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## THE INFLUENCE OF DIGITAL BUSINESS ON THE ECONOMY AND INNOVATION DEVELOPMENT IN KAZAKHSTAN

### Abstract

The purpose of this study was to analyze the impact of digital transformation processes in business on economic performance and innovative development in the Republic of Kazakhstan. To achieve this goal, data covering 2013–2022 was used, and statistical analysis methods were applied. As part of the research methodology, an analysis of the level of digital activity of enterprises was carried out, as well as an assessment of indicators of innovation activity. Statistical models are used to study in detail the impact of digital transformation on the economy and innovation. The leading indicators that the analysis focused on were the level of use of information and communication technologies by businesses, access to Internet resources, and the participation of firms in ordering and receiving orders online. In addition, the share of innovative products in total GDP is considered. The results obtained indicate positive trends in the process of digitalization of enterprises in Kazakhstan. The impact of digital transformation on the economy, measured by GDP, was less pronounced compared to the impact on innovation. Key indicators, such as Internet access and ICT use, are identified that demonstrate the statistically significant impact of digitalization on business. The study recommends several measures, including stimulating innovation through digitalization, supporting the development of information and communication technologies, and monitoring and regulatory measures to support digital and innovative development in the Republic of Kazakhstan.

**Key words:** digital business, gross domestic product, innovative development, enterprises, information and communication technologies, Internet resources, monitoring, regulation.

### Introduction

In the modern world, digital business plays a crucial role in economic transformation and innovative development. Advances in information technology are leading to revolutionary changes in production, service provision, and interaction between companies and consumers. This digital transformation is having a profound impact on business processes, people's lifestyles and the economic structure of society.

Digitalization not only optimizes work processes and improves productivity but also stimulates the emergence of new innovative approaches to creating products, services and resource management.

In this context, it is essential to understand how digital technologies affect the economy, innovation and the further development of various business sectors.

The digital revolution has brought many changes to the global economy. Technological innovations such as the Internet, cloud computing, big data, artificial intelligence and many others have upended traditional business models and ways of doing things, which has opened up new horizons for entrepreneurship, fostered the creation of new industries and platforms and brought a higher degree of innovation to business.

Industry 4.0 covers the creation and development of digital technologies that serve as the basis for expanding the digital society. The digitalization and intensification of activity have become an integral necessity of the modern economy. It affects various areas, including industry, government, healthcare, education, logistics and many other areas [1].

The development of digital technologies has accelerated due to dramatic technological changes associated with the widespread penetration of digital innovations into everyday life. They have gained widespread acceptance and have significantly changed lifestyles. Innovations in information and communications technology have influenced people's behavior, their information needs, and the way they work and share information.

The continued advancement of digital innovations such as the cloud, mobile services and artificial intelligence will accelerate this change and provide with new opportunities and levels of prosperity, both for society and for business, that were previously thought impossible [2].

Businesses in developing countries, particularly in Kazakhstan, encounter formidable challenges that significantly jeopardize their viability and sustainability. These challenges are rooted in factors such as the ownership structure of these enterprises, limited educational resources, and restricted access of managers to market information. Addressing these issues requires a transformative approach to the survival and growth of these businesses. This research aims to explore the potential role of digital technologies as a remedy for the challenges faced by businesses in Kazakhstan, fostering an environment conducive to the emergence and success of a new generation of enterprises that actively leverage digital tools.

Since the 1950s, world countries have experienced a transition from a post-industrial mass production economy to a knowledge economy in the 1990s and ultimately to a digital economy in the 2000s. Information and communication technologies (ICT) have become the main factor of production. The formation of the digital economy includes the transfer of various types of socio-economic activities to the electronic environment of the Internet: e-commerce, e-business, e-learning, electronic media and e-government [3].

Over the past three decades, the utilization of Information and Communication Technologies (ICT) has experienced a substantial surge. The digital economy, characterized by advanced digital technologies, serves as a system of institutional categories aimed at enhancing the efficiency of social production. Digital technologies not only provide effective solutions to existing problems but also open avenues for innovative business approaches. Cloud computing, virtual reality, the Internet of Things, and mobile devices are among the digital tools reshaping traditional business models. The ongoing wave of digitalization is fundamentally altering the landscape of business and society, necessitating a reevaluation of traditional business models flooded by digital products and services.

Successful transformation in the digital age extends beyond technology adoption; it requires the development of comprehensive strategies, a conducive culture, robust infrastructure, and new business models. Industries are undergoing continuous transformation, with emerging business models holding the potential to redefine the competitive dynamics of entire sectors. The prevalence of business model innovation is evident, with a significant majority of companies modifying their approaches to some extent. The cross-functional impact of digitalization is a notable challenge, urging companies to adapt their business models to integrate evolving digital processes swiftly and translate them into tangible value and economic success.

In this context, the research endeavors to analyze the influence of digital business on the economy and innovation development in Kazakhstan. Understanding the profound changes brought about by digitalization is crucial for businesses to navigate the evolving landscape, prevent erosion of profitability, and make informed and effective decisions. The adaptation of business models to embrace rapidly evolving digital processes is imperative for ensuring sustainable growth and success in the digital era.

## **Main provisions**

The main point for conducting the study is to understand the importance of digital business for economic transformation and innovative development, both at the global level and in the context of developing countries, in this case, Kazakhstan.

First, the digitalization of business is becoming increasingly relevant in the modern world, and assessing its impact on specific countries, such as Kazakhstan, can provide critical information for making strategic decisions.

Secondly, Kazakhstan is actively striving to modernize its economy and develop innovation within the framework of the Kazakhstan-2050 strategy. Studying the impact of digital business will help determine how effective current efforts are in this direction and identify potential areas for improvement.

The third aspect is the competitiveness of Kazakhstan in the global digital economy. The study will provide insight into the current state of digital business in Kazakhstan. It will provide a basis for formulating development strategies to strengthen the country's economy and innovation potential.

## **Literature review**

Digitalization has a history dating back to the 1960s, but what makes it innovative is the pace and nature of the changes instigated by emerging technologies. Research on digital transformation has been conducted primarily by practitioners, but in the last decade, scholars have increasingly paid attention to the topic [4, 5, 6]. The ongoing transformation of industries in the digital age is forcing organizations to rethink their business models. New business models are constantly emerging with the potential to change the competitive landscape of entire industries. Seven out of ten companies are engaged in business model innovation, and up to 98% are modifying their business models to some extent [7]. There is no universal definition of digital transformation, but it represents a more complex type of technological business transformation that requires reconsidering the strategic roles of new digital technologies. Essential elements of successful transformation include leadership, customer focus, partnerships, data management skills and the use of digital technologies. However, there are barriers to successful transformation, such as legislative restrictions, information security problems and administrative challenges [8], an underdeveloped cybersecurity system, limited budgets, lack of organizational flexibility, and others [9, 10].

Digital transformation includes not only the introduction of technologies but also changes in business models, culture, and infrastructure. The main reasons for digital transformation include the desire to survive in a changing economic environment. The digital economy is based on professional and market knowledge, creativity, and a society of innovation. The most significant structural obstacle to developing digital businesses is regulatory heterogeneity in non-digital industries. Smart products, connectivity and big data analytics are expected to disrupt companies' business strategies and operational execution. When it comes to digital technologies, industrial companies are becoming active investors.

However, economy and society must make the best use of the potential of digital technologies. Technology upgrading is widespread in countries with high GDP levels among the working population. Nevertheless, as revealed, main barrier in the successful implementation of private sector digital transformation even in developed countries is that population lacks sufficient digital literacy [11].

In the context of the impact of the digital economy on traditional measures of productivity and economic growth, the focus is on the limitations of using gross domestic product (GDP) as the primary metric. Ahmad and Schreyer highlight the difficulty of accurately measuring progress in the digital economy, including the impact of the Internet, cloud services, mobile technologies, and artificial intelligence [12]. Watanabe et al., examined the concept of the "productivity paradox", which marks a decline in productivity in industrialized countries despite digital advances [13]. The authors put forward the idea that GDP and productivity indicators only sometimes fully reflect the changes caused by the digital economy, which leads to a gap between statistics and reality.

The concept of digital enterprises emphasizes the need to adapt to the modern digital landscape. Digital businesses are seeking to integrate digital innovation into their operations, transforming processes and interactions both internally and with customers. The focus on digital businesses comes from the understanding that they do not just use technology as tools, but they strive to make it an integral part of their business models. Thus, Ansong, E., & Boateng found that in less industrialized countries, social media is a key technology platform for customer engagement and value creation. While cloud computing is widespread, Big Data analytics is used by only a small percentage of businesses. The primary funding source for digital enterprise ventures is personal funds, family and friends, while angel investments and venture capital are limited. Also, using the example of enterprises in Ghana, it was revealed that most digital enterprises operate and develop with the participation of foreign enterprises, which is due to the favorable business environment created by the Government of Ghana to attract foreign investment [14]. Stunkel explored the evolution of digital technology and its impact on society based on the concepts of Lewis Mumford, who distinguishes between polytechnics and monotechics. The author states that the digital era combines elements of polytechnic and monotechic, providing freedom and variability, but also striving for standardization and efficiency. It is important to understand these dynamics in order to consciously manage the development of technology and its impact on society [15].

Some studies underline positive relationship between digitalization and economic growth, citing countries with high levels of digitalization such as European Union countries (e.g. Sweden, Malta and Estonia as examples) [16, 17] and analyzing various indicators, such as the Digital Economy and Society Index (DESI) and the IMD Digital World Competitiveness Index [18]. There was revealed a close connection between the promotion of digital market homogeneity and the training of staff in information technology skills in some European Union countries [19]. Thus, it is digitalization is important in stimulating economic development at the global level.

## Materials and methods

The literature review has revealed a predominant focus on the direct impact of business digitalization on GDP in existing studies. However, an intriguing gap in the research landscape suggests that the assessment of the impact level of business digitalization should extend beyond the conventional GDP-centric approach. While a substantial body of literature delves into the economic implications, there is a noticeable dearth of studies that explore the intricate relationship between business digitalization and factors such as innovation. Emerging perspectives posit that the true magnitude of the influence exerted by business digitalization on an economy transcends the traditional GDP-centric lens and necessitates a nuanced examination of its effects on innovation. This research endeavors to contribute to this evolving discourse by scrutinizing the multifaceted impact of business digitalization on the economy of Kazakhstan, considering not only its direct implications on GDP but also its intricate interplay with innovation as a crucial determinant of economic growth and sustainability. There were developed following hypotheses:

### Hypothesis A

Hypothesis 0: Business digitalization has significant impact on the economy of Kazakhstan.

Hypothesis 1: Business digitalization has insignificant impact on the economy of Kazakhstan.

### Hypothesis B

Hypothesis 0: Business digitalization has significant impact on the Innovation.

Hypothesis 1: Business digitalization has insignificant impact on the Innovation.

Business digitalization, innovation and economy were measured by following indicators presented in the table 1 (p. 421).

The selected indicators provide a comprehensive picture of the impact of business digitalization on the economy and innovation in Kazakhstan and cover period 2013–2022 [20]. In order to conduct the analysis SMART PLS 4. software was used. Structural equation modeling, specifically Partial Least Squares Regression (PLS-SEM), enables the assessment of intricate models featuring numerous constructs and indicators, particularly when the analysis leans towards predictiveness. This approach offers ample flexibility concerning the initial data and specifications of the constructs' relationships with indicator variables [21].

Table 1 – Variables measurement

No	Indicators	Coding
Business digitalization – independent variable		
1	Share of organizations using computers	Firms%_usingICT
2	Share of organizations with access to the Internet	Firms%_accessInternet
3	Share of organizations known Internet resources	Firms%_Internet Res
4	Share of organizations receiving orders for goods and services on the Internet	Firms%_Receiving_OnlineOrders
5	Share of organizations ordering goods and services via the Internet	Firms%_OrderingOnline
Innovation – dependent variable		
6	Level of innovation activity	Innovation_Active_Business
7	Share of innovative products (goods, services) in relation to GDP, %	InnovationProduct%_GDP
	Volume of innovative products (goods, services)	Volume_InnovationProduct
Economy – dependent variable		
8	Gross domestic product	GDP
Note : Complied by the authors.		

A high proportion of organizations using computers indicates widespread adoption of technology, which, if practical, can contribute to increased productivity. Access to the Internet and knowledge of Internet resources indicate the connection of business with global technologies. The increase in the share of organizations receiving and ordering online reflects active participation in digital business processes. Indicators of innovation activity and the share of innovative products in the economy can indicate the ability of companies to introduce new ideas and technologies. Thus, the selected indicators cover both technological and economic aspects, providing a comprehensive analysis of the impact of digitalization on the economy and innovation in Kazakhstan.

### Results and discussion

Digital ecosystems, such as banking, have emerged in Kazakhstan. In 2022, the Republic of Kazakhstan took 8th place in the world in the development of online services for citizens, and according to the results of a study of the Digital Intelligence Index platform, conducted among the 90 largest countries in the world, Kazakhstan took 20th place in the speed of digitalization development and entered the group of the most promising countries in terms of further development of digital well-being of citizens.

In the Figure 1 there is provided dynamics on digital business in Kazakhstan from 2013 to 2022.

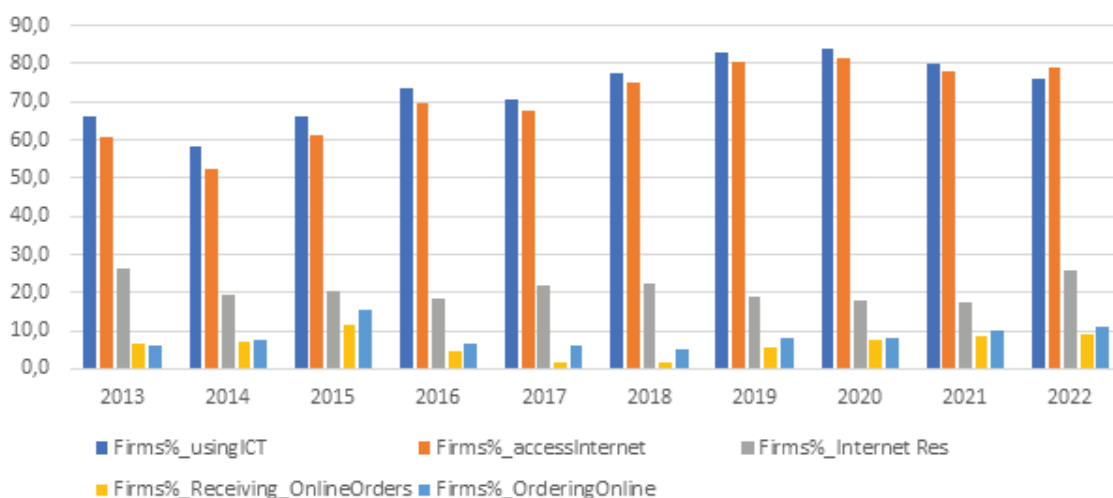


Figure 1 – Dynamics for business digitalization

Note: Complied by the source [20].

Analysis of data on the percentage participation of firms in the use of information and communication technologies (ICT) and access to Internet resources in the period from 2013 to 2022 revealed positive trends in the digitalization of enterprises in Kazakhstan. The percentage of firms using ICT is gradually increasing from 66.2% in 2013 to 75.9% in 2022, indicating widespread adoption of information technology and likely improved efficiency of business processes. Firms' access to the internet is also increasing, from 60.7% in 2013 to 79.1% in 2022, indicating increased internet connectivity, which facilitates information sharing and improves communications. The percentage of firms with access to online resources fluctuates but is generally growing, reaching 25.6% in 2022. These changes may be related to technological trends and companies' strategic decisions. There is a steady increase in the digital activity of firms in Kazakhstan, which indicates their adaptation to modern technological requirements and the desire to increase competitiveness in the digital era.

In the figure 2 there is provided dynamics for innovation in Kazakhstan from 2013 to 2022.

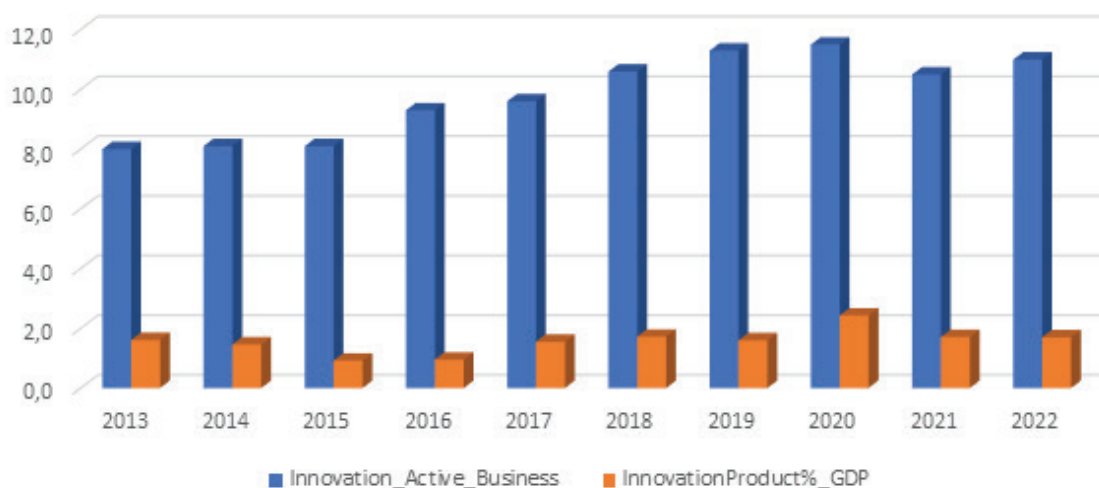


Figure 2 – Dynamics for innovation

Note: Compiled by the source [20].

Analysis of data over the past nine years indicates the dynamics of the level of innovative business activity and the share of innovative products from GDP in Kazakhstan. The level of business innovation activity has gradually increased, from 8.0% in 2013 to 11.0% in 2022. This indicates the growing willingness of enterprises to introduce innovations into their activities, which can help improve their competitiveness and efficiency. On the other hand, the dynamics of the share of innovative products in GDP are more complex. After an initial reading of 1.61% in 2013, it dropped to 0.92% in 2015 but gradually increased, peaking at 2.43% in 2020. There was a slight decline in subsequent years, reaching 1.70% in 2022. An increase in the level of innovative activity of business indicates positive dynamics in the development of enterprises. In contrast, fluctuations in the share of innovative products from GDP may reflect changes in the economy's structure and the efficiency of innovation processes. It is crucial to monitor these indicators further to understand trends and formulate strategies to support innovation in the economy of Kazakhstan. Next in the figure 3 (p. 423), there are presented the results for the model analysis.

The analysis reveals that the model linking business digitalization to GDP has a coefficient of determination (R-squared) of 0.387. This coefficient reflects the proportion of variability in GDP that can be explained by business digitalization. A value of 0.387 indicates that approximately 38.7% of the variability in Kazakhstan's GDP can be attributed to the impact of business digitalization, while the remaining 61.3% may be influenced by other factors not considered in this study.

In the case of the model connecting business digitalization to innovation, the R-squared is 0.799. This high value suggests that around 79.9% of the variability in innovation can be explained by the influence of business digitalization. Therefore, this model provides a robust explanation of how business digitalization affects the level of innovation in the economy of Kazakhstan.

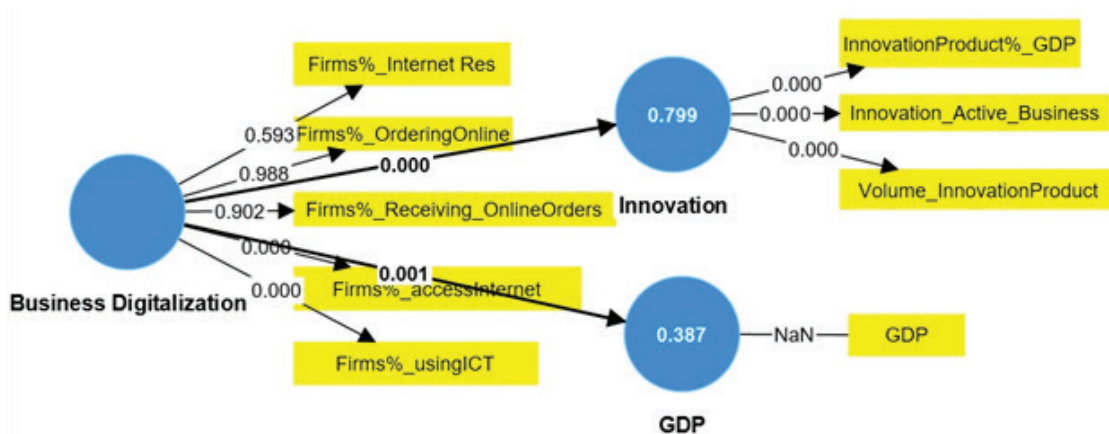


Figure 3 – The impact of business digitalization on economy and innovation

Note: Compiled by the authors.

In summary, the impact of business digitalization on GDP is less explained by the model (R-squared = 0.387) compared to its influence on innovation (R-squared = 0.799). This discrepancy may imply that the effect of business digitalization is more pronounced in the realm of innovation than in the overall economic output, possibly reflecting the fact that innovations often necessitate the adoption of new technologies and digital practices.

Nevertheless, it is important to provide a closer look at the results obtained. Next, there are provided results for path coefficients in table 2.

Table 2 – Path coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Business Digitalization -> GDP	0.622	0.711	0.182	3.412	0.001
Business Digitalization -> Innovation	0.894	0.903	0.098	9.114	0.000

Note: Compiled on the basis of calculations.

The analysis indicates a positive correlation between business digitalization and both Gross Domestic Product (GDP) and innovation in Kazakhstan.

The results of the analysis of the impact of business digitalization on GDP show the following. The original sample (O) demonstrates a positive coefficient of 0.622. The sample mean (M) is 0.711, with a standard deviation (STDEV) of 0.182. The high T statistics (|O/STDEV|) of 3.412, along with a low P value of 0.001, signal a statistically significant positive effect on GDP. Typically, a P value below the conventional alpha level of 0.05 is considered statistically significant. In this case, the observed P value is lower, further strengthening the confidence in the positive impact of business digitalization on GDP.

Turning to the impact on Innovation, the original sample (O) displays a positive coefficient of 0.894. The sample mean (M) is 0.903, with a standard deviation (STDEV) of 0.098. The high T statistics (|O/STDEV|) at 9.114, coupled with a P value of 0.000, affirm a statistically significant positive influence on innovation. Similar to the GDP analysis, the low P value is indicative of statistical significance, and in practice, a P value below 0.05 is commonly accepted.

Next, there are provided results for outer loadings in table 3 (p. 424).

Table 3 – Outer loadings

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Firms%_Internet Res <- Business Digitalization	-0.234	-0.180	0.438	0.535	0.593
Firms%_OrderingOnline <- Business Digitalization	0.008	0.124	0.523	0.015	0.988
Firms%_Receiving_OnlineOrders <- Business Digitalization	-0.057	0.018	0.463	0.123	0.902
Firms%_accessInternet <- Business Digitalization	0.995	0.947	0.108	9.218	0.000
Firms%_usingICT <- Business Digitalization	0.989	0.905	0.139	7.113	0.000
GDP <- GDP	1.000	1.000	0.000	n/a	n/a
InnovationProduct%_GDP <- Innovation	0.818	0.809	0.125	6.551	0.000
Innovation_Active_Business <- Innovation	0.948	0.946	0.062	15.291	0.000
Volume_InnovationProduct <- Innovation	0.960	0.961	0.047	20.322	0.000

Note: Compiled on the basis of calculations.

The analysis of the presented data indicates varying degrees of impact of business digitalization on different facets within organizations. For Firms%\_Internet Res, the observed result of -0.234 does not exhibit a statistically significant impact, given the higher P-value of 0.593, which exceeds the conventional alpha level of 0.05. Similarly, Firms%\_OrderingOnline and Firms%\_Receiving\_OnlineOrders show non-significant impacts, with P-values of 0.988 and 0.902, respectively. In contrast, the indicators Firms%\_accessInternet and Firms%\_usingICT reveal statistically significant and positive impacts. The high T statistics (9.218 and 7.113, respectively) coupled with the very low P-values (both 0.000) suggest a substantial and statistically robust positive influence of business digitalization.

Over the course of several data presented, the indicators “Firms%\_accessInternet” and “Firms%\_usingICT” demonstrate the success and characteristic role in the digitalization of business. Digitalization of business, especially with greater access to the Internet and increased use of ICT, has the potential to boost the efficiency and competitiveness of organizations. Improved connectivity and technology capabilities can drive productivity gains, market expansion and drive business process innovation. Thus, these two indicators are identified as key aspects of the positive impact of business digitalization on organizations in this analysis.

The results of the research support existing studies that digital business has indirect impact on the economy development. Moreover, authors suggested, that the impact of business digitalization should be assessed through other factors among which innovation stands out as the primary factor.

The Hypothesis A1: Business digitalization has insignificant impact on the economy of Kazakhstan is supported. The Hypothesis B0: Business digitalization has significant impact on the Innovation is supported.

## Conclusion

Current study was aimed at analyzing the impact of digital business on the development of innovation and economy in Kazakhstan. The results of the analysis supported the hypotheses Hypothesis A1 and Hypothesis B0. The results revealed that digital business development has significant impact on the development of innovation in Kazakhstan and insignificant impact on the economy development. The results showed that the access of enterprises to the internet and the application of online ICT contributes to the economy development as well as innovation solutions. On the contrary, the activity



of firms in online trade and provision of functional tasks through internet resources has insignificant impact of the economy or innovation development.

The main limitation to the study are reflected in the lack of updated information on the level of digitalization of local businesses and the share of digital business, production to the GDP of the country.

Recommendations include stimulating innovation through digitalization, supporting ICT development, monitoring and regulation, and long-term planning to emphasize digital practices that promote innovation. All this can serve as the basis for developing strategies to stimulate digital and innovative development in the country.

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## **ВЛИЯНИЕ ЦИФРОВОГО БИЗНЕСА НА ЭКОНОМИКУ И ИННОВАЦИОННОЕ РАЗВИТИЕ В КАЗАХСТАНЕ**

### **Аннотация**

Цель данного исследования – анализ влияния процессов цифровой трансформации в бизнесе на экономические показатели и инновационное развитие в Республике Казахстан. Для достижения этой цели использованы данные за 2013–2022 гг. и применены методы статистического анализа. В рамках методологии исследования проведен анализ уровня цифровой активности предприятий, а также оценка показателей инновационной активности. Статистические модели используются для детального изучения влияния цифровой трансформации на экономику и инновации. Ведущими индикаторами, на которых сосредоточился анализ, стали уровень использования предприятиями информационных и коммуникационных технологий, доступ к интернет-ресурсам, а также участие фирм в размещении и получении заказов в режиме онлайн. Кроме того, учитывается доля инновационной продукции в общем объеме ВВП. Полученные результаты свидетельствуют о положительных тенденциях в процессе цифровизации предприятий Казахстана. Влияние цифровой трансформации на экономику, измеряемое ВВП, было менее выраженным по сравнению с влиянием на инновации. Определены такие ключевые показатели, как доступ в Интернет и использование ИКТ, которые демонстрируют статистически значимое влияние цифровизации на бизнес. В исследовании рекомендуется ряд мер, включая стимулирование инноваций посредством цифровизации, поддержку развития информационных и коммуникационных технологий, а также меры мониторинга и регулирования для поддержки цифрового и инновационного развития в Республике Казахстан.

**Ключевые слова:** цифровой бизнес, валовой внутренний продукт, инновационное развитие, предприятия, информационно-коммуникационные технологии, интернет-ресурсы, мониторинг, регулирование.

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## ҚАЗАҚСТАНДАҒЫ ЭКОНОМИКА МЕН ИННОВАЦИЯЛЫҚ ДАМУҒА ЦИФРЛЫҚ БИЗНЕСТІҢ ӘСЕРІ

### Андатпа

Бұл зерттеудің мақсаты бизнестегі цифрлық трансформация процестерінің Қазақстан Республикасындағы экономикалық көрсеткіштерге және инновациялық дамуға әсерін талдау. Осы мақсатқа жету үшін 2013–2022 жж. арналған деректер пайдаланылды және статистикалық талдау әдістері қолданылды. Зерттеу әдістемесі шеңберінде кәсіпорындардың цифрлық белсенділік деңгейін талдау, сондай-ақ инновациялық белсенділік көрсеткіштерін бағалау жүргізілді. Статистикалық модельдер цифрлық трансформацияның экономика мен инновацияға әсерін зерттеу үшін қолданылды. Кәсіпорынның ақпараттық-коммуникациялық технологияларды пайдалану деңгейі, интернет-ресурстарға қолжетімділік, фирмалардың онлайн режимінде тапсырыстарды орналастыру мен қабылдауға қатысуы талдаудағы басты көрсеткіштер болды. Сонымен қатар жалпы ішкі өнімдегі инновациялық өнімнің үлесі ескерілген. Алынған нәтижелер Қазақстандағы кәсіпорындарды цифрландыру үдерісіндегі оң үрдістерді көрсетеді. ЖІӨ-мен өлшенетін цифрлық трансформацияның экономикаға әсері инновацияларға әсер етумен салыстырғанда азырақ байқалды. Цифрландырудың бизнеске статистикалық маңызды әсерін көрсететін Интернетке қол жеткізу және АКТ пайдалану сияқты негізгі көрсеткіштер анықталды. Зерттеу цифрландыру арқылы инновацияларды ынталандыру, ақпараттық-коммуникациялық технологияларды дамытуды қолдау, Қазақстан Республикасында цифрлық және инновациялық дамуды қолдау бойынша мониторинг және реттеу сияқты бірқатар шараларды ұсынады.

**Тірек сөздер:** Цифрлық бизнес, жалпы ішкі өнім, инновациялық даму, кәсіпорындар, ақпараттық-коммуникациялық технологиялар, интернет-ресурстар, мониторинг, реттеу.