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SOCIAL EFFECTIVENESS OF DIGITALIZATION GOVERNANCE IN KAZAKHSTAN

Purpose. This study aims to assess the social effectiveness of government management of digitalization and examine how public policies and regulatory measures in digital transformation affect the standard of living and social well-being of the population.
Design/methodology/approach. The research applies a systematic and comparative approach based on the collection, processing, and analysis of empirical data. Statistical methods are used to identify relationships between the development of digitalization and selected social indicators, while visual interpretation facilitates the assessment of changes across key areas of social development.
Findings. The findings demonstrate a positive relationship between the effectiveness of government management of digital transformation and improvements in major social outcomes. Effective digital governance contributes to greater accessibility and quality of public services, improved healthcare and educational opportunities, and more efficient social support mechanisms. The results also indicate that the social benefits of digital transformation depend not only on technological development but also on the quality of public governance, regulatory frameworks, and implementation mechanisms.
Originality. The originality of the study lies in viewing digitalization not merely as a technological or economic process, but as an important instrument of socially oriented public governance. The study provides an integrated perspective on the social effectiveness of digitalization governance and offers practical recommendations for strengthening their contribution to sustainable social development.
Keywords: state governance, public administration, social efficiency, digitalization, sustainable social development.

Introduction

Today digital technologies are increasingly permeating all spheres of public life, significantly changing the requirements for public administration. Digitalization today requires targeted public administration and the alignment of technological changes with the social sphere. In this context, the social effectiveness of public governance of digitalization is demonstrated by the extent to which public policies, strategies, and management decisions in the area of digital transformation actually improve the lives of society. This applies not only to the introduction of new services, but also to improving the quality of life of citizens, expanding access to public services, strengthening social inclusion, and reducing digital inequality. The success of digital initiatives is determined not only by the level and the speed of integration, but by the ability of public institutions to structure these processes with due regard for public interests and social responsibility.

Kazakhstan is a country with high rates of socio-economic development, and digitalization is a key priority of the national strategy. In recent years, the country has implemented numerous programs aimed at developing digitalization and expanding the range and accessibility of electronic services. However, the main challenge lies not in the implementation of digital solutions themselves, but in how effectively the state can manage these changes, regulate them, and assess their impact on society. Socially effective public governance of digitalization assumes that digitalization contributes to improved access to education, healthcare, social support, and opportunities for citizen participation in public and political life, especially for socially vulnerable groups.

This approach emphasizes that digitalization requires not just technical implementation but also

thoughtful planning, coordination, and monitoring by the state to ensure that technologies serve society and meet its needs.

On one hand, digitalization can streamline administrative procedures, reduce bureaucratic barriers, and enhance transparency. On the other hand, without deliberate governance strategies, digitalization can exacerbate existing inequalities, creating disparities between urban and rural populations, educated and less-educated citizens, and technologically literate and digitally excluded groups. Therefore, evaluating the social effectiveness of state governance involves analyzing the design, implementation, and outcomes of digital policies, as well as their alignment with broader societal goals such as equity, social cohesion, and sustainable development.

In Kazakhstan, several initiatives reflect the state's commitment to managing digitalization strategically. Programs such as e-government portals, digital health systems, and online education platforms are not only technological interventions but also components of a broader governance framework intended to enhance social welfare.

Most existing research focuses on digitalization processes themselves, while research on the social effectiveness of state governance of digitalization is limited. This study aims to examine how effectively the state manages digitalization processes in Kazakhstan from a social perspective. It examines how government strategies and administrative actions impact citizens' access to services, their participation in society, and overall quality of life. It also analyzes issues related to digital inequality, institutional capacity, and policy coordination. The study helps understand how the government can reconcile technological progress with principles of social justice, inclusiveness, and sustainable development.

Literature review

Empirical studies confirm the positive impact of digitalization on the social sphere. For instance, research conducted in EU countries demonstrates that a high level of digital transformation contributes to achieving sustainable development goals and reducing social disparities. Specifically, Finland, the Netherlands, and Denmark exhibit high levels of social sustainability in their digital transformation efforts, reflected in improved access to education, healthcare, and other essential social services (Social sustainability of digital transformation, 2023).

The study of public administration as a field of scientific inquiry has been extensively explored in both international and domestic literature. Classical and contemporary approaches to the theory and practice of public administration are presented in the works of scholars such as Osborne D. and Gaebler T., Ongaro E., Ferlie E., Argynades D., Peters G., and Pierre J., among others, with a focus on the transformation of public administration, civil service efficiency, and emerging management paradigms.

In the post-Soviet context, foundational research on the theory of public administration has been conducted by Atamanchuk G., Sansyzbayeva G., Mukhtarova K., Ashirbekova L., Bokizhanova F., Syzdykova K., Kaliakparova G., Seitova A., Kazbekov B., Bimendieva L., Nurmanova B., Ahmetova Z., Zhatkanbaev E. and others. These works provide a methodological and institutional foundation for understanding the specifics of public administration in Kazakhstan and Central Asia.

A separate line of research focuses on the impact of digitalization on contemporary society. Key international authors in this area include Brennen & Kreiss, Tornhill & Van Dijk, Gartner (2025), and Pirttimäki, who emphasize that digitalization fundamentally reshapes interactions between the government and society, creating new forms of social participation and access to services.

In Kazakhstan, aspects of digital transformation and the digitalization of social processes have been examined in studies by Tovma N., Akimbaeva K., Kyzdarbekova A., Kupenova Zh., Alibekova G., Bapieva M., Maltabarov A., Sarybaev M., Kazieva A., Shalbaeva Sh., Kadyrova K. and others. Their research addresses issues such as digital inequality, the implementation of e-services, legal regulation of digital platforms, and institutional changes in the context of digitalization.

However, despite the broad scope of research, the topic of state governance of digitalization as an independent governmental function, as well as the analysis of its social effectiveness, remains insufficiently explored in the literature. Most studies focus on digitalization in specific sectors (e.g., e-government, digital healthcare, digital education), but there is a lack of a systematic examination of how the government manages these processes and the social outcomes that result.

Therefore, there is an objective need for a comprehensive analysis of the social effectiveness of the state governance of digitalization. The aim of this article is to analyze the features of state governance of digitalization processes and to formulate recommendations for enhancing the social effectiveness of these administrative practices.

Methodology

The research involved a thorough content analysis of Kazakhstan's digital institutional and legal framework, government initiatives, legislative regulations, and strategic documents, including the "Digital Kazakhstan" program, the Concept of Digital Transformation, and the development strategy for the information and communication technology sector and cybersecurity for 2023–2029 (2023). This method enabled the identification of the main directions of state policy in digitalization and allowed for an assessment of its social focus.

A comparative study was carried out to contrast Kazakhstan's digital governance experience with that of other countries, including the Russian Federation, South Korea, and Singapore, which helped to reveal both common patterns and distinctive features of national digital transformation strategies.

To assess the social impact of digitalization, the analysis utilized statistical information and official reports from the Ministry of Digital Development, the Statistics Committee of the Republic of Kazakhstan, and data from the eGov.kz platform, supplemented by research and analytical publications from international organizations such as the UN, the World Bank, and the OECD. These materials provided a clear view of the population's access to digital public services and the of service provision.

By integrating these approaches, the study achieved a systematic and comprehensive evaluation of how state management of digitalization affects social outcomes and contributes to the overall social well-being of the population.

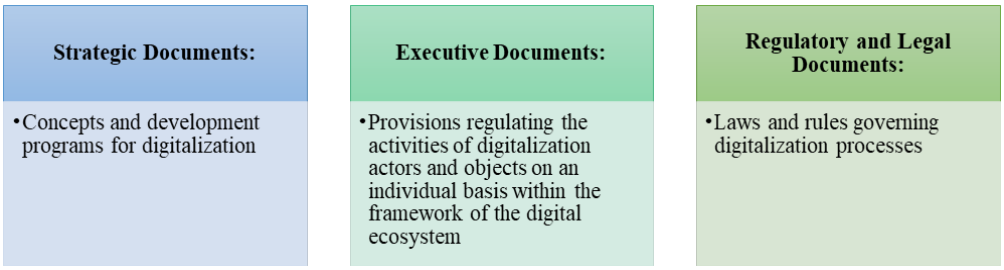
Results and discussion

The establishment and advancement of the digital institutional and legal framework in Kazakhstan are implemented through the adoption and execution of a set of core documents that outline strategic priorities, operational mechanisms, and regulatory foundations for digitalization. These documents provide a framework for the digital transformation of public administration, the economy, and the social sector, ensuring coordination among governmental bodies and private stakeholders.

Digital governance in Kazakhstan is organized as a multi-level system of documents, which can be classified according to their functional role (Figure 1).

Figure 1

The Document System for government administration of digitalization in Kazakhstan



Source: compiled by the author

Strategic documents define long-term directions and priorities for state policy in digitalization. Examples of strategic documents include state programs and concepts for the development of digitalization. Public governance of digitalization in Kazakhstan is implemented primarily through addressing the objectives defined in strategic documents.

Executive documents govern the practical implementation of digital initiatives. Their main goal is to ensure coordinated and effective management of digital projects and regulate interactions between the various stakeholders involved in digital processes.

At the same time, ministries and other government agencies develop digitalization plans. These plans define the operating procedures for digital platforms, information systems, and the provision of electronic services and may contain standards for the implementation of information systems or requirements for the provision of electronic services.

Laws are the highest form of legal authority, in the field of digitalization, these include the Law "On Informatization," the Law "On Personal Data," the Law "On Electronic Documents and Electronic Digital Signatures," and others.

Other by-laws/regulatory acts in the field of digitalization include government decrees and ministerial orders that clarify laws and establish more detailed rules, for example, regarding the use of digital platforms, information security etc.

These regulatory documents ensure the legitimacy of digitalization processes, protect the rights and interests of citizens and businesses, and create mechanisms for accountability in cases of violations.

Thus, the coordinated interaction of strategic, executive, and regulatory documents forms an integrated framework for state management of digitalization in Kazakhstan, aimed at increasing social effectiveness and supporting the growth of the digital economy.

An analysis of the institutional and legal framework reveals several important observations about the current state and future prospects. First, uneven development of system components: Certain elements of the institutional and legal framework advance faster than others. Strategic documents and programs are adopted actively, but their implementation and regulatory support often lag, creating gaps in coordination and hindering effective digital governance. Second, variation in concepts and definitions: The fields of digitalization and digital transformation use diverse terms and definitions, causing ambiguity in legislation interpretation, project implementation, and interagency coordination. The absence of a unified terminology complicates consistent policy formation. Third, lack of systematization and coherence: Despite numerous regulatory documents, the overall framework lacks alignment. Individual acts are sometimes adopted without considering connections to broader strategies, leading to overlaps, legal inconsistencies, and reduced administrative efficiency. Last one is insufficient regulation of online entrepreneurship: Legal frameworks for digital business activities remain incomplete, particularly for emerging models such as platform-based work, e-commerce utilizing blockchain, and other digital economy activities. This gap creates risks for market participants, discourages investment, and slows the growth of digital entrepreneurship.

An analysis of the institutional and legal system for public governance of digitalization in Kazakhstan suggests the need for a more systematic and consistent approach to the development of digital legislation.

The success of Kazakhstan in digital sphere can be measured in international digitalization rankings. In 2024, the country ranked 24th out of 193 countries in the United Nations E-Government Development Index (EGDI) (2024). This is four places higher than the previous assessment. In the global Online Service Index (OSI) (2025), Kazakhstan entered the top ten, ahead of China and Germany.

The table 1 below shows the dynamics of Kazakhstan's position in digitalization rankings from 2022 to 2024.

Table 1
Position of Kazakhstan in digitalization rankings, 2022–2024

e-Government Development Index, EGDI	28 out of 193 countries	26 out of 193 countries	24 out of 193 countries	24 out of 193 countries
Online Service Index, OSI	The indicator reached 0.9615 out of 1	The indicator reached 0,9344 out of 1	The indicator reached 0,93903 out of 1. 10 out of 193 countries	The indicator reached 0,93903 out of 1. 10 out of 193 countries
Network Readiness Index, NRI	61 out of 130 countries	58 out of 134 countries	61 out of 133 countries	65 out of 127 countries
ICT Development Index	51 out of 170 countries	44 out of 170 countries	42 out of 170 countries	47 out of 164 countries
Global Innovation Index	83 out of 132 countries	81 out of 133 countries	78 out of 133 countries	81 out of 139 countries
Global Cybersecurity Index	31 out of 181 countries	31 out of 176 countries	31 out of 194 countries	35 out of 194 countries

Source: International Rankings (OECD, 2024).

The examination of Kazakhstan's positions in global digitalization indices for 2022-2025, as shown in the table 1 above, reflects steady advancement in the development of digital infrastructure and the delivery of public services. To further improve the social impact of digital governance, Kazakhstan could benefit from studying and adapting best practices from countries recognized as leaders in digital administration. In particular, analyzing the experiences of the Russian Federation, South Korea, and Singapore nations achieving high rankings in the UN E-Government Development Index (EGDI) and the Digital Economy and Society Index (DESI) – allows identification of effective strategies and tools for promoting digitalization. The following overview of their policies, achievements, and social effects provides valuable guidance for Kazakhstan's ongoing digital transformation.

The Russian Federation advances its digital agenda through the national program "Digital Economy of the Russian Federation", approved by Government Decree No. 1632-r in 2017.

A key component of the program is the federal initiative "Digital Public Administration," aimed at digitizing government services, streamlining interactions between agencies, and implementing big data technologies. The primary tool for achieving the program's goals is the unified portal "Gosuslugi." Launched in 2011, the portal has provided Russian citizens with access to a wide range of government services for 15 years. According to the Russian Ministry of Digital Development, the portal currently has over 109 million registered users, including over 11 million active users who use it daily. The portal has enabled 100% digitalization of socially significant services and provided approximately 340 million electronic services (Reuters, 2024).

Despite progress, challenges persist, including uneven digital infrastructure development in rural areas. Cybersecurity has also become a priority, with planned government investments exceeding 60 billion rubles (over USD 660 million) for modernizing internet monitoring systems between 2025 and 2030 (Reuters, 2024).

South Korea is widely regarded as a leader in digital government. Its digitalization strategy is coordinated by the Ministry of the Interior and Safety (MOIS) and the National Information Society Agency (NIA). In 2023, South Korea ranked first in the OECD Digital Government Index, achieving the highest overall score of 0.935, leading in areas such as data orientation, transparency, proactive governance, and platform government (Digital government, 2025). According to the World Bank GovTech Maturity Index 2022, the country is also among the most advanced in providing digital public services.

Internet penetration in South Korea consistently exceeds 97%, with over 96% of citizens regularly using digital government platforms. A notable innovation is the intelligent assistant Guppi, an AI integrated into the Digital Platform Government initiative. In 2023, Guppi served over 16 million users, roughly one-third of the national population. OECD assessments report that citizen satisfaction with administrative services is approximately 75%, well above the organizational average.

Singapore has pursued an extensive digital transformation strategy through the Smart Nation initiative, launched in 2014. Oversight is coordinated by GovTech with active involvement from the Ministry of Communications and Information. A core element is SingPass, the national digital identity system, providing secure access to over 1,400 public and private online services. By 2023, more than 5 million users were registered, with nearly 90% of government transactions conducted digitally. The SingPass mobile app is actively used by approximately 4.2 million citizens (GovTech Singapore, 2025).

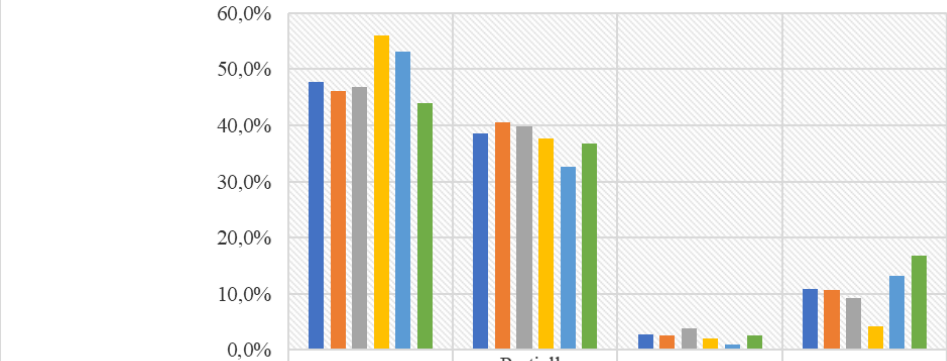
Another key tool, the LifeSG application, integrates services across healthcare, education, employment, and social support, enabling citizens to interact with government services through a single digital interface. The app has around 250,000 active users and continues to expand its functionality. Recent surveys indicate citizen satisfaction with digital government services in Singapore is about 84%, with business satisfaction near 79%, reflecting strong trust and convenience in the digital infrastructure.

These examples demonstrate varied approaches: Russia emphasizes a platform-based model, South Korea relies on integrated e-government systems, and Singapore focuses on citizen-centered smart governance. For Kazakhstan, elements of these models–such as regional engagement from Russia, interagency data sharing from South Korea, and public-private collaboration from Singapore–could strengthen the social impact of digitalization. Key priorities include expanding digital infrastructure, improving digital literacy, and ensuring inclusive access to services, building upon the lessons learned from these countries.

Alongside these international lessons, assessing domestic perceptions of digital transformation is essential. The social effectiveness of digital governance should be measured not only through institutional changes but also by citizen satisfaction, engagement, and trust in digital services.

In this context, results from a population quality-of-life survey conducted by the Bureau of National Statistics of ASPiR of Kazakhstan are particularly informative. The survey involved 12,000 respondents aged 15 and older, providing a representative overview of public attitudes toward digitalization across different regions (Questionnaire, 2024). These data serve as an empirical foundation for evaluating how government digital policies genuinely contribute to the social well-being of the population (Figure 2).

Figure 2
Citizens' Assessment of Public Services in the Republic of Kazakhstan, 2024



	Satisfied	Partially satisfied	Not satisfied	Unsure
"Government for Citizens"	47,8%	38,5%	2,8%	10,9%
Tax Service	46,2%	40,6%	2,6%	10,6%
Police	46,9%	39,9%	3,9%	9,3%
Healthcare Centers	56,1%	37,6%	2,1%	4,2%
Fire Service	53,2%	32,6%	1,0%	13,2%
Other Public Services	43,9%	36,8%	2,5%	16,8%

Source: compiled by the author based on source (Questionnaire, 2024).

The results reveal an overall improvement in public perceptions of the quality of government services, which may be considered an important indicator of the social effectiveness of digitalization. Although there are government institutions and services with which citizens express dissatisfaction, the overall figures are higher than in the previous assessment. This trend indicates an increase in citizen trust in the digital services they receive. However, to maintain this trend, continued efforts to improve the quality, accessibility, and security of digital services are necessary.

The results of this study demonstrate that public governance of digitalization in Kazakhstan is demonstrating positive trends, both in terms of institutional mechanisms and public perception of digital services. Rising levels of satisfaction with digitally delivered public services indicate stronger trust in government bodies and improved access to services, particularly in critical areas such as taxation, healthcare, and public safety. According to data from the Bureau of National Statistics of ASPiR, in 2023 more than 46% of respondents reported satisfaction with the work of tax authorities and law enforcement agencies, reflecting an increase of 3–4 percentage points compared to the previous year (Questionnaire, 2024).

At the same time, a number of persistent challenges continue to limit the realization of digitalization's full social potential. One of the key issues is the uneven pace of digital transformation across regions and social groups. As noted by the International Telecommunication Union, disparities in access to digital technologies and insufficient digital skills remain significant obstacles to inclusive digital development in many developing countries, including Kazakhstan (Othcet, 2024).

Another important issue relates to the regulatory and legal framework. Although a wide range of policy documents governing digitalization has been adopted, there is still no integrated approach to evaluating the social effectiveness of digital initiatives. Existing assessment systems primarily prioritize technological indicators, such as internet penetration,

the number of online services, and e-government rankings. However, insufficient attention is paid to social outcomes, such as reducing administrative barriers, engaging vulnerable groups, and expanding digital inclusion.

International experience demonstrates that high levels of social effectiveness in digitalization are typically achieved through a comprehensive model that combines strong institutional coordination, engagement of the private sector, and continuous feedback from citizens. Countries such as South Korea, Singapore, and Russia illustrate that digital success depends not only on technology but also on governance practices. In particular, Singapore applies a citizen-oriented approach, in which digital services are designed around everyday needs of different population groups and are supported by regular monitoring of user satisfaction (Nam & Pardo).

Strengthening the social impact of digital transformation in Kazakhstan should include the development of evaluation mechanisms that prioritize social outcomes, including initiatives to improve digital literacy, especially in rural areas and among older age groups. At the same time, to foster a more inclusive and sustainable digital environment, investments in digital infrastructure and support for local digital projects are also necessary. Therefore, to improve the social effectiveness of public governance of digitalization, a transition to a governance model based on the principles of inclusiveness, public trust, and a clear focus on the needs of society is essential.

Conclusion

Against the backdrop of the accelerating digital transformation of contemporary society, examining the social effectiveness of state management of digitalization becomes especially relevant. The analysis carried out shows that the Republic of Kazakhstan is gradually forming a solid institutional framework for digital transformation, grounded in strategic planning documents, legislative regulation, and administrative instruments. The country demonstrates steady advancement in the development of digital infrastructure and the expansion of electronic public services, which is confirmed both by international comparative assessments and by the results of population surveys.

Based on the outcomes of this study, a set of recommendations is proposed to strengthen the social dimension of government administration of digitalization in Kazakhstan:

- Introduce a unified national framework for evaluating the social impact of digital initiatives. Such a framework should go beyond measuring service availability and technical coverage, placing emphasis on social outcomes, including improvements in quality of life for different population groups, with particular attention to vulnerable categories such as low-income households, elderly citizens, and residents of rural areas.

- Enhance institutional coordination in digital policy implementation. Greater alignment between strategic, operational, and regulatory documents is required to reduce legal inconsistencies and overlapping functions among public authorities.

- Ensuring citizen participation in assessing the quality and accessibility of digital services. This will allow for regular feedback from service users and incorporate it into decision-making and future developments. Citizen feedback can be collected through online surveys and digital feedback platforms.

- Developing digital skills. Educational programs must be developed for various population groups, including students, senior citizens, entrepreneurs, and government employees. Such initiatives should combine online and offline learning, mobile learning apps, etc.

- Partnership with businesses. Government agencies should encourage digital initiatives and collaborate with technology companies and startups capable of providing socially significant digital solutions, such as distance learning, telemedicine, and digital social assistance.

- Developing digital and telecommunication infrastructure. To achieve this goal, further investment in digitalization in regions is necessary. In rural areas of the country access to digital technologies and e-services is still limited.

- Establishing a specialized competence center in state governance of digitalization. This center can perform coordinating and methodological functions, facilitating the exchange of practical experience between government agencies, the development of coordinated approaches to assessing the quality of digital public services, and promoting the professional development of civil servants involved in socially oriented digitalization processes.

In the long term, the digital transformation of the public administration system should be viewed not as a technical upgrade, but as an element of strategic social development aimed at ensuring equity, expanding inclusiveness, and strengthening sustainability. Practical implementation of the proposed recommendations will enable the Republic of Kazakhstan not only to improve its position in international digital rankings but also to move closer to the formation of a truly human-centered model of digital transformation.

Conflict of Interest

The author declares no conflict of interest.

Author Contributions

Conceptualization, A.Y. and G.D.; Methodology, A.Y. and G.D.; Software, A.Y.; Validation, A.Y. and G.D.; Formal Analysis, A.Y.; Investigation, A.Y.; Resources, A.Y. and G.D.; Data Curation, A.Y.; Writing – Original Draft Preparation, A.Y.; Writing – Review & Editing, M.I. and G.D.; Visualization, A.Y.; Supervision, G.D.; Project Administration, M.I. and G.D.

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