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S.N. Suieubayeva[1], E.S. Nurekenova[2*], M.U. Rakhimberdinova[3], V.N. Granetskiy[4]

[1-4] D. Serikbayev East Kazakhstan Technical University, Ust-Kamenogorsk, Kazakhstan
[1]suyeubaeva@mail.ru, [2]emadiyarova@mail.ru, [3]rmu_uk@mail.ru, 4gran2007@bk.ru

[1]https://orcid.org/0000-0002-0290-6290, [2]https://orcid.org/0000-0002-2944-6968,
[3]https://orcid.org/0000-0001-9009-8686, [4]https://orcid.org/0009-0004-8974-7545
[1]Scopus Author ID: 57160209000, [2]Scopus Author ID: 57737488100, [3]Scopus Author ID: 56127317000

Digital entrepreneurship as a result of the transformation of the labor market in a pandemic

Abstract

Object: Study the impact and adaptation of digital information system of the economy on the development of the level of small and medium-sized enterprises, increasing the labor market in pandemic conditions.

Study of how the economy's digital information system has affected and evolved small and medium-sized business development, as well as the growth of the labor market in conjunction with the pandemic.

Methods: The theoretical literature on this topic served as the foundation for the study's methodology. Emerging problems of the labor market of Kazakhstan in the conditions of COVID-19 pandemic were identified through qualitative and quantitative analysis of statistical data. The analytical part of the study organizes the findings from the examination of the Republic's small- and medium-sized business support programs, which allowed for the evaluation of economic processes overall and the formulation of broad conclusions.

Findings: The study identifies relevant aspects of the development of digital entrepreneurship in the modern economy; the scientific approach to the concept of digital economy and digital entrepreneurship is implemented as a result of the study of literary sources; the factors that have a significant impact on the transformation of the functioning labor market are identified; the degree of influence of these factors on the Kazakh economy is determined. For a qualitative change in the labor market, the authors identified a tangible need to increase the digital literacy of the population, new thinking skills, increase the level and quality of education, which will undoubtedly change the structure of human resource potential and ultimately increase labor productivity.

Entrepreneurs have unique opportunities to apply high-tech inventions in practice to improve the business model of organizations. Thus, the following opportunities open up: the emergence of digital platforms as representatives of fundamentally new institutions; the emergence of the "peer-to-peer" communications function, when opportunities arise for communication participants directly without a company and market; the emergence of effective organizations with a reduced middle management function and increased directive control.

Conclusions: This study analyzes digital mechanisms that search for new opportunities for employment in Kazakhstan's economy. In today's economy, a necessary requirement for its successful development is undoubtedly the development of a digital environment. To characterize the ways of introducing digital tools into business processes, the state Program "Digital Kazakhstan", aimed at supporting economic entities, was studied. The study analyzed the employment of people in digital business. An assessment was also made of the degree of transformation of Kazakhstan's employment models depending on arising emergency situations.

An important aspect of the work is the development of recommendations for the further expansion of business digitalization.

Keywords: digital entrepreneurship, digital economy, entrepreneurship, government support, labor market.

Introduction

In addition to altering business practices, digital transformation creates new coordinates for institutional equilibrium, generates organizational transformations, and modifies the current institutional structure. Thus, the effect of the COVID-19 pandemic, which started at the end of 2019 and is still going strong today on the economy, is a pressing concern. Thus, the limitations imposed by the quarantine laws and digitalization resulted in the reorganization of business operations, the modification of business models, the development of marketing management systems, and adjustments in consumer behavior.

Under the current circumstances, the established institution of entrepreneurship is essential for the state's stable development and the economy's sustainable growth. By incorporating digital tools into the current business process, entrepreneurs are creating a new kind of entrepreneurship that is resilient to the challenges of the modern world. Through the use of digital channels, entrepreneurs can automate procedures, gather and evaluate data, and extend their company's geographic reach. This is known as digital entrepre-

*Corresponding author. E-mail address: *emadiyarova@mail.ru*

neurship. Additionally, it fosters creativity and the creation of fresh business strategies based on technological advancements. The subject of the emergence and growth of digital entrepreneurship in the Republic of Kazakhstan at this time appears to be particularly pertinent in this sense.

Have the previous government programs contributed to the regulation of the social safety net and the economy? What effects and modifications does social isolation have in Kazakhstan? What effects has the epidemic had on the nation's small and medium-sized businesses? Which actions does the government need to take to lessen the country's socioeconomic imbalance and burden? We shall attempt to address these queries in this study article.

Literature Review

Digital entrepreneurship refers to entrepreneurship combined with the utilization of emerging digital technologies (particularly social media, vast data sets, mobile device applications, or "clouds") (Andreyeva & Dzhemayev, 2017). Such use may be made to enhance corporate operations, develop fresh business concepts, bolster the enterprise's intellectual capital, or interact with stakeholders and customers. Digital entrepreneurship, sometimes referred to as digital business or e-entrepreneurship, is a type of entrepreneurship in which a company is created, developed, and managed using digital technologies and online resources (European Commission, 2021). Compare and contrast a variety of activities, such as online selling of goods and services, monetizing online platforms and applications, online marketing, digital media companies, e-commerce, freelancing, and more. It appears that there is little definition for the word "digital entrepreneurship". Other researchers define the digital enterprise as "an organization that uses information technology as a competitive advantage in all areas of its activities: production, business processes, marketing and customer interaction" (Kuznetsova et al., 2017; Eckhardt et al., 2018). According to other researchers, a digital enterprise is "firms in which the most volatile complementary asset of the organization is the assets of computer capital" (Ustinova, 2019; Ahuja et al., 2022). Digital entrepreneurship, according to O. Burgonov and D. Kruglov, "is a type of activity that can quickly adapt to constantly changing environmental conditions, including on the basis of a proactive forecast of the development of the situation in the future" (Burgonov & Kruglov, 2020). According to economist M. Baranov, "the concept of a digital enterprise involves completely restructuring the company around the extensive implementation of digital technology, which includes methods for managing, producing, and interacting with customers" (Baranov, 2016).

A different definition is given in the report on Australian innovation systems: "The values of entrepreneurial organizations are manifested in the creation of jobs and the commercialization of new inventions. Of course, in the knowledge economy and digital economy, entrepreneurs and the organizations they create have unique opportunities to take advantage of new opportunities, introduce new production methods and technologies, and change the form of competition by entering new markets" (Australian Innovation System Report, 2021).

Digital entrepreneurship necessitates knowledge of data analysis, online marketing, digital technologies, and the capacity to adjust to a quickly evolving digital landscape. Digital entrepreneurship is a vital component of the modern economy, fostering innovation and the development of new jobs (Davos, 2020).

Methods

The study accurately analyzes business development in Kazakhstan from 2016 to 2020, highlighting the COVID-19 pandemic's impact on the country's economy. It is crucial to evaluate Kazakhstan's readiness for the spread of illness and the implementation of restrictive measures both domestically and internationally. Having studied the static material of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, a comparison was made of the indicators of the number of operating legal entities of the Republic of Kazakhstan by industry with a private form of ownership in dynamics. The evaluation of the state programs "Digital Kazakhstan", "Business Roadmap 2020", and "Business Road Map 2025" in terms of target indicator achievement. The relevant conclusions were reached from the conducted research.

Results

Successful small and medium-sized enterprises are a key component of every nation's economic growth. Entrepreneurship has the power to boost local budgets, lower unemployment, and expand the tax base. However, the volatility of the outside world will also have a direct impact, primarily on small and medium-sized enterprises.

This is a combined program for the governmental program "Informational Kazakhstan-2020" (implementation period 2018–2022), the business "Business Road Map 2020" (implementation period 2015–2019), and the business "Business Road Map 2025" (implementation period 2020–2024). Furthermore, as part of the state's assistance to Kazakhstan's populace, the Decrees "On measures to ensure socio-economic stability" (No. 286, March 16, 2020) and "On further measures to stabilize the economy" (No. 287, March 16, 2020) have been implemented. In addition to ensuring sustainable and balanced growth of regional entrepreneurship, the State Program for Support and Development of Business, "The concept of development of small and medium-sized businesses in the Republic of Kazakhstan until 2030" (implementation period 2022–2030), has been adopted and is currently being implemented. It also aims to maintain existing and create new permanent jobs.

In 2021, small and medium-sized enterprises accounted for 32.8% of the gross value added in the Republic of Kazakhstan's GDP. Furthermore, the majority (20.6%) are small companies.

When discussing the country's degree of development, it is impossible to ignore the quantity of small and medium-sized enterprises that are now in operation.

The percentage of small and medium-sized businesses has increased in the following cities over the past three years: Shymkent (10.4%), Aktobe area (10.5%), Kyzylorda region (13.3%), and Nur-Sultan (15.9%). With a 0.8% rise, the East Kazakhstan area has had the least growth in small and medium-sized business activities. The number of enterprises decreased by 1%, 0.9%, and 0.1% in Turkestan, Zhambyl, and Mangistau, respectively, in 2019. In 2020, the cities of Almaty (197 066; 14.52%), Nur-Sultan (144 769; 10.67%), Turkestan area (140 605; 10.36%), and Almaty region (123 181; 9.08%) had the highest percentage of small and medium-sized firms. The area of North Kazakhstan has the fewest subjects (30 331), or 2.23%; this indicator is 0.9% higher than in 2019.

The overall number of business entities in the Republic rose by 2% throughout the designated 2020 period, while the growth rates stayed constant. 3.21% of operational small and medium-sized firms are owned by the state, whereas 21.12% of operating legal entities are privately owned. Business entities bear 75.66% of the remaining amount.

According to data, at the end of 2020, there were 330 312 operational legal entities in the Republic of Kazakhstan that were privately owned, accounting for 86.8% of all operating legal companies in the country.

The share ratio reveals that a higher proportion of active legal entities ― 28.4% (81 305) ― are engaged in retail and wholesale trade as well as auto and motorcycle repairs. In second position, at 13.9% (39,935), is construction (Fig. 1). The industries with the fewest legally operating private businesses are the military, government, and required social security (0.04%) (111). Supply of steam, hot water, electricity, gas, and air conditioning is 0.39% (1,104).

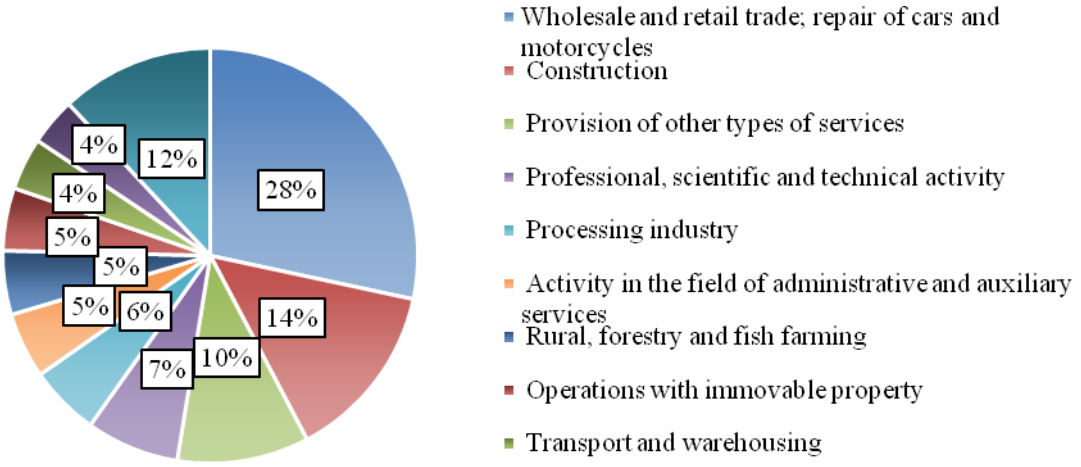

Figure 1. Indicators of the share ratio of commercial legal entities of the Republic of Kazakhstan by sectors of the economy

Note – compiled by the authors according to the data of the source (Official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2021, available at: https://stat.gov.kz)

Figure 2 shows that although the growth rate fell by 3.1%, there were 7.8% more private-owned running legal organizations in the Republic of Kazakhstan. Indicators increased steadily between 2016 and 2020.

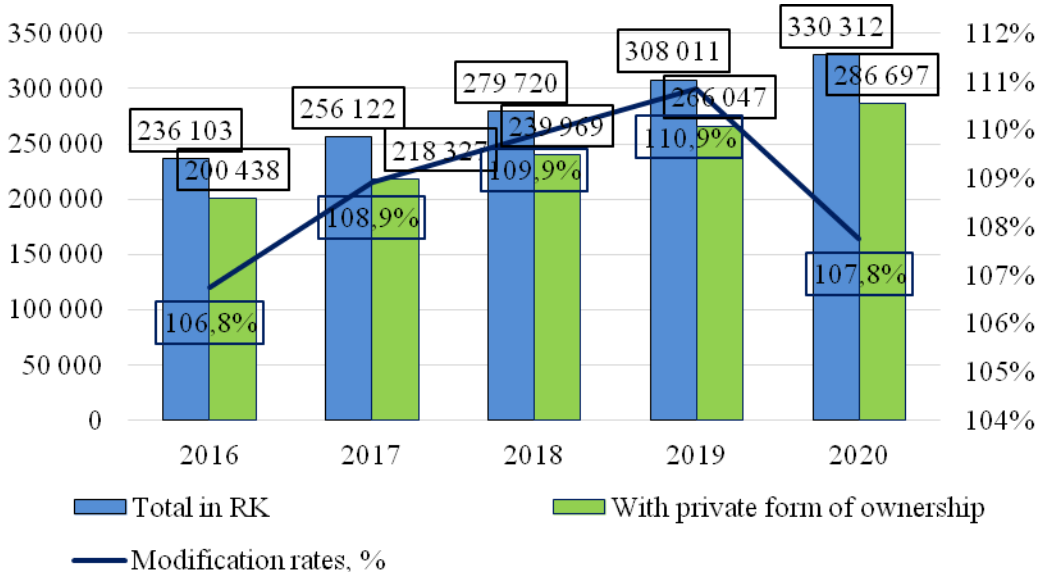

Figure 2. Statistical data in the period ― the number of operating commercial legal entities of the Republic of Kazakhstan by sectors of the economy

Note – compiled by the authors according to the data of the source (Official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2021, available at: https://stat.gov.kz)

Digital entrepreneurship utilizes government support tools like loan guarantees and interest rate subsidies to offset borrowing costs, we may therefore conclude with confidence that while the pandemic of 2020 had an impact on a decline in the growth rate of indicators, the number of small and medium-sized enterprises that were in operation did not decline. The state's assistance enabled the businesses to continue operating.

In accordance with the goals of the Address of the President of the Republic of Kazakhstan to the Kazakh people "Kazakhstan ― 2050": a new political course of the existing state" (December 14, 2012; Strategy 2050, 2012), a concept was developed for the implementation of the task of the National Development Plan of the Republic of Kazakhstan until 2025, approved Decree of the President of the Republic of Kazakhstan dated February 15, 2018 No. 636, and the National Entrepreneurship Development Project for 2021-2025, approved by Decree of the Government of the Republic of Kazakhstan dated October 12, 2021 No. 728.

The strategy aiming to maintain jobs and promote sustainable growth in regional entrepreneurship.

The idea goes in four different directions:

1) fostering an environment that will increase the growth of voluntary entrepreneurship;

2) establishing an institutional framework that guarantees entrepreneurial activity;

3) developing regulations for business activities that impact the business climate and environment;

4) guaranteeing the efficacy of the framework as a gauge of government support.

The following is the infrastructure that supports entrepreneurship:

- business service hubs located in Astana, Almaty, Semey, and Shymkent, as well as outlying centers;
- business incubators;
- business support centers in small towns, regional centers, and single-industry towns.

The program's foundation was the "Business Roadmap 2020" business development and support program, with its outcomes summarized in Table 1.

Figure 3 shows the primary end indicators for the "Business Roadmap 2020" initiative from 2015 to 2020, with indicators of activity's percentage of GDP averaging 94% over six years. However, a 1.1% drop in 2020 compared to the baseline is observed.

Table 1. Results of the unified business development and support program "Business Roadmap 2020"

Indicator	2015	2016	2017	2018	2019	2020
The share of activity in the gross domestic product, in% to GDP	94,9	94,4	94,1	93,4	93	93,9
Production of goods	35,5	36,6	36,9	37,9	37,4	40
Rural, forestry and fish farming	4,8	4,6	4,6	4,4	4,4	5,2
Industry	24,7	26,1	26,8	28,2	27,5	28,7
Mining industry and quarry development	12,6	12,8	13,5	14,8	14,5	14,1
Processing industry	10,1	11,3	11,2	11,4	11,4	12,6
Electricity supply, gas supply, bribes and air conditioning	1,7	1,7	1,7	1,6	1,4	1,8
Water supply; sewerage system, control over waste management	0,2	0,2	0,3	0,3	0,2	0,3
Construction	6,0	5,9	5,5	5,3	5,5	6,1
Production service	59,4	57,8	57,2	55,5	55,6	53,9
Trade and repair of motor vehicles	17,0	16,8	16,8	16,8	17	14,6
Transport and warehousing	8,6	8,3	8,2	8,2	8	6,7
Services for living and nutrition	1,1	1,1	1,1	1,1	1,1	0,8
Information and communication	2,6	2,1	2,0	1,9	2	1,8
Financial and insurance activities	3,5	3,5	3,7	3,3	3,2	3,7
Operations with immovable property	9,0	8,7	8,3	7,8	7,5	8,1
Professional activity	4,6	5,0	4,6	4,4	4,4	3,9
Administrative activities (in the field of service)	2,1	2,1	2,2	2,2	2,3	2,1
Social security (State Administration, Defense)	2,0	1,8	1,7	1,5	1,7	2
Educational activities	2,9	2,8	2,8	2,7	2,7	3,8
Health and social services	1,8	1,9	2,0	1,9	1,9	2,1
Arts and entertainment activities	0,8	0,8	0,7	0,8	0,7	0,9
Other types of services	3,3	2,8	3,0	2,8	3	3,3
The work of households using the services of domestic workers and producing goods and services for their own consumption	0,1	0,1	0,1	0,1	0,1	0,1
Change in the volume of output (in kind) (goods, services) by SME entities	101,8	94,2	100,4	107,5	111,9	96,7
Dynamics of changes in the number of operating SMEs	97,7	95,4	103,6	108,3	107,2	100,4
Dynamics of entrepreneurship development SMEs	103,1	99,2	99,3	102,4	102,6	102,0
Note – compiled by the authors according to the data of the source (Official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2021, available at: https://stat.gov.kz)						

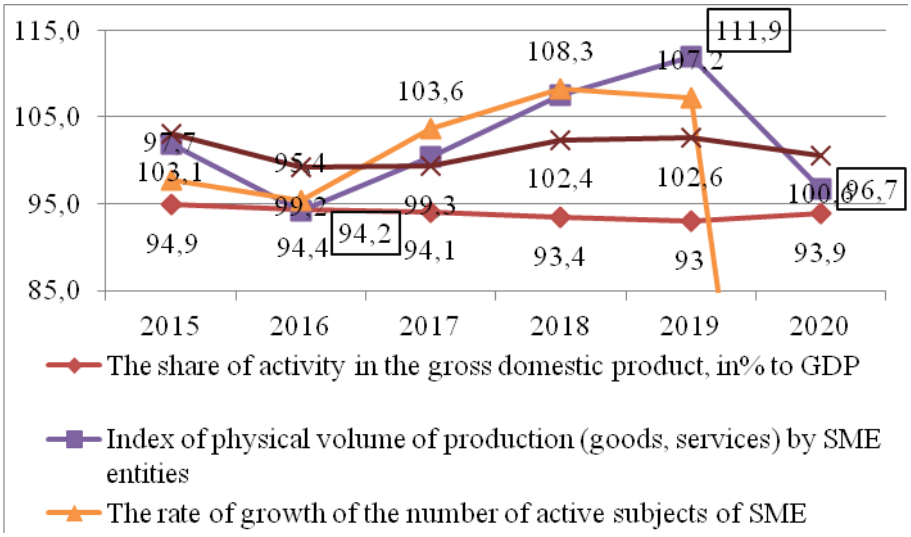

Figure 3. The main final indicators of the business development and support program "Business Roadmap 2020"

Note – compiled by the authors according to the data of the source (Official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2021, available at: https://stat.gov.kz)

Over a six-year period, the average physical volume of products (goods and services) was 102.1%, and in 2020 it decreased by 5%. The indicator's lowest decline, of 94.2%, was noted in 2016. There was a notable spike to 111.9% in 2019. Indicators of the number of running companies growth rate fell 6.8% from 2019 to 2020. In addition, a decrease in the growth rate of the workforce employed in small and medium-sized businesses was noted by 0.6% compared to 2019.

The "Business Roadmap 2020" company development and support program has been successful, with some deviations due to the 2020 crisis and pandemic, but overall, the indicators remain high and within reasonable limits.

The Digital Kazakhstan initiative was the next small- and medium-sized business support program. The program's primary objectives were to improve the nation's and the economy's competitiveness, enhance the population's quality of life, and achieve sustainable economic growth through the gradual development of the digital ecosystem ("Digital Kazakhstan" State program, 2017).

Following the implementation of the Program, it is anticipated that in 2021 there will be 81% of the population using the Internet; 81.5% of the population will be digitally literate; labor productivity in the ICT sector will grow by 5.9%; in the mining and quarrying sector, it will grow by 6.3%; in the transportation and warehousing sector, it will grow by 4.8%; 110 thousand people will be employed in the ICT sector; and 80% of public services will be received in electronic form.

Through socioeconomic reforms, the 2020 pandemic sparked the start of the shift to a new world, an information society devoid of damage. This time frame plays a role in the movement to accelerate the shift to digitalization.

These days, one of the key themes in the growth of the economy is digitalization. The entire Eurasian economic region has designated the advancement of digital technology as a top goal.

The data from the Republic of Kazakhstan's agency for statistics regarding the state program "Information Kazakhstan-2020" demonstrate the efficacy of efforts made in this direction to raise the general public's level of information technology literacy, which in turn aided in the creation of the Digital Kazakhstan initiative (Fig. 4).

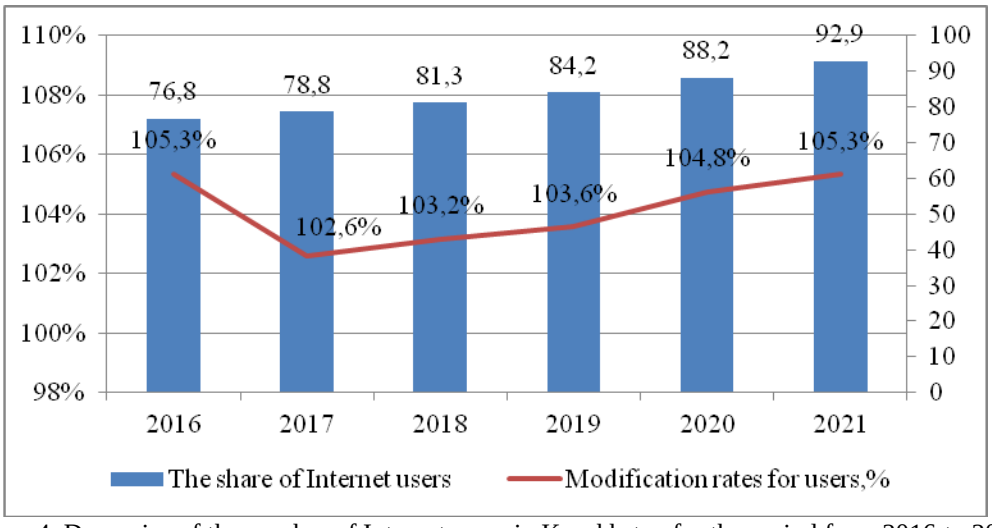

Figure 4. Dynamics of the number of Internet users in Kazakhstan for the period from 2016 to 2021

Note – compiled by the authors according to the data of the source (Report on the implementation of the State Program "Digital Kazakhstan" in 2018 – 2021", 2021, available at: https://www.gov.kz/)

In 2018, the growth rate climbed by 3.2%, and in 2019, it rose by 3.6%. The respective user shares were 81.3 and 84.2. This shows that the Information Kazakhstan 2020 initiative was not as effective as the Digital Kazakhstan program, launched in 2018.

Digitalization has an influence on every sector of the economy and will change the way Kazakhstan's economy is structured overall by fostering the growth of new companies, diversifying and using the full potential of non-resource sectors, and stimulating start-up activity.

The degree of digital technology influence varies across industries, though the traditional sectors of Kazakhstan's economy, such as the raw materials sector, are thought to have the greatest potential for value cre-

ation. At the same time, however, fundamentally new opportunities for value creation are emerging in the e-commerce, IT, and financial sectors.

The state program in the metrics used to evaluate the program's efficacy. The epidemic probably had an impact on the 29% increase in e-commerce's share of overall retail sales in 2019 and the 6.8-fold increase in 2021. The percentage of people using the Internet climbed by 4%, and compared to 2018, the population's degree of digital literacy increased by 3%. Ten hundred thousand new employment were generated by digitalization, and 67.69 billion tenge worth of investments were made in startups as a result (Table 2).

Table 2. Development of the digital economy in Kazakhstan for 2018–2021

Indicators	2018	2019	2020	2021	Changing rates		
					19/18	19/20	20/21
The level of e-commerce in the economy, %	1,4	1,8	4,1	9,6	29%	128%	134%
The share of Internet users, %	81,3	84,2	88,2	92,9	4%	5%	5%
The level of digitalization of the population, %	79,6	82,1	84,1	87,3	3%	2%	4%
Growth of created jobs due to digitalization, thousand people	-	50	100	102	-	100%	2%
The volume of investments in startups, billion tenge	-	19	21	67,7	-	14%	>100%
Note – compiled by the authors according to the data of the source (Report on the implementation of the State Program "Digital Kazakhstan" in 2018 – 2021", 2021, available at: https://www.gov.kz/)							

Global labor market adjustments are occurring in response to recent global events. The pandemic's conditions forced the current business model to be restructured. Numerous technological processes have been automated or robotized, which has resulted in structural changes to the labor market and the kinds of jobs that specialists can find. The following areas are where structural changes in the employment sector are taking place:

Direction 1: new professional competencies and new vocations for the digital economy;

Direction 2: creation of non-traditional employment models (overemployment, freelance work, temporary work, and part-time work).

It is noteworthy that the shift in job roles during the pandemic mostly happened as a result of employees being moved to remote work locations in order to carry out their duties. Another way that traditional employment is changing to a digital one is through self-employment or entrepreneurship itself.

Finding the best possible balance between the interests of business, society, and the government is the primary objective of supporting small and medium-sized enterprises. Providing an investment focus is a crucial responsibility of this kind of policy. The distribution of investments across economic sectors is not uniform and is contingent upon the objectives of governmental policies (Kontseptsiia razvitiia malogo i srednego predprinimatelstva v RK, 2022).

In developed nations, government backing for digital entrepreneurship is essential to the growth of the digital economy and the promotion of innovation. Different nations have distinct administrative, legal, and financial assistance programs and forms; yet, they all have a few characteristics in common:

- financial support, including tax holidays, exemptions from taxes, grants, and subsidies for digital entrepreneurs and startups; enabling access to venture capital and loans at favorable interest rates for companies in the digital technology industry;
- education, coaching, and training (organizing workshops and seminars to support the growth of entrepreneurial, technological, digital, and communication skills; allocating funds for such activities in both research and instruction);
- facilities and resources, including high-speed Internet access, improving mobile Internet access, its availability and quality, for wider dissemination of innovations and other infrastructure;
- actions to reduce inequalities in access to digital tools based on gender, class, ethnicity and geography;
- regulatory support and intellectual property protection (creating specific laws and regulations to encourage digital entrepreneurship, safeguarding data, and registering intellectual property rights).

The challenges posed by small company sizes can be addressed by small business support measures that include: facilitating access to capital markets through tax incentives, special depreciation rates, government investment subsidies, concessional lending that finances the difference between market and concessional lending rates, and the introduction of a cluster-network approach that aids in the development of business infrastructure. One of the indicators of the level of digitalization of the population is the availability and use of digital technologies. This includes access to the Internet, the use of mobile devices and computers, the

ability to work with software and applications, as well as the ability to find and process information in digital format. Other indicators may be the number of online transactions, the use of e-mail and social networks, the level of digital literacy, etc. In general, the level of digitalization of the population depends on the availability of infrastructure, educational programs and the degree of integration of digital technologies into people's daily lives.

Discussions

The nature of employment and the labor relations system as a whole are evolving in the digital economy (Suieubayeva et al., 2021). Stimulating innovative initiatives of employees, encouraging additional training, reuse and transfer of knowledge among employees, and certainly development of modern competencies in them occupies the first place in personnel management. Giving employee autonomy fosters a unique, trust-based connection between the individual and the boss. These include: collaboration, which is possible anytime and anywhere; immediate feedback, open culture and data-driven decisions. Smart HR 4.0, powered by new technologies and a new generation of employees, which can transform end-to-end HR processes covering all aspects of new talent. In order for Kazakhstan to realize its grandiose and ambitious goals of transition to a new technological level of development, a perfect mechanism for managing the digital economy is required, and the interests of government agencies, business, civil society, scientific and educational community should be realized. G. G. Golovenchik (Golovenchik, 2018), a Belarusian writer, examines the problems surrounding or facing the digital economy (Fig. 5).

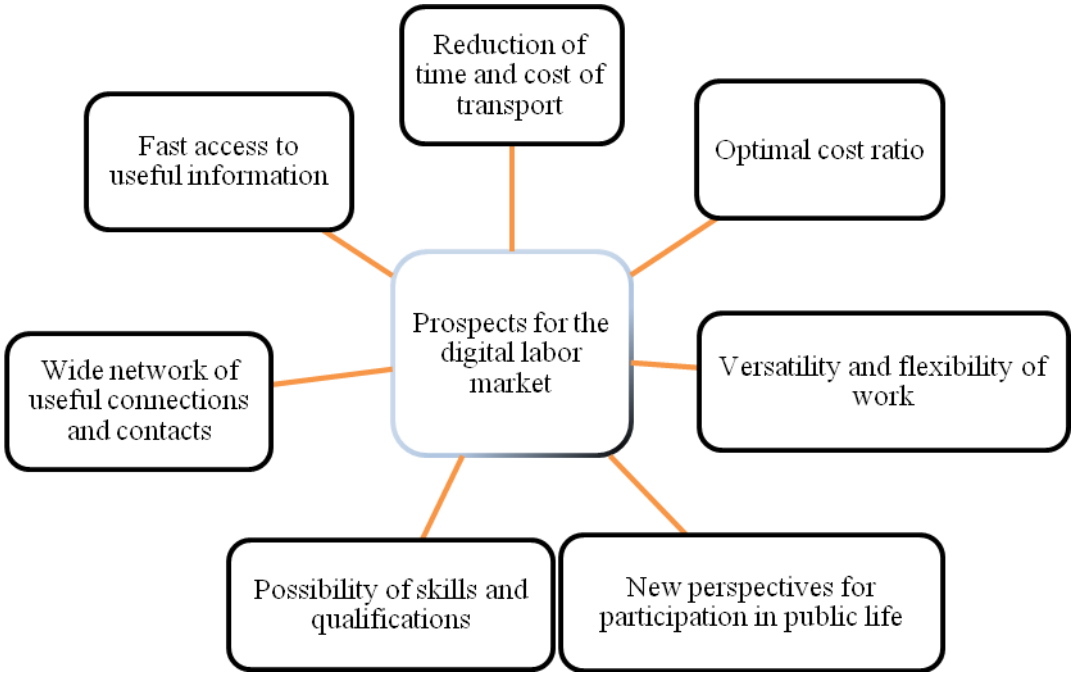

Figure 5. Benefits of digital employment

As can be seen from Figure 5, digital employment based on new technologies is freed from all unnecessary things, which increases its competitiveness and reduces costs for the manufacture of a particular product, including the replacement of intermediaries with automatic network services. Business is becoming more dynamic and complex, former barriers are being destroyed, and methods of social interaction, economic relations and institutions are being transformed. Online learning environments and courses are becoming more and more popular among businesses, independent contractors, and educational institutions.

Hiring individuals just requires relevant job experience; advanced degrees are not required by corporations like Google, Apple, and IBM. Therefore, attention is rightfully focused on increasing the level of human capital, as well as on developing digital skills among the population. On the one hand, education systems must be updated and capable of teaching people new skills. On the other hand, we must not forget to create conditions in which people can apply the acquired skills. These two issues cannot be separated from each other, because only through their joint development can the comprehensive development of society be achieved (Dobrynin, 2016; Yusupova & Pozdeyeva, 2018) (Fig. 6).

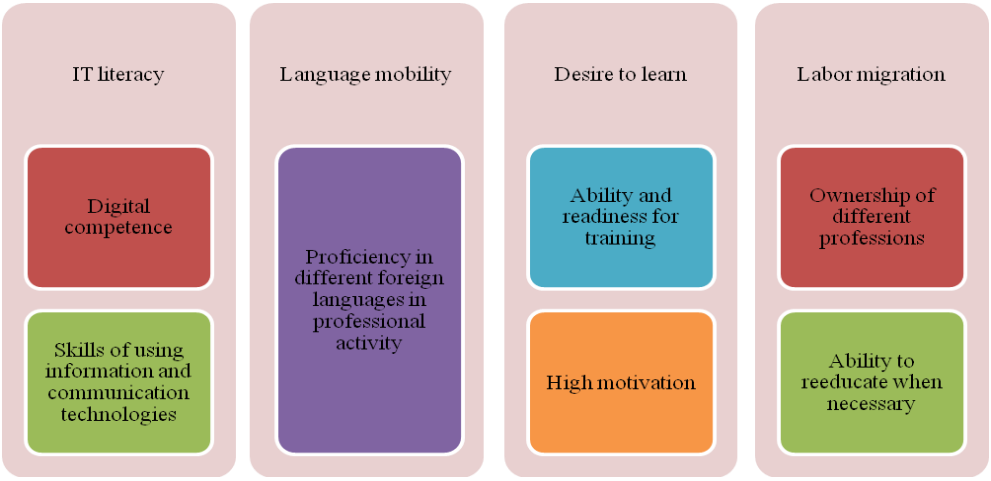

Figure 6. Requirements of digital entrepreneurship for modern specialists

It is also clear that there is a marked increase in demand for IT competencies as a result of large firms going fully digital. These businesses establish IT subsidiaries as a means of doing this. The largest market players' vector toward the insourcing of IT competencies bears witness to their rejection of the information processes' outsourcing technique. The effectiveness and strategic availability of experts in the event that the pertinent duties are actualized are the benefits of outsourcing IT as opposed to hiring outside experts. It has been observed that, in certain situations, insourcing might be a tactical instrument for furnishing a company with the requisite experts in specific domains.

Conclusions

The authors came to the conclusion that although there are many benefits to entrepreneurship in the digital economy, there are also challenges that come with making the shift to the digital sphere. These challenges include funding shortfalls, maintaining system security, and consumer resistance to adopting technology. It's also fairly evident that businesses that operate primarily via the internet enjoy a bigger advantage over conventional enterprises. Calculated data indicates that the state's ongoing policy of promoting employment through a series of measures in the pre-crisis period had a positive outcome; nonetheless, actions must be taken to ensure Internet accessibility (low connection and usage costs, faster speeds, uninterrupted Internet, etc.). It has been determined how crucial it is to educate entrepreneurs about the digital tools that companies use (such as platforms for video conferencing, project management, time management, etc.).

The pandemic has hastened the digital revolution of many businesses and presented serious challenges to established labor practices. Reforms that incorporate IT infrastructure into business processes are presently in place, allowing for speedier commercial operations, the development of new information channels, and the simplification of the procedures involved in the introduction and production of new products. As information becomes more and more important as a resource, industrial analytics systems-based tools and procedures for handling and analyzing data are being introduced.

Amidst the pandemic, the information technology, e-commerce, artificial intelligence, and biotechnology sectors have all experienced strong growth. The adoption of M2M technologies and data analysis are becoming more dependent on cloud computing. With the emergence of financial and technical “start-ups” and the industrial Internet, industry will undergo a quantum leap in the next ten to fifteen years. The industrial sector will become more automated and robotic in this period, encouraging machine-human cooperation to create goods that reduce stress for employees and save millions of dollars.

Every aspect of life are impacted by widespread digitalization, including the job market. A generation of people who were raised surrounded by technology and gadgets is now starting to enter the workforce. These are the people who find it easy to adapt to new situations, who place more importance on their success and career than the method involved in any given activity, and who consider large revenue to be an indicator of efficacy rather than method. Employers must adopt new strategies for working with a new generation of workers.

Not only has information technology transformed the nature of the worker, but it has also altered the methods for overseeing knowledge and career advancement.

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С.Н. Суйеубаева, Э.С. Нурекенова, М.У. Рахимбердинова, В.Н. Гранецкий

Цифрлық кәсіпкерлік пандемия жағдайында еңбек нарығын трансформациялаудың нәтижесі ретінде

Аңдатпа:

Мақсаты: Пандемия жағдайындағы экономиканың цифрлық ақпараттық жүйесінің шағын және орта кәсіпкерлік субъектілерінің деңгейін дамытуға, еңбек нарығын ұлғайтуға әсері мен бейімделуін зерттеу.

Әдісі: Осы зерттеуде қолданылатын әдістер қарастырылатын мәселе бойынша теориялық әдебиеттерді зерттеуге негізделген. Статистикалық деректердің сапалық және сандық талдауы пандемия жағдайында Қазақстанның еңбек нарығының проблемаларын анықтады. Зерттеудің аналитикалық бөлімінде

республикадағы шағын және орта кәсіпкерлігін қолдаудың мемлекеттік бағдарламаларының іске асырылуына жүргізілген сыни талдау нәтижелері жүйеленді, бұл жалпы экономикалық процестерді бағалауға және жалпы қорытынды жасауға мүмкіндік берді.

Қорытынды: Зерттеу экономикалық дамудың қазіргі кезеңіндегі цифрлық кәсіпкерлікті дамытудың өзекті ерекшеліктерін ашады; теориялық деңгейде цифрлық экономика және цифрлық кәсіпкерлік тұжырымдамасының ғылыми көрсетілімі өткізілді; қазіргі еңбек нарығын трансформациялау процесіне әсер ететін жағдайлар мен факторлар анықталды; осы факторлардың Қазақстан экономикасына әсер ету дәрежесіне одан әрі зерттеу жүргізілді. Шағын және орта кәсіпкерлікті қолдау және дамыту жөніндегі мемлекеттік бағдарламалардың бейімделуі және ықпалы қарастырылды. Халықтың цифрлық сауаттылығын арттыру қажеттілігінің айтарлықтай артуы байқалады, шешім қабылдау қабілеті ойлау қабілетімен алмасады, интеллект білім деңгейі мен сапасын арттырады, яғни еңбек өнімділігін арттыруды көздейтін жұмыс күшінің құрылымын өзгертеді.

Тұжырымдама: Мақалада Қазақстанда халықты жұмыспен қамтудың жаңа нысандарын іздеудің цифрлық тетіктеріне талдау жасалған. Қазіргі экономикадағы цифрлық ортаны дамыту — оны дамытудың қажетті талабы. Бизнес-процестерге цифрлық құралдарды енгізу тәсілдерін сипаттау үшін экономикалық субъектілерді қолдауға бағытталған «Цифрлық Қазақстан» мемлекеттік бағдарламасы зерделенді. Зерттеуде цифрлық бизнестегі халықты жұмыспен қамту деңгейіне талдау жасалған. Сондай-ақ туындайтын төтенше жағдайларға байланысты жұмыспен қамтудың қазақстандық үлгілерінің трансформация дәрежесіне бағалау жүргізілді. Жұмыстың маңызды тұсы бизнесті цифрландыруды одан әрі кеңейту жөнінде ұсыныстар әзірлеу.

Кілт сөздер: цифрлық кәсіпкерлік, цифрлық экономика, кәсіпкерлік, мемлекеттік қолдау, еңбек нарығы.

С.Н. Суйеубаева, Э.С. Нурекенова, М.У. Рахимбердинова, В.Н. Гранецкий

Цифровое предпринимательство как результат трансформации рынка труда в условиях пандемии

Аннотация:

Цель: Цель настоящей статьи — изучение влияния и адаптации цифровой информационной системы экономики на развитие уровня субъектов малого и среднего предпринимательства, увеличение рынка труда в условиях пандемии.

Методы: Методы, используемые в данном исследовании, основываются на изучении теоретической литературы по данному вопросу. Возникшие проблемы рынка труда Казахстана в условиях пандемии COVID–19 были определены с помощью качественного и количественного анализа статистических данных. Результаты анализа госпрограмм поддержки малого и среднего предпринимательства в республике, позволившие оценить экономические процессы в целом и сделать общие выводы, были систематизированы в аналитической части исследования.

Результаты: В исследовании обозначены актуальные моменты развития цифрового предпринимательства в современной экономике; реализован научный подход к концепции цифровой экономики и цифрового предпринимательства в результате изучения литературных источников; выявлены факторы, оказывающие существенное влияние на трансформацию функционирующего рынка труда; определена степень влияния данных факторов на казахстанскую экономику. Для качественного изменения рынка труда авторы выявили ощутимую потребность в увеличении цифровой грамотности населения, новых навыков мышления, повышении уровня и качества образования, что, несомненно, изменит структуру кадрового потенциала и, в конечном итоге, повысит производительность труда.

Перед предпринимателями открываются уникальные возможности применить изобретения высоких технологий на практике для совершенствования бизнес-модели организаций. Таким образом, открываются следующие возможности: появление цифровых платформ как представителей принципиально новых институтов; а также функции «peer-to-peer» коммуникаций, когда вырисовываются возможности для участников связи напрямую без фирмы и рынка; появление эффективных организаций со сниженной функцией среднего менеджмента и увеличением директивного контроля.

Выводы: В данном исследовании проведен анализ цифровых механизмов, осуществляющих поиск новых возможностей для обеспечения занятости населения в экономике Казахстана. В современной экономике необходимым требованием ее успешного развития является развитие цифровой среды. Для характеристики способов внедрения цифровых инструментов в бизнес-процессы была изучена Государственная программа «Цифровой Казахстан», направленная на поддержку экономических субъектов. В исследовании был осуществлен анализ занятости населения в цифровом бизнесе. Также была проведена оценка степени трансформации казахстанских моделей занятости в зависимости от возникающих чрезвычайных ситуаций. Важным моментом работы является разработка рекомендаций по дальнейшему расширению цифровизации бизнеса.

Ключевые слова: цифровое предпринимательство, цифровая экономика, предпринимательство, государственная поддержка, рынок труда.

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