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ВЕСТНИК

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В 2016 году для развития и улучшения качества жизни казахстанцев был создан частный Благотворительный фонд «Халык». За годы своей деятельности на реализацию благотворительных проектов в областях образования и науки, социальной защиты, культуры, здравоохранения и спорта, Фонд выделил более 45 миллиардов тенге.

Особое внимание Благотворительный фонд «Халык» уделяет образовательным программам, считая это направление одним из ключевых в своей деятельности. Оказывая поддержку отечественному образованию, Фонд вносит свой посильный вклад в развитие качественного образования в Казахстане. Тем самым способствуя росту числа людей, способных менять жизнь в стране к лучшему – профессионалов в различных сферах, потенциальных лидеров и «великих умов». Одной из значимых инициатив фонда «Халык» в образовательной сфере стал проект *Ozgeris powered by Halyk Fund* – первый в стране бизнес-инкубатор для учащихся 9-11 классов, который помогает развивать необходимые в современном мире предпринимательские навыки. Так, на содействие малому бизнесу школьников было выделено более 200 грантов. Для поддержки талантливых и мотивированных детей Фонд неоднократно выделял гранты на обучение в Международной школе «Мирас» и в *Astana IT University*, а также помог казахстанским школьникам принять участие в престижном конкурсе «*USTEM Robotics*» в США. Авторские работы в рамках проекта «Тәлімгер», которому Фонд оказал поддержку, легли в основу учебной программы, учебников и учебно-методических книг по предмету «Основы предпринимательства и бизнеса», преподаваемого в 10-11 классах казахстанских школ и колледжей.

Помимо помощи школьникам, учащимся колледжей и студентам Фонд считает важным внести свой вклад в повышение квалификации педагогов, совершенствование их знаний и навыков, поскольку именно они являются проводниками знаний будущих поколений казахстанцев. При поддержке Фонда «Халык» в южной столице был организован ежегодный городской конкурс педагогов «*Almaty Digital Ustaz*».

Важной инициативой стал реализуемый проект по обучению основам финансовой грамотности преподавателей из восьми областей Казахстана, что должно оказать существенное влияние на воспитание финансовой

грамотности и предпринимательского мышления у нового поколения граждан страны.

Необходимую помощь Фонд «Халык» оказывает и тем, кто особенно остро в ней нуждается. В рамках социальной защиты населения активно проводится работа по поддержке детей, оставшихся без родителей, детей и взрослых из социально уязвимых слоев населения, людей с ограниченными возможностями, а также обеспечению нуждающихся социальным жильем, строительству социально важных объектов, таких как детские сады, детские площадки и физкультурно-оздоровительные комплексы.

В копилку добрых дел Фонда «Халык» можно добавить оказание помощи детскому спорту, куда относится поддержка в развитии детского футбола и карате в нашей стране. Жизненно важную помощь Благотворительный фонд «Халык» оказал нашим соотечественникам во время недавней пандемии COVID-19. Тогда, в разгар тяжелой борьбы с коронавирусной инфекцией Фонд выделил свыше 11 миллиардов тенге на приобретение необходимого медицинского оборудования и дорогостоящих медицинских препаратов, автомобилей скорой медицинской помощи и средств защиты, адресную материальную помощь социально уязвимым слоям населения и денежные выплаты медицинским работникам.

В 2023 году наряду с другими проектами, нацеленными на повышение благосостояния казахстанских граждан Фонд решил уделить особое внимание науке, поскольку она является частью общественной культуры, а уровень ее развития определяет уровень развития государства.

Поддержка Фондом выпуска журналов Национальной Академии наук Республики Казахстан, которые входят в международные фонды Scopus и WoS и в которых публикуются статьи отечественных ученых, докторантов и магистрантов, а также научных сотрудников высших учебных заведений и научно-исследовательских институтов нашей страны является не менее значимым вкладом Фонда в развитие казахстанского общества.

С уважением, Благотворительный Фонд «Халык»!

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TRENDS IN THE DEVELOPMENT OF THE LABOR MARKET IN THE CONTEXT OF DIGITALIZATION OF THE ECONOMY

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Abstract. In the context of digitalization and post-pandemic changes, traditional methods of assessing and regulating the labor market are losing their effectiveness, necessitating the analysis of current trends and the development of flexible, innovative approaches to ensure sustainable economic growth and social stability. This article examines the main changes taking place in the field of employment in the context of digital transformation. In the context of the digitalization of the economy, the growing role of distance work and freelancing is highlighted, which leads to changes in the required skills and specializations in the labor market. The authors of the article analyze the advantages and challenges facing the labor market in the process of adapting to these new conditions, and propose strategies for effectively managing these changes and maximizing the benefits that the digital economy can offer. The current trends in the development of the labor market in the context of the digitalization of the economy in the framework of this study were analyzed in the context of regional characteristics. The article discusses changes in the labor market by region, identifies the main trends and challenges faced by various regions of the country. This underlines the need for an individual approach to each region in the formation of employment strategies aimed at creating favorable conditions for the sustainable development of all regions of the country. Both the potential benefits and risks associated with the digital transformation of the labor market are highlighted,

and strategies for sustainable development of the labor market in a digital economy are proposed. At the same time, it is noted that in the context of the rapid development of information technologies and the growth of remote employment, traditional approaches to assessing the state of the labor market are becoming less effective. The authors of the article emphasize that official statistics often do not reflect the real situation on the labor market, especially in the context of the rapidly developing digitalization of the economy.

Keywords: labor market, digitalization of the economy, region, employment, regional differences, benefits, risks, digital inequality

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Аннотация. Цифрландыру және пандемиядан кейінгі өзгерістер жағдайында еңбек нарығын бағалау мен реттеудің дәстүрлі әдістері тиімділігін жоғалтады, бұл ағымдағы тенденцияларды талдау және тұрақты экономикалық өсу мен әлеуметтік тұрақтылықты қамтамасыз ету үшін икемді, инновациялық тәсілдерді әзірлеу қажеттілігін тудырады. Бұл мақалада цифрлық трансформация жағдайында жұмыспен қамту саласында болып жатқан негізгі өзгерістер қарастырылған. Экономиканы цифрландыру контекстінде қашықтықтан жұмыс істеу мен фрилансингтің өсіп келе жатқан рөлі ерекшеленеді, бұл еңбек нарығында қажетті дағдылар мен мамандандырулардың өзгеруіне әкеледі. Мақала авторлары осы жаңа жағдайларға бейімделу процесінде еңбек нарығының алдында тұрған артықшылықтар мен қиындықтарды талдайды және осы өзгерістерді тиімді басқару және цифрлық экономика ұсынатын артықшылықтарды барынша арттыру стратегияларын

ұсынады. Осы зерттеу аясында экономиканы цифрландыру жағдайында еңбек нарығын дамытудың қазіргі тенденциялары аймақтық ерекшеліктер контекстінде талданды. Мақалада еңбек нарығындағы өңірлер бөлінісіндегі өзгерістер талқыланады, еліміздің әртүрлі өңірлері тап болатын негізгі үрдістер мен сын-қатерлер анықталады. Бұл еліміздің барлық өңірлерінің тұрақты дамуы үшін қолайлы жағдайлар жасауға бағытталған Жұмыспен қамту стратегияларын қалыптастыру кезінде әрбір өңірге жеке көзқарас қажеттігін көрсетеді. Еңбек нарығының цифрлық трансформациясымен байланысты әлеуетті пайдалар да, тәуекелдер де қамтылады, сондай-ақ Цифрлық экономика жағдайында еңбек нарығының тұрақты дамуы үшін стратегиялар ұсынылады. Бұл ретте ақпараттық технологиялардың қарқынды дамуы және қашықтан Жұмыспен қамтудың өсуі жағдайында еңбек нарығының жай-күйін бағалаудың дәстүрлі тәсілдерінің тиімділігі төмендейтіні атап өтілді. Мақала авторлары ресми статистика көбінесе еңбек нарығындағы нақты жағдайды, әсіресе экономиканың қарқынды дамып келе жатқан цифрландыру жағдайында көрсетпейтінін атап көрсетеді.

Түйін сөздер: Еңбек нарығы, экономиканы цифрландыру, аймақ, жұмыспен қамту, аймақтық айырмашылықтар, пайда, тәуекелдер, цифрлық теңсіздік, тұрақты даму

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ТЕНДЕНЦИИ РАЗВИТИЯ РЫНКА ТРУДА В УСЛОВИЯХ ЦИФРОВИЗАЦИИ ЭКОНОМИКИ

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Аннотация. В условиях цифровизации и постпандемийных изменений традиционные методы оценки и регулирования рынка труда утрачивают свою эффективность, что обуславливает необходимость анализа текущих тенденций и разработки гибких, инновационных подходов для обеспечения устойчивого экономического роста и социальной стабильности. В данной статье рассмотрены

основные изменения, происходящие в сфере занятости в условиях цифровой трансформации. В контексте цифровизации экономики выделяется растущая роль дистанционной работы и фриланса, что ведет к изменениям в требуемых навыках и специализациях на рынке труда. Авторы статьи анализируют преимущества и вызовы, стоящие перед рынком труда в процессе адаптации к этим новым условиям, и предлагают стратегии для эффективного управления этими изменениями и максимизации преимуществ, которые может предложить цифровая экономика. Современные тенденции развития рынка труда в условиях цифровизации экономики в рамках данного исследования подверглись анализу в контексте региональных особенностей. В статье обсуждаются изменения на рынке труда в разрезе регионов, выявляются основные тенденции и вызовы, с которыми сталкиваются различные регионы страны. Это подчеркивает необходимость индивидуального подхода к каждому региону при формировании стратегий занятости, направленных на создание благоприятных условий для устойчивого развития всех регионов страны. Освещаются как потенциальные выгоды, так и риски, связанные с цифровой трансформацией рынка труда, а также предлагаются стратегии для устойчивого развития рынка труда в условиях цифровой экономики. При этом отмечается, что в условиях стремительного развития информационных технологий и роста удаленной занятости традиционные подходы к оценке состояния рынка труда становятся менее эффективными. Авторы статьи подчеркивают, что официальная статистика часто не отражает реальную ситуацию на рынке труда, особенно в условиях быстро развивающейся цифровизации экономики.

Ключевые слова: рынок труда, цифровизация экономики, регион, занятость, региональные различия, выгоды, риски, цифровое неравенство, устойчивое развитие

Introduction

The digitalization of the economy is one of the key factors shaping the modern labor market. In the context of the rapid development of information technology and global innovation, traditional industries are undergoing significant changes, and new areas of activity create unique opportunities and challenges for employment. The development of digital technologies, such as artificial intelligence, big data, the Internet of Things and automation, entails significant changes in the employment structure and qualification requirements of employees. These processes have both a positive impact, creating new employment opportunities and increasing productivity, and cause certain risks associated with unemployment and social inequality (Abdrakhmanova et al., 2019).

The labor market in Kazakhstan is a reflection of the economy of Kazakhstan, characterized by both significant growth potential and serious challenges. The country's economy is based on such key industries as oil and gas extraction and processing, mining, agriculture and transport. These sectors provide a significant share of employment and form the structure of the labor market. However, in recent years, against the background of global changes and accelerated digitalization, the structure and dynamics of the labor market have undergone significant changes.

The digitalization of the economy has a profound impact on the labor market in Kazakhstan. The introduction of new technologies and automation of processes led to a change in the demand for labor and the emergence of new professions that require specific digital skills. At the same time, traditional professions and jobs, especially in areas subject to automation, such as production and administrative functions, are gradually losing their

relevance (Kurmanov et al., 2019).

One of the key aspects of the digitalization of the labor market in Kazakhstan is the need to improve the level of qualification and retraining of personnel. Educational institutions and vocational training programs play an important role in providing the labor market with qualified specialists who can adapt to new conditions. In this context, initiatives to develop digital literacy and training in information technology, programming, data analysis, and other related fields are becoming important (Рынок труда Казахстана: на пути к цифровизации. <https://iac.enbek.kz/ru/node/1451>).

Special attention should be paid to regional differences. Developed regions such as Almaty and Astana are adapting faster to digital changes thanks to better infrastructure, the availability of highly qualified personnel and investments in innovative projects. At the same time, remote and less developed regions face great difficulties due to limited access to modern technologies and educational resources. This leads to an increased regional imbalance and requires targeted measures to support and develop digitalization in these areas.

It is interesting to note that digitalization not only creates new opportunities but also causes certain social and economic challenges. One of these challenges is the risk of increased unemployment among workers whose professions are becoming less in demand due to automation and the introduction of new technologies. To mitigate these effects, social support programs and active labor market policies are needed, including the creation of new jobs in sectors related to the digital economy (Pestunova et al., 2021).

International cooperation also plays an important role. Kazakhstan actively participates in global digital initiatives and projects, which facilitates the exchange of best practices and technologies. Partnerships with international organizations such as OECD and ILO, as well as participation in projects related to the «One Belt, One Road» initiative, help accelerate the processes of digitalization and improve the adaptation of the labor market to new conditions.

As a result, the labor market in Kazakhstan, which is under the influence of the digitalization of the economy, demonstrates complex and multifaceted trends. To successfully adapt to new conditions, comprehensive approaches are needed, including the development of digital skills, support for regional equality, an active employment policy, and international cooperation. This is the only way to ensure the sustainable development of the labor market and the economy as a whole, responding to the challenges and using the opportunities provided by digital transformation.

Materials and methods

A variety of data sources and research methods were used to analyze trends in the development of the regional labor market in Kazakhstan in the context of the digitalization of the economy. Statistical data provided by the Bureau of National Statistics of the Agency for Strategic Planning and Reforms were selected as the main materials. These data include employment figures, unemployment rates, structural changes in the labor market, and wage data. The reports of the Ministry of Labor and Social Protection of the Population of the Republic of Kazakhstan were also used, which provide data on employment and retraining programs for employees, which allows us to assess the impact of government initiatives on the labor market.

Additionally, documents and reports related to national digitalization strategies and programs, such as «Digital Kazakhstan», were reviewed. These documents provide

information about the plans and results of the implementation of government programs for the introduction of digital technologies. Regional development programs were also analyzed to identify the features and priorities in the digitalization of various regions of Kazakhstan.

For a deeper understanding of the impact of digitalization on the labor market, scientific articles and reports from research organizations, both national and international, were used. Reports from organizations such as OECD and ILO provide comparative data and analytical materials that help assess Kazakhstan's position in a global context.

The methodological approach included the use of statistical analysis for data processing and interpretation. Descriptive statistical analyses were carried out to determine the basic indicators of the labor market, as well as correlation and regression analyses to study the relationship between the levels of digitalization and changes in the labor market.

The content analysis of documents and publications made it possible to identify key trends and directions of digitalization of the economy of Kazakhstan. The study of regional programs and strategies made it possible to identify specific approaches to digitalization in various fields.

Predictive methods such as scenario planning and expert assessments were used to develop forecasts and scenarios for the development of the labor market. Scenario planning has helped to develop various options for the development of the labor market, taking into account possible levels and rates of digitalization. Expert assessments made it possible to form reasonable forecasts and scenarios.

An integrated approach combining quantitative and qualitative research methods allowed us to gain a comprehensive understanding of the impact of digitalization on the labor market in Kazakhstan and identify key trends and patterns of its development in various regions of the country.

Results

The labor market in Kazakhstan, as in other countries, is undergoing significant changes under the influence of global and national economic, technological and social factors. In recent years, Kazakhstan has witnessed several key trends that determine the development of the labor market and shape its future.

One of the most noticeable trends is the digitalization and automation of various sectors of the economy. Kazakhstan is actively implementing information technologies and digital solutions in production processes, services, and management. This leads to increased productivity and efficiency but also causes changes in the employment structure. The demand for specialists in IT, programming, cybersecurity, and data analysis has grown significantly, which requires adapting the education system and retraining programs to new realities.

Another important trend is the development of the service sector. Kazakhstan continues to move towards economic diversification, reducing dependence on extractive industries. The growth of the service sector, including financial services, tourism, health, and education, is creating new employment opportunities. This shift is accompanied by an increase in the number of jobs requiring high qualifications and specific skills, which, in turn, stimulates the development of vocational training and advanced training.

The third important aspect is the changes in the geographical structure of employment. Urbanization and concentration of economic activity in large cities such as Astana and Almaty continue. These cities are becoming centers of attraction for highly

qualified professionals and young people. However, this creates an imbalance in regional development, which requires attention to regional development policies and job creation in remote and rural areas. Government support programs and infrastructure investments can help balance these processes.

The fourth trend is an increase in employment flexibility and the development of new forms of work. The growing number of freelancers, self-employed, and remote workers reflect global changes in the organization of work. Kazakhstan has also seen an increase in interest in flexible forms of employment, which opens up new employment opportunities, especially in the context of the COVID-19 pandemic, which accelerated these processes. However, for the full development of this segment, it is necessary to resolve issues of legislative regulation and social protection of such workers.

The fifth trend is related to labor migration. Kazakhstan continues to be an attractive destination for migrants from neighboring countries, which enriches the labor market with additional resources. At the same time, the emigration of qualified specialists abroad remains a problem. To solve it, measures to improve working conditions, create attractive career opportunities, and improve the standard of living within the country are important.

Finally, an important trend is the attention to sustainable development and the «green» economy. There is a growing interest in environmentally friendly technologies and practices in Kazakhstan, which creates new jobs in sectors such as renewable energy, environmental engineering, and waste management. Support for sustainable development initiatives contributes to job creation and the development of new professional competencies (Рынок труда: развитие в условиях новой реальности. <https://iac.enbek.kz/ru/node/1179>).

Thus, the labor market in Kazakhstan is going through a period of significant changes due to digitalization, the growth of the service sector, urbanization, the development of flexible forms of employment, migration processes, and sustainable development. These trends require a comprehensive approach to the formation of employment policy, including the modernization of the education system, support for innovative and «green» projects, as well as attention to regional development and social protection of workers. Only such an approach will make it possible to effectively adapt to new challenges and use the opportunities for economic growth and improvement of the quality of life in Kazakhstan.

The dynamics of the main indicators of the labor market in recent years are presented in Table 1.

Table 1 - The main indicators of the labor market of the Republic of Kazakhstan for 2021–2023

Period	Labor force, people	Employed population, people	Including		Unemployed population, people	Unemployment rate, %	Youth unemployment rate (aged 15-28 years, %)	Persons who are not part of the workforce, people
			employees	self-employed workers				
The year 2020	9180845	8732040	6686666	2045374	448805	4,9	3,8	4076775
The year 2021	9256757	8807113	6710206	2096907	449644	4,9	5,2	4093294
The year 2022	9429809	8971539	6847300	2124239	458270	4,9	5,1	4301439
The year 2023	9934114	9081920	6893429	2188491	452194	4,7	3,5	4393533
Note – compiled according to the Bureau of National Statistics of the Agency for Strategic Planning and Reforms								

As can be seen from the table, in the period from 2020 to 2023, the country has seen steady growth in both the labor force and the employed population in Kazakhstan. So, if in 2020 the number of the labor force was 91,80845 people, then by 2023 it reached 9934,114 people, which is 753269 people or 8.2 % higher than the level of the base year 2020. This indicates steady growth, which has been dismantling the labor force indicator for four years, which may be due to an overall increase in the population, an improvement in the economic situation, and an increase in the number of people ready and able to work.

The indicator of the number of employed people shows a positive trend, which indicates the creation of new jobs and improvement of employment conditions. Thus, the number of employed people during the analyzed period increased from 8732040 people in 2020 to 9081920 people in 2023.

The increase in the number of employed people in the Republic of Kazakhstan was due to both an increase in the number of employees and the self-employed population.

Thus, the number of employees increased by 3.1 % in 2023 against the level of 2020 - from 6686666 people in 2020 to 6893429 people in 2023. The number of self-employed workers also increased at a higher rate – by 6.9 %, amounting to 2188,491 people in 2023.

This growth indicates positive changes in the country's economy and an increase in activity in the labor market. At the same time, the increase in the number of employees indicates the expansion of formal employment, which contributes to strengthening the social protection of the working population. In parallel, the growth of the self-employed population reflects the activity of entrepreneurship and individual entrepreneurial initiative, which contributes to the diversity and diversification of economic activity in the country. To continue positive trends and further develop the labor market, it is necessary to adapt educational programs and training systems to the new conditions caused by digitalization and changes in the economy.

The unemployment rate remained stable at 4.9 % from 2020 to 2022 but dropped to 4.7 % in 2023. The decrease in the unemployment rate in 2023 indicates positive changes in the labor market, which may be the result of effective government policy measures to support employment.

The youth unemployment rate (aged 15–28) was 3.8 % in 2020, rose sharply to 5.2 % in 2021, then dropped slightly to 5.1 % in 2022 and fell sharply to 3.5 % in 2023. This indicates significant fluctuations in the level of youth employment, but a sharp decline in 2023 indicates positive changes and successful measures for youth employment.

The number of people outside the workforce has gradually increased from 4076775 in 2020 to 4393533 in 2023. This increase may be due to demographic changes, an increase in the number of students, retirees and people engaged in household work or on long-term parental leave. This requires additional measures to involve this category of the population in economic activity. Increasing the number of people outside the workforce requires the development of strategies and measures to integrate them into economic activities, which will help ensure sustainable development and social stability.

Regional peculiarities play a critical role in determining the nature and dynamics of changes in the labor market. Kazakhstan, with its vast territory, diverse economy, and significant regional differences, is an interesting object for analysis.

So, based on the data in Table 2 below, we can conclude about the diversity of the labor market situation in different regions of Kazakhstan. Some regions have higher employment levels and lower unemployment rates, while others face a more difficult situation. This may be due to differences in economic development, infrastructure, access to education, and other factors.

Table 2 – The main indicators of the labor market in the context of the regions of the Republic of Kazakhstan for 2023

Регионы РК	Labor force, % (the share of the region in the national indicator)	The share of the labor force in the population, %	Employed population, % (the region's share in the national indicator)	Unemployed population, % (the region's share in the national indicator)	Unemployment rate, %	Youth unemployment rate (aged 15–28 years, %)
The Republic of Kazakhstan	100,0	68,5	100,0	100,0	4,7	3,5
Abai Region	3,2	68,4	3,2	3,3	4,7	3,5
Akmola region	4,5	71,7	4,5	4,5	4,8	2,7
Aktobe region	4,8	70,9	4,8	4,8	4,8	3,3
Almaty	7,8	71,5	7,8	7,7	4,7	2,5
Atyrau region	3,7	77,1	3,7	3,8	4,7	3,1
West Kazakhstan region	3,7	69,8	3,7	3,8	4,8	2,6
Zhambyl region	6,0	69,7	6,0	6,0	4,9	3,8
The area of Zhetisu	3,4	67,2	3,4	3,5	4,8	3,1
Karaganda region	5,9	64,7	5,9	5,1	4,9	3,8
Kostanay region	5,0	72,2	4,9	5,0	4,1	3,0
Kyzylorda region	3,7	63,8	3,6	3,8	4,8	3,1
Mangystau region	3,7	73,4	3,7	3,9	4,9	3,5
Pavlodar region	4,2	69,8	4,2	4,3	5,0	4,1
North Kazakhstan region	3,0	67,3	3,0	3,1	4,8	2,6
Turkestan region	8,8	63,4	8,8	9,2	4,8	4,8
Ulytau region	1,1	67,6	1,1	1,0	5,0	2,8
East Kazakhstan region	4,1	67,6	4,1	4,0	4,2	3,7
Astana	7,2	71,7	7,3	6,9	4,6	3,4
Almaty	11,5	68,6	11,5	11,6	4,5	4,0
Shymkent	4,8	59,3	4,8	4,9	4,8	5,2
Note – compiled according to the Bureau of National Statistics of the Agency for Strategic Planning and Reforms						

Several generalizing conclusions can be drawn from the presented table:

1. The labor force in the Republic of Kazakhstan is fairly evenly distributed across various regions, but cities such as Almaty and Astana concentrate a significant part of the labor force. 11.5 % and 7.2 %, which indicates their importance in the country's economy. Several regions also have a significant share of the employed population, for example, Zhambyl (6.0 %), Turkestan (8.8 %) and Karaganda (5.9 %) regions. However, at the same time, some regions, such as the Ulytau Region and the North Kazakhstan region.

2. The average unemployment rate in the country is 4.7 %, which can be considered as a relatively low figure, but there are significant differences between regions, where some regions and cities face higher unemployment rates than others.

3. Youth unemployment varies from 2.5 % to 5.2 % in different regions, and in some places, it is significantly higher than the national average. This may indicate problems with the integration of young people into the labor market in some areas.

4. Differences in employment and unemployment reflect the economic and social diversity between regions. Some areas have more developed infrastructure, which contributes to the improvement of the labor market situation, while others face problems such as low levels of investment and limited employment opportunities.

5. Cities, especially large megacities, play a key role in the country's economy, attracting both labor and investment. While there is potential for development in some rural areas, unemployment and other economic indicators may be higher due to limited opportunities.

In general, the presented data reflect a complex picture of the labor market in the Republic of Kazakhstan, where there is both certain stability and uniformity in the distribution of labor resources, as well as regional inequalities and challenges that require additional efforts to solve them.

In addition, significant regional differences in the level of digitalization and economic development require special attention. Digital transformation is happening faster in large cities than in remote and rural areas. An analysis of the regional characteristics of the labor market helps to identify imbalances and develop measures to eliminate them, contributing to a more even economic development of the country. This is important for maintaining socio-economic stability and improving the quality of life of the population in a digital economy.

A characteristic feature of the labor market in the context of digitalization and, as a result, the pandemic is the emergence of a new type of employment - distance. This type of employment is becoming more common in the modern world, especially with the development of information technology and the increased possibility of remote work. (Рынок труда: низкая производительность, скрытая безработица, региональный дисбаланс. https://halykfinance.kz/download/files/analytics/AC_labor.pdf).

Remote employment involves doing work without the need for physical presence at the workplace. An employee can perform his duties from anywhere in the world, having only access to the Internet and the necessary tools. This opens up new opportunities for flexible work and provides more comfortable working conditions for many people.

The COVID-19 pandemic has further accelerated this process, drawing attention to the need to adapt to new realities. Many companies have switched to remote work to ensure the safety of their employees and maintain business processes in conditions of restrictions on movement and social contacts.

Remote employment has its advantages and disadvantages. On the one hand, it allows you to save time and resources on the way to work, improve work-life balance, and open access to work for people from remote regions or with disabilities. On the other hand, it can cause problems with the organization of communication and coordination of work, as well as increase social isolation and a sense of alienation from the team (Kaidarova et al., 2024).

Nevertheless, distance employment is an important aspect of the modern labor

market, which will continue to evolve in the future, adapting to the new challenges and opportunities that the digital age brings.

According to the data provided in Table 3, it can be concluded that, in general, the remotely employed population is only 0.47 % of the total number of people employed in the Republic of Kazakhstan. This suggests that remote employment is not yet a mass phenomenon in the country's labor market.

The share of the remotely employed population in various regions varies from 0 % to 0.14 %, while most regions have very low rates of this type of employment.

The cities of Astana (0.03 %) and Almaty (0.04 %) have slightly higher rates of remote employment compared to the regions.

Table 3 – Remote employment by region in 2023

Regions of the Republic of Kazakhstan	Занятое население – всего, человек	Дистанционно занятое население, человек	Доля дистанционно занятого населения в общей численности занятых, %
The Republic of Kazakhstan	9081920	42514	0,47
Abai Region	292461	13073	0,14
Akmola region	407078	964	0,01
Aktobe region	434939	55	0,00
Almaty	704754	6550	0,07
Atyrau region	335132	33	0,00
West Kazakhstan region	333305	213	0,00
Zhambyl region	543678	1023	0,01
The area of Zhetisu	309252	807	0,01
Karaganda region	535799	4590	0,05
Kostanay region	449548	2301	0,03
Kyzylorda region	331480	22	0,00
Mangystau region	336747	2899	0,03
Pavlodar region	385155	378	0,00
North Kazakhstan region	274530	627	0,01
Turkestan region	800598	679	0,01
Ulytau region	100933	348	0,00
East Kazakhstan region	368832	321	0,00
Astana	658663	2434	0,03
Almaty	1045505	3231	0,04
Shymkent	433531	1966	0,02

Note – compiled according to the Bureau of National Statistics of the Agency for Strategic Planning and Reforms

Distance employment is mainly concentrated in some industries such as information technology, marketing, freelancing and others where physical presence in the workplace is not required. Relatively small values of the share of the remotely employed population in most regions may reflect the insufficient development of technological infrastructure and limited opportunities for remote work.

Despite the low indicators, remote employment has the potential for further growth, especially given the trends towards digitalization and changes in the economy's structure. It is important to pay attention to the development of appropriate infrastructure and support for this type of employment to stimulate its spread and facilitate the inclusion of the population in the labor market.

It should be noted that official statistics often do not reflect the real situation in the labor market, especially in the context of a rapidly developing digital economy. Firstly, the time lag between data collection, processing, and publication leads to the fact that statistics no longer correspond to the current situation. The labor market in the digital economy is changing very quickly, and official data often simply do not keep up with these changes (Pestunova et al., 2021).

Secondly, a significant part of the workforce may be employed in the informal sector, which official statistics usually do not take into account. This includes both shadow employment and the growing number of freelancers and self-employed who may not register with government agencies. In the digital economy, many people work on freelance platforms or create their small businesses, which often eludes traditional statistical accounting methods.

In addition, the quality and accuracy of the data may suffer due to various methodological problems and errors in the collection of information. Different countries and regions may use different standards and methods, which leads to inconsistencies and distortion of the overall picture. It is also important to keep in mind that official statistics may not record hidden unemployment and underemployment when people are not formally registered as unemployed but are actively looking for work or working part-time.

Geographical and sectoral unevenness also plays a significant role. National statistics average the data without taking into account significant differences between regions and sectors of the economy. For example, in one part of the country, there may be a high level of employment, while in another there is serious unemployment. Sectoral differences are also important: the dynamics in the IT sector can be radically different from the situation in traditional industries such as manufacturing or agriculture (Кожанов et al., 2024).

Finally, the changing nature of work in the digital economy, the emergence of new forms of employment, and rapid changes in the requirements for qualifications and skills of employees create additional difficulties for traditional statistics. New forms of employment, such as distance work and gig economics, are difficult to fully account for in traditional statistical accounting methods.

All these factors combined lead to the fact that official statistics are not always able to reflect the real trends and dynamics in the labor market in the digital economy. To obtain a more complete and accurate picture, it is necessary to use additional data sources and modern analysis technologies.

Discussion

In the context of the digitalization of the economy of Kazakhstan, there are clear

trends in the labor market, which reflect both opportunities and challenges. Digitalization stimulates the creation of new jobs in the information technology sectors, while simultaneously requiring retraining and strengthening the digital skills of the workforce. At the same time, the risks associated with job losses and the threat of digital inequality pose certain challenges for society and government institutions.

Consequently, the successful development of the labor market in the context of digitalization requires a balanced approach that not only stimulates innovation and developing digital infrastructure but also creates effective mechanisms for social support and training. Public and private entities should work together to develop and implement comprehensive strategies that maximize the benefits of the digital economy while minimizing possible negative impacts on employment and social stability.

Among the main benefits of digitalization for the labor market of Kazakhstan are the following:

1. Creation of new jobs. Digital technologies are stimulating the emergence of new industries and sectors that require specialists with digital skills. This includes software development, Internet business, cybersecurity, data analytics, and other related areas where demand for skilled workers remains high.

2. Increase in labor productivity. Automation of processes and the introduction of digital tools can improve labor efficiency and reduce production costs. This contributes to the growth of the competitiveness of enterprises and the creation of conditions for increasing the wages of employees.

3. Development of digital skills. Digitalization requires employees to be able to work with modern technologies and use digital tools in their activities. This helps to expand the range of professional opportunities and increase the demand in the labor market for specialists with appropriate skills.

4. Flexibility and remote work. Digital technologies make it possible to work remotely and have a flexible work schedule. This is especially true in the context of the COVID-19 pandemic when many companies switched to remote operations. Flexible forms of employment help to improve the balance between work and personal life of employees (Arynova et al., 2024).

However, in addition to the benefits, digitalization also carries certain risks and challenges for the labor market:

1. The risk of job losses. Process automation can lead to job cuts in traditional sectors where tasks can be performed using machines and software. This can increase the unemployment rate and create social tensions.

2. The need for retraining. Digitalization requires employees to upgrade their skills and professional retraining. This may be difficult for some workers, especially those employed in traditional industries with low levels of digital literacy.

3. The threat of digital inequality. The uneven spread of digital technologies can lead to a deepening of digital inequality between different population groups and regions. Those who do not have access to digital resources or do not have the appropriate skills risk being left on the sidelines of digital progress.

4. Data security and privacy. With the growth of digitalization, the threat of cyber-attacks and data security breaches increases. This can affect trust in digital technologies and weaken the motivation of companies and individual users to use them.

Thus, the digitalization of the labor market in Kazakhstan is a complex and

multifaceted process that requires careful analysis and balanced approaches. To maximize benefits and minimize risks, it is necessary to develop comprehensive digital transformation strategies that take into account the interests of all stakeholders, including employees, employers and government agencies.

Conclusion

The analysis of trends in the development of the labor market in the conditions of digitalization of the economy of Kazakhstan reveals the complex dynamics of changes that have a significant impact on labor relations and social dynamics. Digital transformation opens up new prospects for job creation, productivity improvement, and human capital development through improved digital literacy. However, the associated challenges, such as the risk of job losses and the threat of digital inequality, require careful implementation of socio-economic measures and innovative strategies.

To successfully adapt to the digital economy, it is necessary to develop comprehensive approaches that take into account the interests of all stakeholders. This includes strengthening educational programs aimed at developing digital skills, creating conditions for innovation and entrepreneurship, as well as developing social protection mechanisms for those at risk of unemployment due to changes in the labor market. This is the only way to ensure the sustainable and fair development of the labor market in the context of digital transformation, which is becoming an inevitable part of modern economic reality.

It is important to note that successfully responding to the challenges of digitalization of the labor market requires not only efforts from the state and the business community but also the active participation of society as a whole. This includes supporting and stimulating innovation activity, developing a culture of digital literacy among the population, and creating conditions for continuous training and professional retraining. In addition, special attention should be paid to the participation of women, youth, and other vulnerable groups in the labor market to ensure equal opportunities and fair distribution of benefits from digital transformation (Arynova et al., 2024).

Finally, in the context of the rapid changes associated with digitalization, it is important to realize that the labor market must remain flexible and adaptive, able to respond quickly to new challenges and opportunities. This requires all participants in the labor market to be ready for continuous learning, the development of soft skills, and a willingness to change. This is the only way to ensure the sustainable and inclusive development of the labor market, which will contribute to the prosperity and well-being of all members of society in a rapidly changing world of digital opportunities.

REFERENCES

Arynova Z.A., Kaidarova S.E., Zolotareva S.V., Bekniyazova D.S., Tyulyugenova L.B. (2024). Synergy of education and the labor market of Kazakhstan in the digital age: main directions and problems//Digital transformation of education – problems and solutions: Collection of materials of the Second National Scientific and Practical Conference. — 04/25-04/26/2024, — Russe, Bulgaria. — Rusensky University, 2024

Arynova Z.A., Kaidarova S.E., Zolotareva S.V. (2024). “Interaction of the labor market and the education system in Kazakhstan: challenges of the digital economy”//—*Bulletin of the Toraihyrov University. Economic Series.* — No.1. 2024. — Pp.18–30

Kazakhstan’s labor market 2023: low productivity, hidden unemployment, regional imbalance//Overview of the labor market in Kazakhstan. — Halyk Finance Analytical Center. https://halykfinance.kz/download/files/analytics/AC_labor.pdf

Kozhanov Zh.M., Arynova Z.A. (2024). Tsifralndyru zhaidayinda zergilikti ekonomikanyn turakty damu factors retinde enbek narygyn ontaylandyru//Youth and science: a new vision and dialectic of development: A collection of materials from the international scientific and practical conference of doctoral students, undergraduates and students: (April 11, 2024, Karaganda, Kazakhstan). — Karaganda: KarU Kazpotrebsoyuz, 2024. — Pp.853–857

Kaidarova.E., Kaidarov A.A., Moldabaeva A.K. (2024). Challenges and opportunities of the labor market in the ERA of digital economy//Youth and science: a new vision and dialectic of development: A collection of materials from the international scientific and practical conference of doctoral students, undergraduates and students: —April 11, 2024. — Karaganda, Kazakhstan. — Karaganda: KarU Kazpotrebsoyuz, 2024. — Pp.65–69

Kurmanov N.A., Mutaliyeva L.M., Aliyeva Zh.Zh. (2019). The interaction of the labor market and the higher education system in contemporary conditions//Bulletin of the L.N. Gumilyov Eurasian National University. — Economic Issue. 2019. — Pp. 93–99

National report «The labor market of Kazakhstan: on the way to digital reality», 2022. <https://iac.enbek.kz/ru/node/1451>

National report «The labor market of Kazakhstan: development in a new reality», 2021. <https://iac.enbek.kz/ru/node/1179>

Pestunova G.B., Shishakova Yu.V., Vechkinzova E.A. (2021). The labor market in the context of digitalization // — *Bulletin of SUSU. The series «Economics and Management»*, 2021. — Vol. 15. — No. 4. — Pp. 97–105

What is the digital economy? Trends, competencies, measurement: dokl. to the XX Apr. international scientific Conference on problems of economic and social development. — Moscow. — 9–12 Apr. 2019/G.I. Abdrakhmanova, K.O. Vishnevsky, L.M. Gokhberg et al.; scientific ed. L.M. Gokhberg; National research. Higher School of Economics Univ. — Moscow: Publishing House of the Higher School of Economics, 2019. — 82 p.

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