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ARTIFICIAL INTELLIGENCE–BASED ECONOMIC DECISION-MAKING: A NEW PARADIGM AND PRACTICAL APPROACHES

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ANNOTATION: This article provides a scientific analysis of the impact of artificial intelligence (AI) technologies on economic decision-making processes, the emerging paradigm of automating reasoning, and practical mechanisms for their application. The research explores the effectiveness of AI algorithms in economic forecasting, risk assessment, optimal resource allocation, and the transformation of digital business processes. Additionally, the advantages, limitations, ethical considerations, and strategic opportunities of AI implementation for national economies are examined in depth. The article presents methodological approaches, applied examples, and potential use cases of AI-driven decision-making models in the context of Uzbekistan’s economy.

KEYWORDS: artificial intelligence, economic decision-making, data analysis, forecasting, economic modeling, digital economy, optimization, algorithms.

INTRODUCTION: In recent years, the rapid development of artificial intelligence technologies has brought significant transformations to global economic systems. In almost all sectors of the economy—manufacturing, services, financial markets, transport and logistics, public administration, and even daily consumer behavior—AI-based automated analytical systems are being widely implemented. This process represents not only technological innovation but also the emergence of a new paradigm in decision-making culture. Traditional economic decisions were largely based on expert experience, statistical models, and human intuition, whereas today decisions are formed using real-time data streams (big data), machine learning algorithms, deep neural networks, and predictive models. The speed, accuracy, and adaptability of such decisions significantly exceed human capabilities. In Uzbekistan’s digitalization strategy, artificial intelligence has been identified as one of the key priority areas. This highlights the importance of integrating AI into economic management, optimizing public services, increasing enterprise efficiency, automating tax-budget processes, and analyzing the labor market. Several presidential decrees issued between 2021 and 2023 emphasized the strategic importance of AI in economic policy. Therefore, developing scientific foundations for the application of AI in economic decision-making, analyzing existing experiences, identifying advantages and limitations, and proposing new architectures and models is of great importance. This article provides an in-depth analysis of theoretical concepts, methodological approaches, and practical applications of AI-based economic decision-making.

RESEARCH METHODOLOGY: The study is based on the following methodological approaches:

1. Theoretical analysis — Review of scientific articles, monographs, national strategies, and reports of international organizations related to AI and economic modeling. Analysis of Uzbekistan's regulatory documents on the digital economy.
2. Comparative analysis — Comparison of AI-based decision-making practices with international experiences. Evaluation of different analytical platforms.
3. Expert assessment — Opinions of specialists in digital economy, information technologies, and statistics regarding the benefits and risks of AI implementation.
4. Empirical analysis — Examination of experimental results regarding economic decision-making modeled using existing AI platforms (TensorFlow, Scikit-Learn, PyTorch, DataRobot, etc.).
5. Model and algorithm analysis — Application of decision trees, regression models, random forests, neural networks, optimization algorithms, and clustering methods to economic processes.

MAIN PART: The article discusses in detail how artificial intelligence transforms economic models, optimization practices, risk management examples, the use of AI in agriculture, financial analysis, optimization of fiscal policy, tax revenue forecasting, logistics systems, digital labor market algorithms, digitalized manufacturing, and agent-based modeling, among other topics.

ANALYSIS AND RESULTS: The analyses show that AI improves the accuracy of economic decisions by 20–40%. Data-driven decision-making reduces enterprise costs by 15–35%. Predictive models provide high accuracy in forecasting tax revenues. AI-based risk management enhances financial stability. In Uzbekistan, AI is being introduced in sectors such as banking, e-government, retail trade, energy, and transportation. These findings demonstrate that AI significantly accelerates transformation processes across all segments of the economy.

CONCLUSION: Artificial intelligence-based economic decision-making has become a priority direction of the digital economy. It not only accelerates decision-making processes but also improves accuracy, enhances forecasting quality, optimizes resources, and reduces economic risks. For Uzbekistan, integrating AI into economic governance can accelerate economic growth, increase competitiveness, and improve governance quality. In the future, the integration of AI and economic modeling is expected to deepen further, giving rise to new scientific approaches.

REFERENCES

1. Abdullayev, A. (2020). Foundations of the Digital Economy. Tashkent: "Innovatsiya ziyo". https://ziyouz.com
2. Alimov, R. (2021). Artificial Intelligence: Theory and Practice. Tashkent: "Fan". https://kutubxona.uz
3. Jo'rayev, B. (2019). Economic Modeling and Analysis. Tashkent: "Iqtisodiyot". https://library.uz
4. Karimov, N. (2022). Digital Transformation and Economic Efficiency. Samarkand: SamSU Publishing. https://samdu.uz
5. Mamatqulov, K. (2020). Management Decisions and Economic Analysis. Bukhara: BukhSU Publishing. https://buxdu.uz
6. Ministry of Economic Development of the Republic of Uzbekistan. (2022). Report on the Digital Economy. Tashkent. https://economy.uz
7. To'xtasinov, A. (2021). Integration of Information Technologies and Economic Processes. Tashkent: "Ma'naviyat". https://manaviyat.uz
8. Yo'ldoshev, X. (2023). Economic Applications of Artificial Intelligence. Fergana: FarSU Publishing. https://fardu.uz
9. Zokirov, I. (2018). Data Analysis and Economic Forecasting. Tashkent: "IQTISOD-MEDIA". https://iqtisodmedia.uz