, which indicates the presence of relatively optimistic views among young people. As a result of the analysis, it was found that in the context of the increasing digitalization of the labor market, not only technological knowledge, but also such skills as flexibility, creative thinking, and readiness for continuous learning are becoming increasingly important. The conclusions of the study emphasize that in the era of artificial intelligence, the development of digital skills, retraining, i.e., strengthening the processes of reskilling and upskilling, is a decisive factor in adapting to changes in the labor market.

Keywords:

Artificial Intelligence, Employment, Labor Market, Automation, Digital Skills

Introduction

In recent decades, artificial intelligence has generated significant interest in the social sciences with its development and widespread adoption, due to the controversial impact of this technology on unemployment. As Francis Harry noted, "artificial intelligence is a new digital threshold that will have a profound impact on the world, changing our way of living and working" (WIPO, 2019c). The exponential growth of digital data and a sharp increase in computing power allowed for a revolutionary impact on artificial intelligence. The emergence of modern information technologies and cognitive machines that work with artificial intelligence has radically changed people's lives and work activities. Although artificial intelligence increases productivity in some areas, in some cases it can replace human labor and revolutionize professions to a certain extent. The main problem is the decline in demand for various jobs and the loss of professional status, which is more important than the loss of wages. On the other hand, in the long term, technological changes are expected to further enhance human skills through newly created jobs.

Therefore, since there are different opinions about the consequences that artificial intelligence causes, the main concern is about the contribution of artificial intelligence to the unemployment rate. Also, the first type of impact is a positive effect, which means that artificial intelligence reduces the unemployment rate. In this case, artificial intelligence does not differ much from other new technologies and similarly creates high productivity. The resulting economic expansion creates more jobs and thus reduces the unemployment rate. Special cases of structural unemployment can be observed, but they are temporary and decrease as the labor market returns to equilibrium. The second type of impact is a negative impact, in which artificial intelligence contributes to an increase in unemployment. In this situation, Nilson (1984, p.5) argues that “even if it (artificial intelligence) creates a greater volume of work, this work can be performed by artificial intelligence devices, without implying new jobs for people.”

From this perspective, this article analyzes the impact of artificial intelligence on unemployment based on a theoretical model. The main results show that there is a nonlinear relationship between a country’s level of artificial intelligence and its unemployment rate. More precisely, artificial intelligence improves employment at a low level of inflation, otherwise its impact will be zero.

Literature Review

Artificial intelligence (AI) is widely discussed in academic research due to its growing impact on labor markets and employment structures. While earlier discussions predicted large-scale job losses, recent studies suggest that AI mainly leads to changes in job structure and employment patterns rather than total job destruction.

Shen and Zhang (2024) show that AI technologies do not reduce total employment. Based on data from 30 Chinese provinces between 2006 and 2020, they find that AI increases labor productivity and supports job creation. The authors argue that AI improves the division of labor and contributes to virtual agglomeration, where digital economic activities become more interconnected. This process expands employment opportunities, especially for women and workers in labor-intensive sectors. (Shen & Zhang, 2024)

Similarly, broader academic research suggests that AI leads to job shifting rather than job loss. A meta-analysis of 127 studies indicates that productivity growth is strongly associated with increases in employment and wages. These results show that when AI improves productivity, firms expand production, which creates new demand for labor. Data from OECD countries also confirms that productivity growth is linked to higher employment levels. Long-term evidence shows that working hours have decreased in many advanced economies, while productivity and income have increased (Zenodo, 2024).

Another important finding is that AI is changing the nature of work rather than eliminating it. As AI automates routine tasks, workers are shifting toward jobs that require creativity, communication, and problem-solving skills. This shift is also associated with more flexible working conditions, including remote work. In addition, higher productivity may allow workers to earn more while working fewer hours.

However, some studies highlight unequal effects of AI. High-skilled workers benefit more because they can use AI to increase their productivity, while low-skilled workers face a higher risk of job displacement. Without proper training and education, these workers may struggle to adapt. Therefore, researchers emphasize the importance of government policies such as retraining programs and social protection measures (PNAS Nexus, 2024).

In addition, research shows that AI may increase unemployment risk in some industries, especially where workers cannot quickly move into new roles. However, these effects are often temporary if proper support systems are available. This demonstrates that the impact of AI depends not only on technology but also on how societies manage the transition.

In conclusion, studies by Shen and Zhang (2024) and other researchers show that AI transforms labor markets by increasing productivity, changing job structures, and influencing working conditions. While AI creates new opportunities, it also presents challenges for certain groups. Therefore, effective policies and continuous skill development are necessary to ensure that the benefits of AI are shared across society.

Methodology

This research was conducted to study the impact of artificial intelligence on employment and the labor market. For obtaining accurate and measurable results, the quantitative research method was chosen. A questionnaire was used as the main data collection tool.

The study was conducted among urban students and young job seekers of Uzbekistan. A total of 50 people participated in the survey. Participants were randomly selected and formed a group representing different levels of education: university students, recent graduates, and those currently seeking employment.

The survey was conducted online through digital platforms. This method was chosen due to the quick collection of data and convenience for participants. The questionnaire consisted of 10 structured questions, some of which were based on selection from variants, and others on the Likert scale. The questions are aimed at identifying the opinions of participants about artificial intelligence, its impact on jobs, and their personal concerns about job losses.

The main topics covered:

1. Awareness of artificial intelligence technologies;
2. Risk of job loss due to automation;
3. Thoughts about whether AI creates or destroys new jobs;
4. Preparation for adaptation to new technologies;
5. Readiness to learn digital skills.

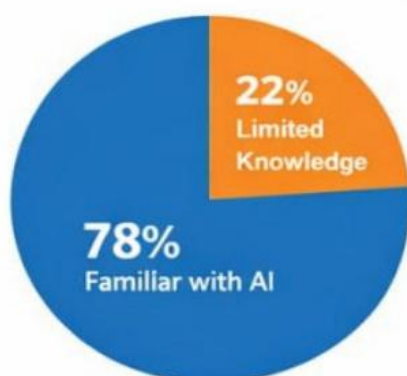
Data collection was carried out over a week. All responses were automatically recorded and saved for further analysis. After data collection, the results were analyzed using simple statistical methods such as the percentage distribution and analysis of frequently encountered responses.

No personal or confidential information was collected from participants, and all responses were kept anonymous. This contributed to the reliability and truthfulness of the answers.

Results

The survey results showed several important trends in the impact of artificial intelligence on employment.

Awareness of Artificial Intelligence



Of the 50 respondents, 78% are familiar with the concept of artificial intelligence, and 22% have limited knowledge on this topic.

Do You Think AI Will Lead to Job Losses?



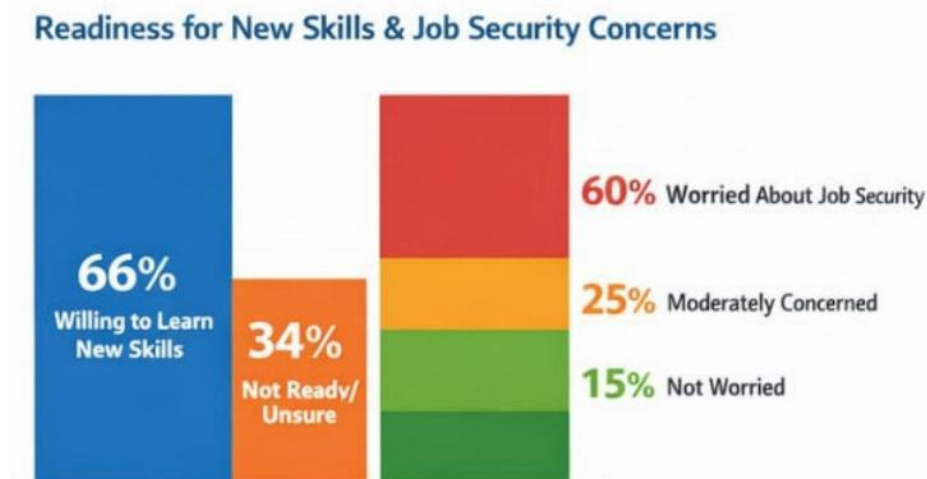
When asked whether AI could lead to job losses, 64% of participants agreed that artificial intelligence increases the risk of unemployment. In contrast, 20% believed that AI does not significantly affect job availability, and 16% were unsure. To the question of whether AI can reduce jobs, 64% of respondents answered that AI increases the risk of job loss. 20% believed that AI would not significantly affect job opportunities, while 16% could not give a definitive answer.

Industries Most Affected by AI



To the question of which industries AI most affects, 52% indicated production and industrial work, 28% - office and administrative work, and 20% - customer service and retail trade.

Also, 70% of participants believe that AI will create new types of jobs in the future. 18% disagreed with this, and 12% were skeptical.



Regarding personal training, 66% of participants stated that they are ready to learn new skills to adapt to technological changes. 34% indicated that they are not ready to adapt or are uncertain.

Regarding the importance of digital skills, 82% of participants consider it necessary for future work. 10% disagreed with this, while 8% responded neutrally.

According to the last question, 60% of respondents are concerned about future job security due to the rapid development of AI, 25% are moderately concerned, and 15% are not concerned about this.

Discussion

Despite providing useful insights into the perceptions of young people regarding artificial intelligence, the findings of this study should be interpreted with a degree of caution. One of the main limitations lies in the relatively small sample size of 50 participants, which restricts the statistical reliability of the results. A larger sample would likely produce more stable and representative findings. Furthermore, the study focuses primarily on students and young job seekers, which creates a demographic bias. This group is generally more exposed to digital technologies and may have different attitudes compared to older or more experienced workers. As a result, the conclusions drawn from this research cannot be fully generalized to the entire labor market.

Another important limitation is related to the data collection method. The use of an online questionnaire, while efficient and convenient, may introduce response bias. Participants might provide socially desirable answers or respond without deep reflection. In addition, structured questions and Likert-scale responses limit the ability of respondents to express complex or nuanced opinions. This means that the data primarily reflects surface-level perceptions rather than deeply considered views. Consequently, the results should be seen as indicative trends rather than definitive conclusions.

It is also necessary to consider the psychological and informational factors that may influence participants' responses. The relatively high level of concern about job loss due to artificial intelligence may not solely reflect actual labor market conditions, but rather a perception shaped by media narratives, public discourse, and uncertainty about future technological developments. Many individuals are exposed to simplified or exaggerated portrayals of artificial intelligence, which can increase fear and misunderstanding. Therefore, the concern expressed by 64% of respondents may partly represent a perception gap rather than an objective assessment of reality.

At the same time, the finding that 70% of participants believe that artificial intelligence will create new jobs suggests a certain level of optimism. However, this apparent contradiction—fear of job loss alongside belief in job creation—may indicate a lack of clear understanding rather than a fully informed perspective. Respondents may recognize general trends without having a detailed understanding of how labor markets adapt to technological change. This highlights the importance of improving public awareness and education about artificial intelligence and its real economic implications.

From a theoretical perspective, these findings are consistent with existing economic literature. For instance, John Maynard Keynes introduced the concept of technological unemployment, emphasizing that technological advancements can temporarily disrupt labor markets. Similarly, David Autor argues that automation does not eliminate work entirely but instead transforms the nature of jobs, shifting demand toward new skills. Carl Benedikt Frey also highlights the vulnerability of certain occupations to automation, particularly routine and low-skill jobs. The results of this study reflect these theoretical perspectives, suggesting that public opinion is broadly aligned with academic discussions.

Nevertheless, an important insight emerging from this study is the role of adaptability. The fact that 66% of respondents expressed readiness to learn new skills indicates a positive attitude toward change. This suggests that while individuals may feel uncertain about the future, they are also willing to take steps to remain competitive in the labor market. In this context, the development of digital skills becomes a critical factor in mitigating the potential negative effects of artificial intelligence. The emphasis on continuous learning and skill development aligns with modern labor market theories, which stress the importance of human capital in an increasingly technology-driven world.

In order to enhance the quality and depth of future research, it would be beneficial to adopt a mixed-method approach. Combining quantitative data with qualitative methods such as interviews or focus groups would allow researchers to explore not only what people think, but also why they think that way. This would provide a more comprehensive understanding of attitudes toward artificial intelligence and its impact on employment. Additionally, future studies should aim to include a more diverse and representative sample, covering different age groups, professions, and regions.

In conclusion, while this study provides valuable initial insights into the perceptions of young people in Uzbekistan regarding artificial intelligence and employment, its findings should be interpreted as exploratory rather than definitive. The results highlight both concern and optimism, reflecting the complex and often contradictory nature of public attitudes toward technological change. At the same time, the study underscores the importance of education,

adaptability, and informed awareness in addressing the challenges posed by artificial intelligence in the labor market.

Conclusion

The results of theoretical analysis and research show that artificial intelligence is not a factor that completely destroys the labor market, but a transformational force that fundamentally changes it and takes a new form. Academic sources, including research by scientists such as Shen and Zhang 2024, confirm that AI technologies increase labor productivity, improve production efficiency, and create new economic opportunities in the long term. This indicates that technologies are developing mainly in a positive direction. At the same time, the results of a survey conducted among the youth and students of Uzbekistan revealed a certain degree of uncertainty and ambiguity in society regarding this process. On the one hand, a significant portion of respondents 64% expressed concern about the reduction of jobs as a result of the development of artificial intelligence, especially in the industrial, service, and administrative sectors. This means that there are concerns that automation processes may reduce the demand for human labor. On the other hand, the majority of respondents 66% indicated that they are ready to adapt to new technologies, master modern professions, and learn additional skills. This situation indicates the presence of adaptability to changes and a desire for development among young people. The research results indicate that the future of the labor market directly depends not only on the level of technological development, but also on the quality of human capital, the effectiveness of the education system, and society's ability to adapt to changes. In particular, skills such as digital literacy, analytical thinking, creativity, and readiness for continuous learning are becoming the main factors determining competitiveness in the future labor market.

In conclusion, it is possible that the era of artificial intelligence will bring not only certain risks and difficulties to the labor market, but also new opportunities at an unprecedented level. To properly manage this period of change, it is very important to increase people's knowledge, develop digital skills, and adapt the education system to the times.

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