THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE LABOR MARKET AND YOUTH EMPLOYMENT

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Abstract. Artificial intelligence (AI) is now part of everyday economic life, and it is changing how people find, keep and lose jobs. This paper studies how AI changes the labor market in general and youth employment in particular, with a case study of Uzbekistan. It uses a detailed method based on academic research, international reports and Uzbek sources. The paper finds that AI does not simply destroy jobs. Instead, it moves work away from routine tasks and toward digital, analytical and human skills. For Uzbekistan, where most people are young, this is both a chance and a risk. The paper concludes by proposing better education, workforce retraining, and stronger links between universities and companies.

Keywords: Artificial Intelligence, Labor Market, Youth Employment, Automation, Digital Skills, Uzbekistan

1. Introduction

1.1. Background of the Study

AI has developed much faster than most economists expected. At first, it only automated simple tasks in factories. Today, generative AI tools can write text, write computer code, analyze data and talk to customers. The World Economic Forum (WEF) reports that 86% of employers expect AI and other information-processing technologies to change their business by 2030.[1] These changes are not limited to rich countries. Cloud tools and online work platforms mean that workers and companies in developing countries, including Uzbekistan, face the same technological wave, often with weaker social protection and fewer training options.

This survey evidence is broad in scope: the WEF gathered perspectives from more than 1,000 leading employers, together representing over 14 million workers across 22 industry clusters and 55 economies.[1] Beyond artificial intelligence, employers also flag robotics and automation (58% of respondents) and new energy technologies (41%) as forces that will reshape their business by 2030, showing that generative AI is only the most visible part of a broader wave of technological change reaching both advanced and developing economies alike.[1]

1.2. Problem Statement

AI has two sides. On one side, it can do tasks that people used to do, such as data entry, basic customer support and translation. On the other side, it creates new kinds of work, such as AI oversight, data annotation and jobs that connect AI tools with business processes. The WEF expects that, because of technology, the green transition and economic and demographic

[1] World Economic Forum. (2025, January 7). *The Future of Jobs Report 2025 – Key Findings*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/

changes, 170 million new jobs will be created and 92 million jobs will be lost by 2030, a net gain of 78 million jobs. In total, this change equals about 22% of today's jobs.[1] The main risk is not that AI destroys all work. The risk is that the lost jobs and the new jobs need different skills, are in different sectors, and may not be open to the same people. Young people are especially exposed because they have less experience, yet they are expected to already have strong digital skills.

Part of this net job growth comes directly from digital expansion itself: broadening digital access alone is projected to create about 19 million new jobs by 2030 while stopping roughly 9 million, making it the largest single driver of job creation among the macrotrends identified by the WEF, ahead of the green transition and demographic change.[1]

1.3. Objective and Research Questions

This paper aims to show how AI affects the labor market and youth employment. It asks four questions: (1) How is AI changing labor demand? (2) What opportunities and risks does AI create for young workers? (3) Which skills are becoming more important? (4) What can help young people, especially in Uzbekistan, to adapt?

2. Literature Review

2.1. Technology and Jobs

Economists have studied the link between technology and jobs for a long time. David Autor explains that automation replaces some tasks, but it also complements human work, raises output and increases the demand for labor.[2] For this reason, automation has not wiped out most jobs over the decades and centuries.[2] He also notes that new technology changes which jobs are available and how much they pay.[2]

Autor monitors this pattern back further than the recent AI wave. He remembers that concerns about machines destroying jobs are not new: in the 1960s, a United States national commission on automation and economic progress was created to address fears that rising productivity would outrun the demand for labor, and it concluded that technological change determines which places, industries and workers are affected by unemployment, while the overall level of demand for goods and services remains the main factor shaping how many people are affected and for how long.[2] He identifies three forces that keep this pattern in place today: workers whose tasks complement automation tend to benefit through higher productivity and earnings; the elasticity of labor supply can limit wage gains when many workers can perform similar complementary tasks; and falling prices from automation tend to expand consumer demand, which in turn increases the demand for labor in related activities. Together, these mechanisms explain why, in his view, commentators often overstate how much machines substitute for human labor and understate the complementary effects that raise both productivity and employment.[2]

2.2. Which Jobs Are Most at Risk

The WEF expects the largest fall in the number of jobs among clerical and secretarial workers, and the fastest decline for postal service clerks, bank tellers and data entry clerks.[3] These jobs are mostly built on routine, rule-based tasks that software can copy easily. Jobs that need judgment, creativity or personal contact are usually safer, at least for now.

Beyond postal clerks, bank tellers and data entry clerks, employers expect Cashiers and Ticket Clerks and Administrative Assistants and Executive Secretaries to record the largest declines in absolute numbers, since these clerical occupations exist in very large numbers

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[2] Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives, 29*, 3–30. https://www.aeaweb.org/articles?id=10.1257/jep.29.3.3

[3] World Economic Forum. (2025, January 7). *The Future of Jobs Report 2025 – Key Findings*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/

across the global economy.[3] In relative terms, other occupations projected to disappear quickly include telemarketers, door-to-door sales workers, graphic designers, transportation attendants and conductors, legal secretaries, printing workers, and accounting, bookkeeping and payroll clerks.[3] The common feature of nearly all these roles is that they are built on routine, predictable and rule-based tasks, which software and AI tools can now perform at lower cost, while occupations that require negotiation, improvisation or face-to-face trust remain comparatively difficult to automate.

2.3. Skills and Human Capital

Most researchers agree that skills decide who gains from new technology. Workers who can combine technology with their own skills benefit, while others may fall behind. For young people, this is a double challenge: they can learn digital skills quickly, but they often lack the practical experience that employers want.

3. Research Methodology

This paper uses a detailed method instead of a statistical model, because firm-level data on AI use in Uzbekistan is limited. It uses three types of sources: (1) academic research on automation, (2) international reports and data, mainly the WEF Future of Jobs Report 2025 and the World Bank, and (3) Uzbek sources such as IT Park Uzbekistan. The global findings are then compared with the situation in Uzbekistan to see where the two agree and where local conditions, such as the young population, make the results different.

The two main international sources used here differ in scope but complement each other well: the WEF Future of Jobs Report 2025 is based on a global employer survey covering more than 1,000 companies, 14 million workers, 22 industry clusters and 55 economies, which makes it a useful benchmark for how businesses expect AI and other macrotrends to reshape jobs and skills worldwide.[1] The World Bank's assessment of youth employment in Uzbekistan, by contrast, is a country-specific study built on national labor force and enterprise survey data covering a youth population of roughly 15 million people under the age of 24 and 18 million under the age of 29, which allows the global trends identified by the WEF to be checked against Uzbekistan's own demographic and labor market conditions.[5]

4. Results: AI and the Global Labor Market

4.1. The Scale of Change

Global data show that the labor market is changing quickly. On average, workers can expect that 39% of their existing skills will change or become outdated between 2025 and 2030.[3] This means that even people who keep their job title will do different tasks. If the world’s workforce were 100 people, 59 would need training by 2030. Of these, 29 could be upskilled in their current jobs and 19 could be trained and moved to other roles in the same company, but 11 would probably not receive the training they need.[3]

This 39% figure is, in fact, lower than in previous editions of the same survey: the WEF measure of skill instability stood at 57% in 2020, at the height of pandemic-related disruption, and had already fallen to 44% by the 2023 edition before reaching 39% in the 2025 report.[3] This trend suggests that, while the pace of skill change remains historically high, it may be gradually stabilizing as both employers and workers adjust their training strategies to a labor market that is being reshaped by AI.

4.2. Jobs That Grow and Jobs That Shrink

Technology-related jobs are the fastest-growing in percentage terms, including big data specialists, fintech engineers, AI and machine learning specialists, and software developers. In absolute numbers, however, the biggest growth is expected in frontline jobs such as farmworkers, delivery drivers, construction workers and salespersons.[3] So the future labor market is not only about technology. It also needs many practical, people-facing workers.

Among technology roles, software and applications developers and security management specialists join big data specialists, fintech engineers and AI and machine learning specialists among the fastest-growing occupations, reflecting both the spread of digital services and growing concern about cybersecurity.[3] Green and energy-transition roles are also prominent on this list, including autonomous and electric vehicle specialists, environmental engineers and renewable energy engineers, which shows that the labor market of the next five years will be shaped by the green transition almost as much as by AI.[3]

4.3. How Employers Plan to React

Employers are already preparing for AI. The WEF survey shows that half of employers plan to change their business direction because of AI, two-thirds plan to hire people with specific AI skills, and 40% expect to reduce staff where AI can automate tasks.[4] At the same time, 85% of employers plan to prioritize retraining their workforce, and 70% expect to hire people with new skills.[4] This suggests that many employers plan to respond to skill gaps by training and hiring, not only by cutting jobs.

Demographic and economic forces add further complexity to these workforce strategies. A slower pace of global economic growth is, on its own, projected to displace about 1.6 million jobs worldwide, which increases employer demand for resilience, flexibility and creative-thinking skills among remaining staff.[4] At the same time, ageing populations in higher-income economies are increasing demand for healthcare and education roles, while younger and still-growing workforces in lower-income economies, including much of Central Asia, create the opposite demographic pressure: a need to generate enough new jobs for a rapidly expanding working-age population.[4]

4.4. Changing Skill Requirements

AI and big data are the fastest-growing skills, followed closely by networks and cybersecurity and by technology literacy. Creative thinking, resilience, flexibility and curiosity are also expected to become more important.[4] Analytical thinking remains the skill that employers value most, with seven out of ten companies seeing it as essential.[4] In contrast, manual dexterity, endurance and precision show clear declines in demand.[4] The labor market therefore rewards people who combine digital skills with human skills that are hard to automate.

Environmental management has entered the WEF's list of top skills for the first time in this edition, reflecting the growing weight employers place on climate-related knowledges alongside digital ones.[4] This shift is linked to the green transition being ranked the third most transformative trend overall, behind broadening digital access and AI and information-processing technologies, and it signals that future workers, including those in Uzbekistan's growing outsourcing and technology sectors, will increasingly need to combine digital literacy with an understanding of sustainability practices to remain competitive.

4.5. Impact on Young Workers

Young workers stand at the center of this change, and it has two sides. They usually have better digital skills than older workers, so they can learn AI-related skills quickly. However, entry-level jobs, which are the first step in a career, often include routine tasks such as basic research, drafting and first-pass data analysis. These are tasks that AI can do well. If such jobs shrink faster than universities can adapt, young people may find it harder to gain the first work experience they need.

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[4] World Economic Forum. (2025, January 7). *The Future of Jobs Report 2025 – Key Findings*. https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/

5. AI and Youth Employment in Uzbekistan

5.1. A Young Population

Uzbekistan is a young country: people below the age of 29 make up about 58% of the population. The World Bank expects that the country's labor force will reach its highest level compared with its population around 2045.[5] This is a big opportunity, but it also means many young people need jobs. The World Bank reports that almost one in four young people aged 16–24 (24%) were not in education, employment or training in 2017.[5] Youth unemployment is also more than twice the national rate: in 2025, it was about 11% for ages 15–24, compared with about 4.6% for the whole labor force.[6]

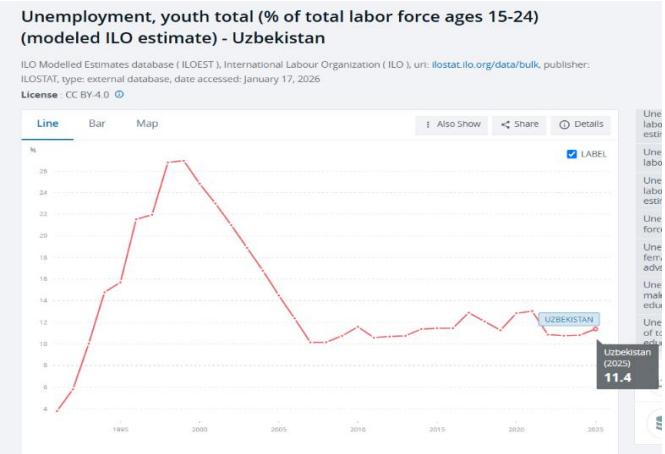

Figure 1. Youth unemployment in Uzbekistan, ages 15–24 (%)[6]

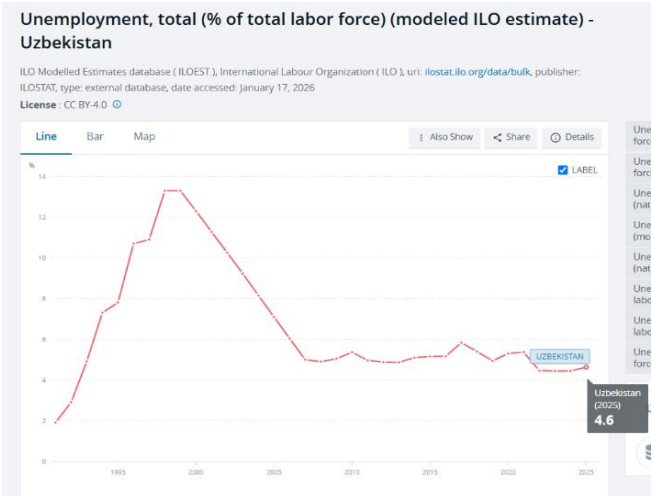

Figure 2. Unemployment rate in Uzbekistan (% of total labor force)[6]

These national averages sit within a much larger demographic base: the World Bank's 2021 assessment counted about 15 million young people up to the age of 24 and 18 million up to the age of 29, making Uzbekistan one of the youngest societies in the region by population share.[5] Looking at the wider 16–29 age group, the share of young people who are neither working nor studying nor in training rises to about 26.4%, somewhat higher than the 24%

[5] Honorati, M., & Marguerie, A. (2021). *Youth employment in Uzbekistan: Opportunities and challenges*. World Bank. https://documents1.worldbank.org/curated/en/666311634704762319/pdf/Youth-Employment-in-Uzbekistan-Opportunities-and-Challenges.pdf

[6] World Bank. (2026). *World Development Indicators* (ILO modeled estimates).
Youth unemployment (ages 15–24): https://data.worldbank.org/indicator/SL.UEM.1524.ZS?locations=UZ
Total unemployment: https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=UZ

recorded for the narrower 16–24 group, which suggests that the transition into stable employment remains difficult well beyond the first years after leaving school.[5]

5.2. Opportunities in the IT Sector

The IT sector is one of the most promising areas for young people. From January to May 2025, IT Park Uzbekistan welcomed 636 new member companies, of which 369 were registered in Tashkent and 267 in the regions.[7] Of these new members, 284 plan to deliver services abroad, and 117 of these exporters are foreign companies.[7] Exporters based in Tashkent aim to earn over $46 million, and regional companies aim to earn more than $31 million.[7] Because this work can be done online, young people outside the capital can also find digital jobs without leaving their region.

IT Park also reports that many service companies are moving into more complex, higher-value work, such as business analytics and the preparation of technical documentation.[7] This shows that companies need workers with real analytical and digital skills, not only basic computer knowledge.

A closer look at the new export-oriented members shows where this demand is concentrated: 142 of them, 72 with foreign capital, work in IT services; 87, of which 19 are foreign, provide business process outsourcing; 33, including 16 foreign companies, offer other service-based solutions; and 22, ten of them foreign, are active in game development and the creative industries.[7] International investor interest has also grown quickly, with 164 new foreign-capital companies joining IT Park since the start of the year, drawn from 61 countries. Growth has been particularly strong among companies from Japan, whose numbers have doubled, alongside increases of 71% from China, 133% from Turkey and 67% from Azerbaijan, underlining that Uzbekistan's youth labor pool is increasingly connected to international, not only domestic, demand for digital skills.[7]

5.3. Skills Gap and Graduate Employment

Despite these chances, many young people struggle to find work. The World Bank reports that about 535,000 young people finished vocational colleges or universities in 2020 and looked for a first job, while the economy created only about 243,000 new jobs a year in 2017–2019, well below the half a million people who enter the labor market every year.[8] The World Bank also finds that employers mainly value work experience, because post-secondary diplomas do not prove that a young person has the technical skills needed for the job.[8] This shows that the problem is not only the number of jobs, but also the match between what young people learn and what employers need, including digital skills, English and practical use of AI tools. The World Bank links youth unemployment and discouragement to a lack of experience and a mismatch between skills and job needs.[8]

The World Bank's assessment also highlights how this mismatch plays out in practice. Many young Uzbeks who do find work are hired informally, without a formal employment contract or an official “employment record book,” which leaves them without job security or access to related social benefits.[8] Young workers frequently report that wages fall short of their expectations, and the scarcity of jobs and weak labor demand are especially pronounced in rural areas, where opportunities outside agriculture remain limited. These conditions help explain why many young people either remain in low-productivity informal work or withdraw from the labor market altogether rather than continuing to search for a suitable formal job.[8]

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[7] IT Park Uzbekistan. (2025, June 4). *Uzbekistan strengthens position as IT hub: Over 280 export-oriented companies join IT Park in five months*. https://www.it-park.uz/en/itpark/news/uzbekistan-strengthens-position-as-it-hub-over-280-export-oriented-companies-join-it-park-in-five-months

[8] Honorati, M., & Marguerie, A. (2021). *Youth employment in Uzbekistan: Opportunities and challenges*. World Bank. https://documents1.worldbank.org/curated/en/666311634704762319/pdf/Youth-Employment-in-Uzbekistan-Opportunities-and-Challenges.pdf

5.4. Role of Universities and Training

Universities and training centers are therefore the main way to turn a large young population into a workforce that can benefit from AI instead of being replaced by it. Three steps seem especially important: closer links between university programs and the needs of IT and outsourcing companies, more English and AI-literacy training, and stronger cooperation between universities and employers.

6. Discussion

Together, the global and Uzbek evidence points to one main idea: AI works more like a partner to human labor than a full replacement, although it does take over some tasks. This agrees with the literature in Section 2.1 and with the employer survey in Section 4.3, where many employers plan to train and hire people as well as to reduce staff.

For Uzbekistan, the key question is not whether AI will affect young workers, because it already does through the growth of IT and outsourcing. The key question is whether education and training can adapt fast enough for young people to take the higher-value jobs. The high share of young people who are not in work, education or training shows that this adaptation is not yet complete. At the same time, the growth of IT Park shows that digital exports are a real opportunity, if young people have the right skills.

7. Conclusion

AI is changing labor markets through a mix of task change and job creation. The evidence in this paper suggests that AI mainly moves work from routine tasks to digital, analytical and human skills, instead of destroying jobs in general. In Uzbekistan, this is visible in the fast growth of IT and outsourcing companies, which opens a real path for young workers. At the same time, many young people still cannot find jobs, which shows that education and training have not yet fully adapted. The most useful steps are earlier digital-skills education, targeted reskilling, closer university–employer cooperation and support for young entrepreneurs. The main limit of this paper is that it only describes the data instead of analyzing individual companies; future research with firm-level data on AI adoption in Uzbekistan would give more precise results.

8. SWOT Analysis: AI and Youth Employment in Uzbekistan

Strengths • Large, young population • Fast-growing IT Park ecosystem • Rising interest from foreign IT companies	**Weaknesses** • Many young people not in work, education or training • Youth unemployment about twice the national average • Limited data on AI use in firms
Opportunities • Online IT services open global markets to youth in the regions • AI-enabled entrepreneurship and freelancing	**Threats** • Entry-level routine jobs are easy to automate • Gap between digitally skilled and unskilled youth may grow

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4. World Bank. (2026). World Development Indicators (ILO modeled estimates). Youth unemployment (ages 15–24): https://data.worldbank.org/indicator/SL.UEM.1524.ZS?locations=UZ Total unemployment: https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=UZ
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