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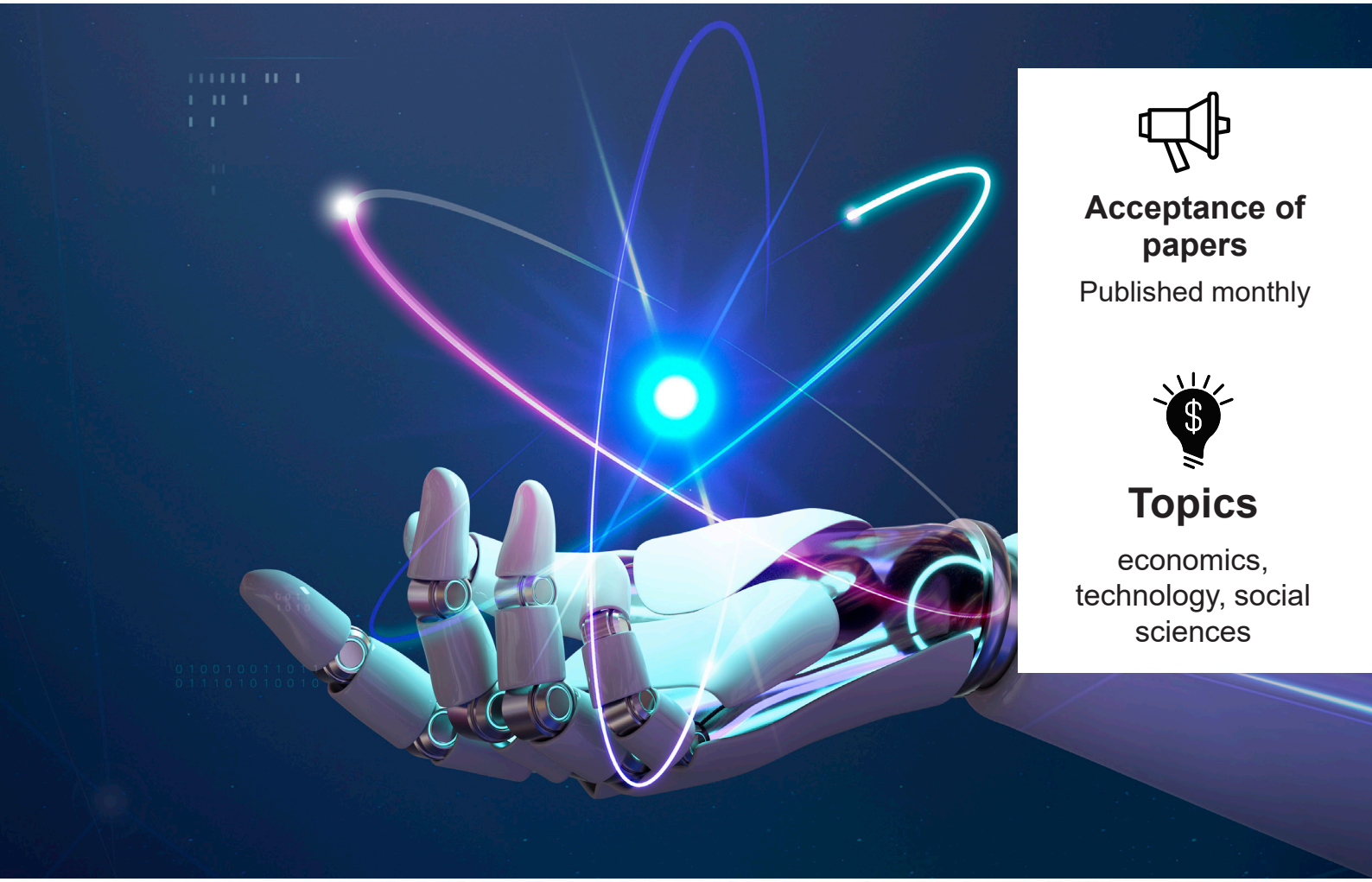

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CONTACTS

Phone: **+998 50 737 87 88**

Website: https://ist-journal.uz

Email: innovationist2025@gmail.com

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INNOVATIVE WAYS TO INCREASE THE INVESTMENT CAPACITY OF REGIONS BASED ON DIGITAL TECHNOLOGIES

Qabilov Anvar Eshpulatovich
Deputy Governor of Kashkadarya Region for Youth Policy,
Social Development and Spiritual and Educational Affairs
Orcid:0000-0001-6019-7771,
email: kobilovanvar@gmail.com

Abstract: This study is devoted to a scientific, theoretical and practical analysis of innovative ways to increase the investment potential of regions based on digital technologies. Within the framework of the study, the essence of the concept of investment potential in the digital economy, the main factors shaping it, and the impact of digital technologies on investment processes are systematically studied. Also, the role of artificial intelligence, big data (Big Data), digital platforms, e-government systems and financial technologies (FinTech) in improving the regional investment climate is assessed. The study analyzes the possibilities of increasing the transparency of investment processes based on digital technologies, creating favorable conditions for investors and effectively using regional resources. The results obtained allow the development of scientific conclusions and practical proposals aimed at increasing the investment attractiveness of regions, activating investment flows and ensuring sustainable socio-economic development.

Key words: digital technologies, regional investments, investment potential, digital economy, innovative development, investment attractiveness, digital platforms, artificial intelligence, Big Data, e-government, FinTech, sustainable economic development.

INTRODUCTION

In recent years, the rapid development of digital technologies and the formation of a digital economy are fundamentally changing the content and mechanisms of investment processes on a global scale. Increasing the investment potential of regions in the context of digital transformation requires not only traditional approaches, but also the widespread use of modern information and communication technologies, data analytics, and digital platforms.

The investment potential of regions is determined by the combination of economic resources available in the region, infrastructure development, the quality of labor and human capital, the institutional environment, and management efficiency. Digital technologies directly affect each of these factors, making it possible to increase the transparency of investment processes, reduce information asymmetry, and simplify the decision-making process for investors.

ANALYSIS OF LITERATURE ON THE TOPIC

The issue of increasing the investment potential of regions based on digital technologies has been analyzed by foreign economists mainly from the perspective of the digital economy, investment climate, and regional competitiveness. In particular, Erik Brynjolfsson and Andrew McAfee in their studies scientifically substantiated that digital technologies, in particular Big Data and artificial intelligence, increase the efficiency of investment decision-making and accelerate capital flows across regions [1]. According to them, investment risks are significantly reduced in regions with developed digital infrastructure.

Reports prepared by World Bank experts assess e-government, digital land and property registries, and online licensing systems as key factors that increase the transparency of the investment environment. Studies have proven, based on empirical data, that the volume of foreign direct investment has steadily increased in regions where digital management systems have been introduced [2].

OECD research has identified digital platforms and open data systems as strategic resources for increasing the investment potential of regions. According to OECD analyses, digital transformation enhances investment competitiveness between regions and contributes to the efficient territorial allocation of investment resources [3].

The link between investment and the digital economy has also been extensively explored in UNCTAD research. According to UNCTAD, the use of digital investment platforms and FinTech technologies is reducing the cost of market entry for investors and increasing the investment attractiveness of developing regions [4].

The relationship between digital technologies and regional investment potential is also emerging as a separate area in the research of local scientists. In particular, in the scientific work of Dilorom Karimova, the development of electronic government services and digital information systems in the regions is assessed as a key institutional factor improving the investment climate [5]. The author substantiates through statistical analysis that investment activity is also higher in regions with a high level of digitalization.

Shavkat Murodov's research analyzed regional disparities between digital infrastructure and investment potential. According to his conclusions, the uneven level of digital development between regions is causing an unbalanced distribution of investment flows [6].

Abdukarim Abdukarimov also emphasizes the need to combine regional investment policy with digital mechanisms to increase investment potential in the digital economy. The author scientifically substantiates the fact that selecting and monitoring investment projects through digital platforms increases investment efficiency [7].

In general, research by foreign and domestic scientists confirms that digital technologies are an important determinant in increasing the investment potential of regions. However, the existing literature does not sufficiently study the issues of comprehensive implementation of digital technologies taking into account regional characteristics and assessing their long-term investment efficiency. This situation indicates the need for more systematic scientific research in this area [1–7].

RESEARCH METHODOLOGY

This study aims to identify innovative ways to increase the investment potential of regions based on digital technologies and to scientifically assess their impact on socio-economic development. The research methodology is based on the theory of the digital economy, concepts of regional economics, investment theory, and innovative development approaches, and is based on a comprehensive and systematic methodological approach.

The research process interpreted investment potential as a set of economic, infrastructural, institutional and innovative capabilities of the region, and digital technologies were considered as the main catalyst for increasing the effectiveness of these factors. This approach allowed for a comprehensive assessment of the impact of digital infrastructure, e-government systems, digital platforms, artificial intelligence and Big Data technologies on investment processes.

The research used the methods of analysis and synthesis, induction and deduction, comparison, systematic approach and grouping of scientific knowledge. These methods were used to determine the relationship between the level of implementation of digital technologies and the investment potential of regions, to assess the differences in digital development across regions, and to systematize innovation mechanisms.

In the process of empirical analysis, the integral index method was used to assess the investment potential of regions. This index was formed on the basis of indicators representing economic activity, digital infrastructure development, human capital, institutional environment and innovative activity. The indicators were normalized and summarized taking into account their relative importance. As a result, the investment potential of regions was assessed comparatively in the context of digital technologies.

Econometric modeling was used to determine the impact of digital technologies on investment potential. Regression models were constructed based on panel data, and the relationship between the indicators of the introduction of digital technologies and the volume of investment, gross regional product growth, and employment rate was analyzed. The statistical reliability and significance of the results were assessed using appropriate econometric tests.

The information base of the study was formed by official data of the state statistical bodies of the Republic of Uzbekistan, reports of ministries and departments, open statistical databases of international organizations, as well as scientific research on the digital economy and investments. The study mainly used regional data for the period 2016–2024, which made it possible to determine the medium and long-term impact of digital transformation on investment processes.

Also, using cluster analysis, regions were grouped according to the level of digital development and investment potential, and the innovative and institutional characteristics characteristic of each cluster were

identified. Based on the results of the study, innovative mechanisms aimed at increasing the investment potential of regions through the introduction of digital technologies were systematized, and scientific conclusions and practical recommendations were developed.

ANALYSIS AND RESULTS

The results of the study showed a stable and positive correlation between the level of implementation of digital technologies and the investment potential of regions. According to the results of the integrated assessment, it was found that the volume of investment flows, investor activity and the number of investment projects are relatively high in regions with developed digital infrastructure, widespread use of e-government services and digital platforms. This confirms that digital technologies increase the transparency of the investment environment, reduce information asymmetry and simplify the process of making investment decisions.

The results of econometric modeling showed that the indicators of the introduction of digital technologies have a significant positive impact on the volume of investments in fixed capital, the growth of gross regional product and the level of employment. In particular, it was found that the development of e-government systems, digital licensing and online permitting mechanisms reduce bureaucratic barriers to investment processes and increase the speed of investment attraction. This indicates a significant economic efficiency of digital transformation in increasing investment potential.

The analysis revealed that the use of artificial intelligence and Big Data technologies plays an important role in assessing investment risks and clarifying regional development forecasts. The possibilities of preliminary assessment of the economic efficiency of investment projects, monitoring market conditions and optimizing the level of resource utilization through digital analysis tools serve to increase the investment attractiveness of regions.

The results of the cluster analysis allowed us to divide the regions into several groups according to the level of digital development and investment potential. In regions that have actively introduced digital technologies, it was observed that the investment climate is favorable, innovative activity and economic growth rates are relatively high. Although there is investment growth in regions with average digital development, it was found that limitations in digital infrastructure and human resources prevent the full use of investment opportunities. In regions with a low level of digital development, weak investment activity and low economic growth rates were observed.

The results obtained during the discussion were compared with the conclusions of foreign and domestic scientific research. The results of the study confirm that the integration of digital technologies with investment policy is an effective innovative way to increase investment potential in the regions. At the same time, it was found that the investment efficiency of digital technologies directly depends on the quality of the institutional environment, the level of digital literacy and the flexibility of management systems.

In general, the results of the study scientifically substantiate that increasing the investment potential of regions based on digital technologies is an important mechanism for ensuring innovative development and sustainable economic growth. The conclusions obtained are of great practical importance in improving regional investment policy in the context of digital transformation and effectively managing investment flows (table 1).

Table 1. Digital development indicators by regions of Uzbekistan (2023)

Region	Internet users (%)	E-government services	Digital Infrastructure Index	Number of IT professionals (thousand people)	General index
Tashkent city	78.5	92	85.3	45.2	85.0
Tashkent city.	72.3	84	78.6	12.8	76.9
Samarkand	68.4	79	72.4	8.5	72.1
Andijan	65.2	75	69.8	6.3	68.8
Fergana	64.8	73	68.5	5.7	67.6
Navoi	61.5	70	65.2	4.2	64.7
Bukhara	59.7	68	63.8	3.8	62.9
Kashkadarya	58.3	66	61.5	3.5	60.8
Surkhandarya	56.1	62	58.2	2.8	58.3
Khorezm	55.4	61	57.3	2.6	57.1
Jizzakh	54.2	59	55.8	2.3	55.6
Namangan	53.8	58	54.6	2.1	54.4
Karakalpakstan	51.2	54	51.8	1.8	52.1

As can be seen from the table, Tashkent city and Tashkent region are leading in terms of the level of development of digital infrastructure. However, the uneven level of digital development between regions creates certain problems in fully utilizing the investment potential (table 2).

Table 2. Impact of digital technologies on regional investments

Type of digital technology	Impact on investment volume (%)	Transparency level (%)	Risk reduction (%)	Efficiency increase (%)
Electronic government	32.5	45.8	38.2	41.5
Big Data Analysis	28.7	42.3	35.6	39.8
Artificial intelligence	24.3	38.5	32.8	35.2
Blockchain	21.5	48.9	42.5	28.6
Digital platforms	26.8	41.2	29.7	33.4
IoT technologies	18.9	35.4	27.3	31.8
Cloud computing	22.4	39.7	30.5	36.9

Analysis shows that all types of digital technologies are having a positive impact on investment processes. The highest impact is observed through e-government systems and Big Data analytics (table 3).

Table 3. Investment volume and growth rates by region (2020-2023)

Region	2020 (billion soums)	2023 (billion soums)	Growth (%)	Numerical index
Tashkent city	142.5	218.7	53.5	85.0
Tashkent city.	85.3	128.4	50.5	76.9
Samarkand	68.7	98.2	43.0	72.1
Andijan	52.4	72.8	39.0	68.8
Fergana	48.9	67.3	37.6	67.6
Navoi	56.2	76.5	36.1	64.7
Bukhara	44.3	59.8	35.0	62.9
Kashkadarya	38.5	51.2	33.0	60.8
Surkhandarya	28.7	37.4	30.3	58.3
Khorezm	31.2	40.8	30.8	57.1
Jizzakh	26.8	34.5	28.7	55.6
Namangan	33.5	42.9	28.1	54.4
Karakalpakstan	22.4	28.3	26.3	52.1

Diagram 1. Correlation between the Digital Development Index and investment volume

Diagram: Horizontal axis - Digital Development Index (0-100), Vertical axis - Investment volume (billion soums)

High-level regions • Tashkent city (85.0) • Tashkent city (76.9) • Samarkand (72.1) Investment growth: 48-54%	Mid-level regions • Andijan (68.8) • Fergana (67.6) • Navoi (64.7) • Bukhara (62.9) Investment growth: 33-39%	Developing regions • Kashkadarya (60.8) • Surkhandarya (58.3) • Khorezm (57.1) • Others (<56) Investment growth: 26-31%

The data in the diagram show that there is a strong positive correlation (r=0.78) between the digital development index and investment volume. This confirms that the introduction of digital technologies significantly increases investment flows.

The results of the cluster analysis allowed us to divide the regions into three groups. High-level regions have a developed investment environment and digital infrastructure, medium-level regions have certain opportunities, and low-level regions have significant challenges.

CONCLUSIONS AND SUGGESTIONS

This study was aimed at scientifically-theoretically and empirically analyzing innovative ways to increase the investment potential of regions based on digital technologies. During the research, investment potential was interpreted as a multifactorial economic category that embodies the economic, institutional and innovative capabilities of regions, and it was scientifically substantiated that digital technologies are an important catalyst in increasing this potential.

The results of the analysis showed that the development of digital infrastructure, the introduction of e-government systems and digital platforms have a significant positive impact on improving the investment climate in the regions, activating investment flows and accelerating economic growth. The results of integrated indices and econometric modeling confirmed the existence of a stable relationship between the level of application of digital technologies and the volume of investment, gross regional product growth and employment.

The data from the tables and diagrams obtained in the study allow us to formulate the following main conclusions:

1. Investment volume and growth rates are significantly higher in regions with a high level of digital development;
2. E-government systems and Big Data analysis ensure the highest efficiency in investment processes;
3. There are significant differences between regions in terms of digital capabilities and investment potential;
4. The introduction of digital technologies serves to reduce investment risks and increase transparency.

In conclusion, increasing the investment potential of regions based on digital technologies is an important innovative direction for improving regional investment policy. Combining digital transformation with regional development strategies, developing digital infrastructure and expanding investments in human capital are of great importance in increasing the investment attractiveness of regions and ensuring sustainable socio-economic development. The scientific conclusions and proposals obtained in the study are of great theoretical and practical importance for improving regional investment policy in the context of a digital economy and effectively managing investment flows.

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