# The role of digitalization and remote work in expanding employment opportunities for Kazakhstan's youth

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Abstract: The rise of digital platforms and technologies has reshaped the labor market, creating opportunities for remote work and online-based employment while emphasizing the need for digital skills. It's important to notice the transformative impact of digitalization on employment in Kazakhstan, while focusing on its implications for youth employment.The topic highlights the vulnerability of youth in the labor market, noting disparities in unemployment rates, income levels, and alignment between educational outcomes and industry needs. Gender inequalities, though smaller compared to global averages, persist, particularly in access to digital careers. Addressing these challenges requires targeted policies that promote digital literacyand inclusive employment opportunities, especially for marginalized groups such as rural youth and women.

Keywords: digital employment, youth employment, digitalization, remote work, digital skills, digital economy.

In an increasingly interconnected world driven by rapid technological advancements, the nature of work is undergoing significant transformations in Kazakhstan. The rise of digital platforms and technologies has ushered in a new era of digital employment, offering both opportunities and challenges for young people.A central focus of employment policy going forward will be on harnessing the potential of digitalization to contribute to employment generation and improve the quality and productivity of employment. The use and application of digital technologies in employment has become commonplace. The trend towards digitalization has shifted not only the composition and tasks of most jobs, i.e., increasing the importance of digital skills, but it has also created new employment opportunities, including those where the location of the tasks performed is entirely disconnected from the location of the goods or service being provided. Kazakhstan, as a region that focuses on expanding opportunities for labour and employment, should recognize the crucial need to understand and navigate the complexities of digital employment. The digital economy has the potential to create new forms of work, enhance productivity and foster inclusive growth. Targeted efforts towards youth employment need to emphasize the importance of promoting decent work and fostering a safe and inclusive work environment in the digital realm. By adhering to these principles, Kazakhstan can harness the potential of digital technologies to create an inclusive, sustainable and resilient world of work.

As digital infrastructure evolves, it has enabled the expansion of remote work opportunities and underscored the importance of equipping the youth with digital skills to meet market demands.To harness the benefits of digitalization and to address digital divides, it is necessary to assess the foundations of the digital economy.The foundations of the digital economy can be presented along three broad categories (Table 1): 1) digital infrastructure, which in this context refers to the physical provisions of the digital economy, including electricity provision, availability of broadband etc. and also the quality of these provisions; 2) access to digital tools and services, even when a degree of digital infrastructure is in place - this can be impacted by physical obstacles (e.g. location), cost, or other factors; and finally, 3) skills for the digital economy.Each of these plays a fundamental – and interconnected – role in supporting digital economic activity and decent employment opportunities. For instance, having broadband connectivity will be of limited use if individuals do not have access to computers, or relevant education or skills to leverage those tools.

Table 1

Foundations of digital economy for digital employment opportunities

| Digital infrastructure | Access to digital tools and digital services | Skills for the digital economy |
|---|---|---|
| Basic infrastructure:<br>• Sufficient and reliable electricity<br>Physical digital infrastructure:<br>• Broadband connectivity<br>• Next generation networks<br>Quality of digital infrastructure:<br>• Broadband / bandwidth<br>• Cybersecurity and digital security critical infrastructure<br>• Digital infrastructure maintenance systems | • Access to connected devices (computers, and mobile phones), software and applications<br>• E-banking and digital financial services<br>• Affordability of connectivity<br>• Access and affordability of digital tool maintenance/ repair | • Basic skills<br>• Early (K-12) digital education<br>• Digital literacy<br>• Secondary school completion<br>• Awareness of digital tool relevance/usefulness<br>• Tertiary education and digital-related education |
| Note – source [1] | | |

The term “youth” is typically considered to encompass the age group of 15 to 24 years old, with “adults” considered to be those aged 25 and over. Labour market results for young people aged 15 to 24 are often examined next to those of adults aged 25 and over for comparative purposes. Indicators consistently show that young people fare worse than adults in their labour market prospects, especially when measured in terms of their respective unemployment rates.Youth are more vulnerable than adults in difficult economic times. They are likely to have less work experience than adults. Assuming that employers seek workers with past experience, the youth who is entering the labour force for the first time will be at a disadvantage and have a harder time finding employment than an adult with a longer history of work experience.The distribution of young workers across economic sectors varies across the region as do the changes that have occurred in this distribution during the new millennium. One commonality is that the services sector in 2023 was the main source of jobs for young people. Its share in total youth employment has seen a sizable increase since the start of the millennium. The share of youth employment in services in 2023 ranged from 53 per cent of total youth employment in Central and Western Asia.

Kazakhstan has made significant changes towards digitalizing its economy. Mainly, investments in broadband infrastructure and e-governance platforms have enhanced connectivity and service delivery in all regions of the country. One of the greatest examples is the "Digital Kazakhstan" program, launched in 2017, that focuses on 5 key areas: digitizing industries, developing IT ecosystems, promoting e-governance, enhancing digital skills, and creating a digital society. These initiatives aim to foster innovation while also addressing the structural challenges of transitioning to a knowledge-based economy.However, challenges persist, such as uneven internet access in rural areas and a lack of digital literacy among certain demographics. Encouraging regional collaboration and investments in digital infrastructure could further enhance remote work opportunities across Central Asia.Digital skills training programs, such as coding bootcamps and online certifications, have become essential for bridging the gap between education and employment. Initiatives like the Astana Hub’s IT bootcamps and partnerships with international tech companies have played a leading role in equipping young people with the skills needed to navigatethroughthe digital economy.

Kazakhstan's youth unemployment rate has highlighted the urgent need for labor market reforms.Despite the fact that youth unemployment in Kazakhstan is at a relatively low level, a large number of young people face certain barriers. The problem of the labor market in Kazakhstan is related both to the imbalance of labor resources and jobs, and their quality. The youth segment, as well as the general labor market in Kazakhstan, remains rather unbalanced.The areas of employment

of young professionals are closely related to the low level of income and labor productivity.The continuing gap between the professional orientation of young people and the needs of enterprises in the workforce is becoming one of the barriers to the employment of young people in the labor market. Further strengthening of negative trends in the youth labor market creates risks of growth in external migration and the informal employment sector of young people

Table 2

Unemployed population of Kazakhstan at the age of 16-24

| Unemployed population by gender and age (Data for 3rd quarter of 2024) | | | |
|---|---|---|---|
| | Both genders | Men | Women |
| Unemployed population, total | 448 552 | 213 234 | 235 318 |
| At the age, years | | | |
| 16-24 | 39 347 | 17 196 | 22 151 |
| Note – complied by the author according to the information from the Bureau of National Statistics. Source [4] | | | |

For several decades now, technological change has played a significant role in driving changes in the size and composition of workforces in Kazakhstan and around the globe. Considerable attention has been paid to the potential impact of technological advancements on employment levels, creating new opportunities in certain areas and sectors, while leading to employment losses in others.The focus, especially in skills development for labour market transitionsshould turn towards maximizing the potential of the digitalization of lifelong learning systems and programmes in order to increase the outreach and inclusiveness of these programmes, as well as to improve their efficiency and their quality. Compared to men, women could be marginally better placed to capture potential job growth brought about by digitalization because of expected robust job growth in sectors where they are well represented, particularly healthcare and social care, manufacturing, and the retail and wholesale trade. However, women are less represented in sectors that require high digital competencies, e.g., the IT sector, which is further exacerbated by occupational segregation and gender norms. Therefore, more targeted efforts are needed to ensure inclusivity, particularly for young women and rural populations.

Table 3

Youth employment-to-population ratio by sex, Central and Western Asiaregions and worldwide, 2019–2024 (percentage)

| Region/subregion/country income group | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| Total | | | | | | |
| Central and Western Asia | 33.8 | 31.4 | 32.8 | 34.5 | 34.9 | 34.8 |
| World | 35.2 | 33.2 | 34.1 | 34.7 | 35.0 | 34.6 |
| Women | | | | | | |
| Central and Western Asia | 26.1 | 23.8 | 24.8 | 26.0 | 26.4 | 26.4 |
| World | 28.3 | 26.3 | 27.1 | 27.6 | 28.2 | 27.9 |
| Note – source [7] | | | | | | |

Gender disparities in youth labour market outcomes in the region are relatively small when seen against global averages. But in Central and Western Asia, sizable gender gaps reveal the continuing (though slightly improved) disadvantages of young women.Creating jobs for young women and men entering the labour market every year is a critical component in the path towards economic growth, fairer societies and stronger democracies.Providing opportunities for young people to access decent jobs means more than just earning a living. It means getting youth into secure, decent and productive work in which an adequate income is generated, rights are protected, and appropriate social protection is provided. It is these quality components of the job that bring the confidence that enables young people to transition to the next steps of adulthood.

The latest wave of technological change has meant that many jobs and tasks can often be performed in geographic locations that are disconnected from where the services are being provided. This has given rise – exacerbated by the pandemic – to different types of work arrangements including remote work, teleworking, working at home and home-based work. This is particularly the case for jobs related to online web-based platforms. In this way, digital employment opens possibilities where the location of the tasks performed is entirely disconnected from the location of the goods or service being provided. This is particularly relevant in countries like Kazakhstan, where decent work deficits are typically high and can, under certain conditions, generate decent work opportunities including for young people and persons with disabilities. To boost economic growth in countries, the aim of national development strategies is typically to promote the development of higher value-added (and more productive) industries and services, and in so doing, promote job creation. But without a doubt, digitalization is already drivingrapid changes in the scope of occupations that are available to a young person now compared to 20 years ago.

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## Understanding AI's role in reshaping labour markets

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Abstract: The rapid advancement of Artificial Intelligence (AI) impacts significant transformations across societies, economies, and the world of work. While AI holds immense potential to enhance productivity through task automation, personalization, and quality control, it also raises critical questions about its impact on labor markets. This paper explores the nuanced effects of AI on employment, emphasizing its dual potential to disrupt and augment human labor. Drawing on task-based frameworks and microdata, the study identifies varied outcomes across occupations, highlighting that task automation does not necessarily imply job losses but may complement human roles, fostering efficiency and productivity. However, the integration of AI technologies into workplaces raises concerns about job quality, worker autonomy, and employment stability, particularly in sectors driven by algorithmic management. Policymakers must address these challenges by fostering skill development, supporting workforce transitions, and ensuring equitable