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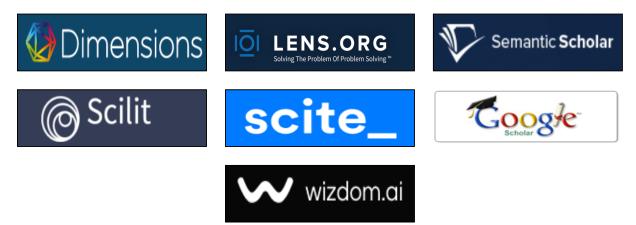# Article information

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AI Transforms Ecommerce Management and Regulation in Uzbekistan

AI Mengubah Manajemen dan Regulasi E-niaga di Uzbekistan

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Abstract

This study investigates the integration of artificial intelligence (AI) into Uzbekistan's e-commerce sector, aiming to enhance business management, develop new models, and increase governmental regulatory effectiveness. By employing mathematical models based on a knowledge base and product logic principles, the research predicts and facilitates alternative management decisions, improving market monitoring and administrative procedures. The findings reveal that AI significantly enhances decision-making quality and regulatory efficiency, suggesting its potential as a cornerstone for modern e-commerce management strategies. This contributes to the advancement of the digital economy and the improvement of business and consumer conditions in Uzbekistan.

Highlights:

- AI Integration: Enhances decision-making and administrative procedures in Uzbekistan's e-commerce sector.
- Mathematical Models: Uses knowledge bases and product logic to improve market monitoring and management decisions.
- Economic Impact: Contributes to the development of the digital economy, benefiting businesses and consumers.

Keywords: Public Administration, E-commerce, Digital Economy, Artificial Intelligence, Regulatory Efficiency

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Introduction

The global e-commerce industry, which is an integral part of the digital economy, is adopting new regulations and policies to regulate, improve infrastructure and ensure widespread access to the Internet. The sector is expected to generate revenue of $4198.5 trillion by 2025. China has taken the lead in the e-commerce market and will maintain its leadership until 2025. However, there are challenges such as data security, cybercrime, taxation, and consumer rights. Therefore, it is crucial to ensure flexibility in e-commerce management by adapting to changes in the technological and economic space [1].

Research is underway in the global academic environment to improve e-commerce governance, cybersecurity regulation, standards development, infrastructure and consumer behavior. These efforts are aimed at improving the e-commerce environment, including taxation, customs procedures, intellectual property protection and data security.

In recent years, Uzbekistan has implemented reforms aimed at enhancing e-commerce, digital economy, cybersecurity, and consumer data protection. The country's president has proposed expanding partnerships under the "Economic Cooperation Organization - 2025" program, emphasizing the importance of strengthening trade relations through the adoption of digital technologies and e-commerce. Thus, there is a need to adopt a systemic approach to e-commerce management, optimize solutions, develop effective strategies, and improve management mechanisms using digital technologies [2].

Literature Review

Various aspects of the digital economy and its management are covered in the works of various authors, including Yuzhakova, Talapin, Dobrolyubova, Kamolov and Artyomov. Works by Kobelev, Pirogov, Bystrova and others consider certain aspects of e-commerce. Works by Dobrolyubova, Yuzhakova and Aleksandrov deal with issues of public administration [3]. Methods for assessing the effectiveness of digital technologies are presented in the works of Kuzovkova, Kuznetsova and Vorobyova. Studies of the development of international trade and economic relations are conducted by Islamov, Karimov and others. Examples of econometric analysis in the field of ICT are presented in the works of Chepelev, Bobokhuzhayev and others [4]. Mathematical modeling in public administration is covered in the works of Kabulov and other researchers.

Method

Scholars have done little research on the mechanisms of public administration in e-commerce in the transition to a digital economy. This includes the lack of management systems using digital technologies for strategic planning, control and adjustment, as well as methods for assessing the effectiveness of management decisions and information collection systems for monitoring the development of e-commerce. The lack of research served as the basis for choosing the research topic, defining the goals and objectives of the study [5].

In the period of digitalization of society, it is necessary to consider "state management of e-commerce" as a unified system of planning, coordination and control of activities in this sphere using digital technologies. World experience shows that the inclusion of standardization, licensing, certification, insurance and innovative management methods in the system of e-commerce regulation is important to create favorable conditions for all economic actors. Uzbekistan has its own peculiarities in the management system related to historical and cultural conditions, as well as the active use of ICT. The use of artificial intelligence technologies can improve regulatory mechanisms and facilitate the development of managerial decisions in the sphere of e-commerce [6].

It is proposed to introduce a set of artificial intelligence systems into the existing systems of e-government and e-commerce aimed at optimizing the management of business processes and the development of new organizational models, which will lead to better government regulation in the field of e-commerce. The use of artificial intelligence will allow to create effective mechanisms of management and generation of recommendations of management decisions, contributing to the development of e-commerce and improving the quality of state regulation [7].

To determine the economic efficiency of e-commerce management using digital technologies, a method based on the final results and the share of management decisions was used. The share of management decisions was determined and various factors were taken into account, including the tax rate for the use of digital technology and the risk of ineffective management decisions, which was expressed in the form of the amount of the insurance premium. This makes it possible to assess the real contribution of digital technologies to the economic efficiency of e-commerce management and make informed management decisions based on this data.

$$E=(\textstyle\sum TR)/(\textstyle\sum TC)=(\textstyle\sum E*K)/(\textstyle\sum TC)=(\textstyle\sum E*K)/((Q*VC+FC)+\Pi*Tax+A+p) \text{ (1)}$$

Where TR is the surplus product (profit) obtained through the implementation of a specific management decision. This can be expressed in the form of an increase in income in terms of e-commerce efficiency, depending on what

the resulting indicator of management decisions is; TC is a set of expenses; E – economic effect of e-commerce (profit); K is the share of managerial decisions in the efficiency of e-commerce (K = 20-30%). Q is the volume of services rendered (management decisions developed); VC – variable costs per unit of service; FC is the annual amount of fixed costs without depreciation; P – profit; Tax – tax rate for the use of digital technology, coefficient; A – depreciation of fixed and intangible assets; p is the coefficient of the risk rate for making ineffective management decisions or the amount of the insurance premium.

The presented methodology for assessing the economic efficiency of the use of digital technologies in public administration makes it possible to take into account the share of management decisions, the rate and tax on digital technology, the risks of making ineffective management decisions, expressed in the amount of the insurance premium.

Results and Discussion

A. Results

The conceptual scheme of using artificial intelligence to support managerial decisions in e-commerce is proposed. It consists of three blocks: criteria processing, decision making and decision support. The criteria processing block defines problems, identifies objectives and criteria, and creates lists of alternative criteria. In the decision-making block, a problem is developed, a solution method is selected, and alternative solutions are evaluated. If the result is positive, the solution is passed to the support unit where it is verified and accepted and executed. If the result is negative, the process moves to revise the problem and change the model. The entire process involves identifying implementers, setting deadlines and resources, evaluating intermediate results, and adjusting implementers, deadlines, and resources.

It is proposed to include decision adequacy checking at the stage of criteria processing and decision support, which helps to avoid incorrect decisions and optimize management decisions with the help of mathematical models.

In government structures, data are used for decision making, evaluating effects and identifying hidden relationships. Data analysis, including the use of neural networks, helps to formulate hypotheses and propose solutions for consideration by relevant officials.

Digitalization and implementation of artificial intelligence in the state management of e-commerce can accelerate the growth rate of commerce and GDP of the country. The use of a set of artificial intelligence systems for management and formation of data-based management tools reduces the cost of collecting and analyzing information, provides access to relevant data and promotes informed management decisions.

For the development of e-commerce in Uzbekistan and GDP growth, it is necessary to align the Digital Uzbekistan 2030 strategy with national plans, improve data collection and analysis, increase the digital literacy of companies, develop logistics infrastructure, standardize and license digital enterprises, and strengthen interaction between the public and private sectors. The use of digital technologies, including artificial intelligence, will help in this process [8].

Studies show that effective management of e-commerce in Uzbekistan requires regulation and legal support, development of technical infrastructure, economic support mechanisms and data analysis. The use of artificial intelligence can improve each of these aspects, increasing the appreciation and timeliness of processes [9].

An analysis of global and national experience has revealed key indicators of government effectiveness in e-commerce. Correlation analysis has revealed the main factors influencing the level and dynamics of this efficiency, which makes it possible to make forecasts for public administration in this area [10].

The resulting multifactorial model (2) makes it possible to identify the factors that have a decisive impact on the effectiveness of the government:

$Y = 0{,}29 + 0{,}08 \cdot x\_1 + 0{,}04 \cdot x\_2 + 0{,}02 \cdot x\_3 + 0{,}06 \cdot x\_4$ (2)

(t) (9,68) (3,23) (2,33) (0,01) (2,20)

Based on theoretical provisions, international experience and features of the economy of Uzbekistan, the key factors affecting the effectiveness of the government are highlighted: the regulatory framework in the digital economy (x1), regulatory quality (x2), the development of e-government (x3) and cybersecurity (x4).

Econometric analysis points to the importance of the regulatory framework in the digital economy and the Global Cybersecurity Index for government effectiveness. A 1% increase in the efficiency of the regulatory framework leads to a 0.08% increase in government efficiency, highlighting the need to improve e-commerce regulations. A 1% increase in the Global Cybersecurity Index also increases government efficiency by 0.06%, confirming the

importance of data protection and combating cyber threats to improve governance in this area [11].

Uzbekistan's government will grow slightly, highlighting the need to take effective measures to improve all influencing factors, such as the regulatory framework in the digital economy, regulatory quality, the e-Government Development Index, and the Global Cybersecurity Index. The main goal of Uzbekistan's state policy in this area should be the development of a program to improve the quality of public administration, regulate business and introduce innovations [12].

B. Discussion

The use of artificial intelligence technologies at different levels of government contributes to improving the efficiency of coordination and control in the field of e-commerce. An important indicator of the effectiveness of management decisions is the growth of key indicators of e-commerce, which reflects the success of the state apparatus in achieving its goals [13].

The application of artificial intelligence at various levels of government contributes to better coordination and control in the sphere of e-commerce. The success of management decisions is assessed by the growth of key indicators of e-commerce, which reflects the effectiveness of government structures in achieving their goals.

In order to build an effective system of public administration of the e-commerce system in the Republic of Uzbekistan, modern management methods are proposed, including [14]:

1.Conducting a comprehensive analysis of existing management mechanisms, identification of key factors affecting the effectiveness of activities in this area.

2.Implementation of an adaptive management method that takes into account external and internal factors of impact on business processes in e-commerce.

3.Regulating the fulfillment of target indicators for flexibility in making management decisions.

4.Systematic accounting and analysis of changes in e-commerce.

5.Optimizing the coordination of business processes, taking into account innovative management methods and adaptation to changes.

6.Training of personnel in new methods of management and adaptability to changes.

7.Realization of feedback with the subjects of electronic commerce for efficiency and effectiveness of the made decisions.

8.Monitoring and evaluation of the effectiveness of changes, with subsequent operational correction.

The use of artificial intelligence in e-commerce management is of significant importance as it is capable of processing large amounts of data, forecasting changes in this sphere, proposing effective development strategies, monitoring the fulfillment of plans and ensuring security. This leads to the optimization of business processes and more efficient use of resources [15].

Conclusion

Thus, effective management of the e-commerce system in the Republic of Uzbekistan can be accomplished through regulation and legal support, provision of technical infrastructure, development of economic support and financing mechanisms, and data analysis and management. Artificial intelligence can help in each of these aspects, improving the evaluation and timeliness of processes.

The complex mechanism of state management of the e-commerce system and its components can be described as follows:

1. regulation and legal aspects: the application of the adaptive management method allows a quick response to changes in the legal environment, maintaining transparency and stability. The implementation of analytics systems evaluates the results of the application of legal provisions for adjustments and improvements, allowing monitoring of the effectiveness of legal provisions;

2. technical aspects: developing systems for online platforms that can dynamically respond to new threats and changes in the technology sector. An adaptive strategy rapidly modifies security standards to take into account the evolution of technology.

3. economic aspects: the application of adaptive management in infrastructure projects will help to respond flexibly to changes in the economic environment and market requirements. Analytics systems can assess the performance of financial mechanisms to adjust e-business support strategies.

4. analysis and data management: use of adaptive data analysis algorithms to identify changing consumer needs and market trends. Creating systems that can dynamically respond to changes in data volumes and processing requirements.

5. use of artificial intelligence: applying artificial intelligence to analyze and process data more efficiently, speeding up decision-making. Using machine learning algorithms to generate recommendations tailored to specific market conditions and requirements.

A common principle in these approaches is the continuous analysis of changes and results, which allows for a rapid response to dynamic conditions and effective management of the e-commerce system. Thus, effective management of the e-commerce system in the Republic of Uzbekistan can be achieved through regulation and legal support, provision of technical infrastructure, development of economic support and financing mechanisms, and data analysis and management. Artificial intelligence can help in each of these aspects, improving the evaluation and timeliness of processes.

References

1. President of the Republic of Uzbekistan, "On Additional Measures to Introduce Digital Economy, E-Government, as well as Information Systems in Public Administration of the Republic of Uzbekistan," Decree UP-5598, Dec. 13, 2018.
2. President of the Republic of Uzbekistan, "On Measures on Further Modernization of Digital Infrastructure for the Development of Digital Economy," Decree PP-4022, Nov. 21, 2018.
3. M. S. Asadova, "Blockchain Technologies in the Digital Economy of Uzbekistan," Theoretical & Applied Science, vol. 3, pp. 155–159, 2020.
4. E. Dobrolyubova, "Measuring Outcomes of Digital Transformation in Public Administration: Literature Review and Possible Steps Forward," NISPAcee Journal of Public Administration and Policy, vol. 14, no. 1, pp. 61–86, 2021, doi: 10.2478/nispa-2021-0003.
5. S. Hushko, A. Mamanazarov, A. Khudaybergenov, T. Jiyemuratov, and K. Kudiyarov, "E-Commerce Market Pulse in Global Economic Development," 2022, [Online]. Available: https://www.scitepress.org/Papers/2022/113421/113421.pdf
6. J. Jiao, J. Song, and T. Ding, "The Impact of Synergistic Development of Renewable Energy and Digital Economy on Energy Intensity: Evidence from 33 Countries," Energy, vol. 295, article 130997, 2024.
7. N. A. Kuznetsova, N. S. Gretsova, O. A. Yuzhakova, V. M. Negrimovskii, O. L. Kaliya, and E. A. Luk'yanets, "New Reagents for Determination of the Quantum Efficiency of Singlet Oxygen Generation in Aqueous Media," Russian Journal of General Chemistry, vol. 71, no. 1, pp. 36–41, 2001, doi: 10.1023/A:1012369120376.
8. A. Kwilinski, L. Hnatyshyn, O. Prokopyshyn, and N. Trushkina, "Managing the Logistic Activities of Agricultural Enterprises Under Conditions of Digital Economy," Virtual Economics, vol. 5, no. 2, pp. 43–70, 2022.
9. J. T. Nosirov, L. I. Kukaeva, B. A. A. Hussein, and V. S. Ustenko, "Disclosure of the Export Potential of High-Tech Enterprises in the Context of Industry 4.0 Through Quality Management," Proceedings on Engineering, vol. 5, Special Issue 2, pp. 295–310, 2023.
10. R. Nurimbetov, S. Khodjaeva, and A. Zikriyoev, "Integration of Visualizing Networks Mapping and Principal Component Analyses of Digital Economic Performance in Uzbekistan," Child Studies in Asia-Pacific Contexts, vol. 12, no. 1, pp. 410–425, 2022.
11. G. M. Shadieva and E. Urozaliev, "The Essence and Stages of Development of the Digitalization of the Economy," Galaxy International Interdisciplinary Research Journal, vol. 10, no. 12, pp. 963–971, 2022.
12. B. O. Tursunov, "The Role of Digitalized Trade Relationships in Increasing Competitiveness," Proceedings of the 6th International Conference on Future Networks & Distributed Systems, pp. 231–237, 2022, doi: 10.1145/3584202.3584236.
13. Y. Wang, H. Gao, and H. Wang, "The Digital Silk Road and Trade Growth–A Quasi-Natural Experiment Based on Silk Road E-Commerce," Research in International Business and Finance, vol. 67, article 102140, 2024.
14. S. J. Wroblewsk, P. Nartov, N. Khujanazarova, E. Golisheva, N. Zufarova, T. Machelski, L. Vintila, N. Papachashvili, T. Mikaberidze, and Y. Krupenka, "Business Management Insights and Society Transformation Process," 2020, [Online]. Available: https://vb.smk.lt/object/elaba:66252334/
15. T. A. Kuzovkova and V. N. Bavrin, "Formation of Indicators and Assessment of the Effectiveness of the Application of Information and Communication Technologies in the System of State Management," T-Comm-Telecommunications and Transport, vol. 11, no. 7, pp. 56–61, 2017.