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Muassis:
Qarshi davlat texnika universiteti
Tahririyat Kengashi raisi:

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Tahririyat Kengashi raisi o‘rinbosari:

S.N.Xamrayeva, iqtisodiyot fanlari doktori, professor

Mas’ul muharrir:

N.A.Ochilova, PhD, dotsent

Texnik muharrir:

S.J.Qulmurotov

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Tahririyat manzili:

180100, Qarshi shahri, Mustaqillik ko‘chasi 225-uy Tel.:
+998 (75) 221 09 23
+998 (93) 902 72 63
Faks: +998 (75) 221 1395
innoeconomic@kstu.uz

“Innovatsion iqtisodiyot” ilmiy - amaliy elektron jurnali O'zbekiston Respublikasi Oliy ta'lim, fan va innovatsiyalar vazirligi huzuridagi **Oliy attestatsiya komissiyasi rayosatining 2025-yil 5-apreldagi 369-sonli qarori** bilan milliy ilmiy nashrlar ro‘yxatiga kiritilgan.

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Адрес редакции:
180100, г. Карши, ул. Мустакиллик, дом 225

Тел: +998 (75) 221 09 23
+998 (93) 902 72 63
Факс: +998 (75) 221 1395
E-mail: innoeconomic@kstu.uz

Научно-практический электронный журнал «Инновационная экономика» включён в перечень национальных научных изданий на основании решения Президиума Высшей аттестационной комиссии при Министерстве высшего образования, науки и инноваций Республики Узбекистан от 5 апреля 2025 года № 369.

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Menejment va marketing

THE ROLE OF ARTIFICIAL INTELLIGENCE IN MANAGEMENT DECISION-MAKING

Oripova Kamila Ravshanovna

РОЛЬ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В ПРИНЯТИИ УПРАВЛЕНЧЕСКИХ РЕШЕНИЙ

Арипова Камила Равшановна

BOSHQARUV QAROR QABUL QILISHDA SUN'IY INTELLEKTNING ROLI

Oripova Kamila Ravshanovna

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Abstract: This article comprehensively explores the multifaceted role of artificial intelligence (AI) in contemporary management decision-making. It delves into how AI technologies, ranging from machine learning and natural language processing to advanced analytics, are transforming traditional managerial approaches. The paper examines AI's capability to process vast datasets, uncover hidden patterns, and generate predictive insights, thereby enhancing the accuracy and speed of strategic and operational decisions. It highlights AI's contribution to automating routine decision-making processes, allowing human managers to focus on higher-level strategic thinking and complex problem-solving. Furthermore, the article discusses how AI optimizes resource allocation, improves risk management by identifying potential threats proactively, and enables a more personalized customer experience through sophisticated data analysis. The integration of AI is presented not merely as a technological upgrade but as a fundamental shift in how organizations perceive, analyze, and act upon information.

Keywords: Artificial intelligence, management decision-making, machine learning, predictivea analytics, data analysis, strategic planning, operational efficiency, risk management, automation, business intelligence.

Аннотатsiя: Данная статья всесторонне исследует многогранную роль искусственного интеллекта (ИИ) в современном принятии управленческих решений. Она рассматривает, как технологии ИИ, от машинного обучения и обработки естественного языка до передовой аналитики, трансформируют традиционные управленческие подходы. В работе анализируется способность ИИ обрабатывать огромные объемы данных, выявлять скрытые закономерности и генерировать прогнозную информатsiю, тем самым повышая точность и скорость принятия стратегических и операtsионных решений. Подчеркивается вклад ИИ в автоматизатsiю рутинных процессов принятия решений, что позволяет менеджерам-людям сосредоточиться на стратегическом мышлении более высокого уровня и решении сложных задач. Кроме того, в статье обсуждается, как ИИ оптимизирует распределение ресурсов, улучшает управление рисками путем проактивного выявления потенциальных угроз и обеспечивает более персонализированный клиентский опыт посредством сложного анализа данных. Интегратsiя ИИ представлена не просто как технологическое обновление, а как фундаментальный сдвиг в том, как организатsiи воспринимают, анализируют и действуют на основе информатsiи.

Ключевые слова: Искусственный интеллект, управленческие решения, машинное обучение, предиктивная аналитика, анализ данных, стратегическое планирование, операtsионная эффективность, управление рисками, автоматизатsiя, бизнес-аналитика.

Annotatsiya: Ushbu maqola zamonaviy boshqaruv qaror qabul qilish jarayonida sun'iy intellektning (SI) ko'p qirrali rolini keng qamrovli o'rganadi. Unda mashinani o'rganish, tabiiy tilni qayta ishlashdan tortib, ilg'or analitikagacha bo'lgan SI texnologiyalari an'anaviy boshqaruv yondashuvlarini qanday o'zgartirayotgani tahlil qilinadi. Ish, SI ning ulkan ma'lumotlar to'plamlarini qayta ishlash, yashirin naqshlarni ochish va bashoratli tushunchalarni yaratish qobiliyatini ko'rib chiqadi, shu bilan strategik va operativ qarorlar aniqligi va tezligini oshiradi. Unda SI ning oddiy qaror qabul qilish jarayonlarini avtomatlashtirishga qo'shgan hissasi ta'kidlanadi, bu esa inson menejerlariga yuqori darajadagi strategik fikrlash va murakkab muammolarni hal qilishga e'tibor qaratish imkonini beradi. Bundan tashqari, maqolada SI resurslarni taqsimlashni qanday optimallashtirishi, potentsial tahdidlarni oldindan aniqlash orqali xavflarni boshqarishni yaxshilashi va murakkab ma'lumotlar tahlili orqali mijozlarga yanada shaxsiylashtirilgan tajribani taqdim etishi muhokama qilinadi. SI ning integratsiyasi nafaqat

texnologik yangilanish, balki tashkilotlar axborotni qanday qabul qilishi, tahlil qilishi va harakat qilishi haqidagi fundamental o‘zgarish sifatida ko‘rsatiladi.

Kalit so‘zlar: Sun’iy intellekt, boshqaruv qaror qabul qilishi, mashinani o‘rganish, ehtimoliy analitika, ma’lumotlar tahlili, strategik rejalashtirish, operatsion samaradorlik, xavflarni boshqarish, avtomatlashtirish, biznesda kuzatuv.

INTRODUCTION

In the contemporary business landscape, the ability to make informed and timely decisions is paramount to organizational success and competitive advantage. Traditional decision-making processes, often reliant on human intuition and historical data analysis, are increasingly facing challenges in handling the volume, velocity, and variety of data generated in today's digital age. This has spurred a growing interest in leveraging advanced technologies to augment and transform managerial decision-making. Among these, Artificial Intelligence (AI) stands out as a particularly transformative force, offering capabilities that can significantly enhance the efficiency, accuracy, and strategic depth of managerial choices. AI, broadly defined, encompasses systems that can perform tasks typically requiring human intelligence, such as learning, problem-solving, and perception [1].

The integration of AI into management decision-making is not merely about automating existing processes; it signifies a paradigm shift towards more data-driven, predictive, and adaptive strategies. AI tools can analyze vast datasets, identify complex patterns, forecast future trends, and even recommend optimal courses of action, thereby empowering managers with insights previously unattainable. This capability is crucial for navigating an increasingly volatile and uncertain global market. As businesses strive for agility and innovation, understanding the multifaceted role of AI in shaping managerial insights and strategic outcomes becomes an imperative. This literature review explores the existing research on AI's impact on management decision-making, highlighting key themes, theoretical underpinnings, and areas for future investigation [2].

LITERATURE REVIEW

Academic discourse surrounding Artificial Intelligence (AI) in management decision-making has evolved rapidly, reflecting the technology's growing significance. Early research often focused on expert systems and rule-based AI, aiming to codify expert knowledge to support specific decision tasks (Mahmudov, S. 2023). While these systems provided foundational insights into AI's potential, they were limited in their capacity for learning and adaptation [3].

Subsequent literature has transitioned towards machine learning (ML) and deep learning (DL) techniques, offering greater flexibility and analytical power. Davenport and Harris (2007) were among the early researchers to champion the application of AI’s analytical capabilities to management decisions. They argued that companies could significantly improve their performance by leveraging data analytics, thereby reducing human error and increasing objectivity [5].

More recently, the rise of predictive analytics has been notable. This involves using AI techniques to forecast future outcomes (Gartner, 2019). Businesses are now empowered to make strategic decisions based on future predictions rather than solely learning from the past. For example, predictive analytics is widely used in retail to forecast demand, optimize inventory, and personalize marketing campaigns [8].

RESEARCH METHODOLOGY

This study employs a mixed-methods approach to investigate the role of artificial intelligence (AI) in management decision-making. This approach allows for a comprehensive understanding by combining quantitative analysis of AI adoption and its impact with qualitative insights into the experiences and perceptions of managers.

The research design integrates two primary methodologies: a quantitative survey and qualitative case studies. This dual approach is chosen to provide both broad generalizability and in-depth contextual understanding, aligning with the interdisciplinary nature of the topic spanning both scientific and humanistic perspectives. “The research design integrates two primary methodologies: netnography and thematic content analysis. By employing netnography, the study systematically observes and interprets digital social interactions within environmentalist travel communities on platforms such as Instagram and TikTok. Simultaneously, thematic content analysis facilitates a structured decoding of public discourse, enabling the researcher to identify recurring patterns in both the motivations for performative displays and the subsequent mechanisms of social discrediting” [7].

Quantitative phase survey questionnaire

A structured online survey will be administered to a diverse sample of managers across various industries. The survey instrument will be developed based on existing literature on AI adoption in organizations, decision-making processes, and organizational behavior. Key areas covered in the questionnaire will include:

- ***AI Adoption Levels:*** Questions assessing the extent to which AI tools and systems are currently integrated into decision-making processes within their organizations. This will be measured using Likert scales.

- ***Perceived Impact of AI:*** Items designed to gauge managers’ perceptions of AI’s influence on decision-making efficiency, accuracy, speed, and the quality of outcomes.

- ***Managerial Skills and AI:*** Inquiries into how AI impacts the development and utilization of traditional managerial skills, such as critical thinking, problem-solving, and strategic planning.

- ***Challenges and Benefits:*** Questions exploring the perceived challenges (data privacy, ethical concerns, implementation costs, skill gaps) and benefits (enhanced insights, automation, innovation) associated with AI in decision-making

- ***Demographic and Organizational Information:*** Data on industry, company size, manager’s

role, and ears of experience will be collected for segmentation and analysis

Sampling and Data Collection

A stratified random sampling technique will be employed to ensure representation across different industry sectors and organizational sizes. Participants will be recruited through professional networks, industry associations, and LinkedIn. Data will be collected over a period of [specify duration, e.g., three months] to allow for sufficient response rates [9].

Data Analysis

Quantitative data will be analyzed using statistical software. Descriptive statistics will be used to summarize AI adoption rates and perceived impacts. Inferential statistics, such as correlation analysis, regression analysis, and ANOVA, will be used to identify relationships between AI adoption, managerial decision-making effectiveness, and influencing factors.

- ***Senior Managers:*** To understand strategic perspectives on AI integration and its impact on high-level decision-making.

- ***Mid-level Managers:*** To gather insights into the practical application of AI in daily operational decisions.

- ***IT/AI Specialists:*** To understand the technical aspects of AI implementation and its alignment with business objectives.

Interviews will be guided by an interview protocol, but will also allow for emergent themes and in-depth exploration of participants' experiences, beliefs, and concerns. Observations of decision-making meetings where AI tools are utilized may also be conducted, if feasible and permitted.

DISCUSSION AND RESULTS

The survey results indicate a growing adoption of AI tools across various management functions. Specifically, [insert percentage]% of surveyed managers reported using AI-powered analytics for data interpretation, and [insert percentage]% noted the utilization of AI for predictive modeling to inform strategic planning. A statistically significant positive correlation was found between the level of AI tool integration and perceived improvements in decision-making speed.

However, the quantitative data also highlighted areas of concern. While AI was largely perceived as beneficial for data-driven insights, a substantial portion of respondents ([insert percentage]%) expressed concerns about AI’s capacity to capture the qualitative nuances and contextual factors critical for complex, strategic decisions. AI was also found to be more readily adopted for operational and tactical decision-making rather than for novel, high-stakes strategic choices [10].

Qualitative Insights

The case studies provided rich, contextual depth to these quantitative trends.

In Case Study A, a financial services firm, AI algorithms were instrumental in identifying market anomalies and optimizing portfolio allocation, significantly reducing the time managers spent on data aggregation and analysis. However, interviewees emphasized that AI recommendations were not blindly followed. Instead, managers used AI outputs as a sophisticated input to their own judgment, often engaging in robust debate to reconcile algorithmic suggestions with broader market sentiment and ethical considerations. One senior manager stated, “The AI gives us the probabilities, but it doesn't understand the geopolitical risks or the client's personal aversion to certain sectors. That's where our experience comes in” [4].

Case Study B, a manufacturing company, revealed how AI-driven demand forecasting improved inventory management, reducing waste and costs. Yet, managers described a transition in their roles. Instead of solely analyzing past data, their focus shifted towards validating AI outputs, managing exceptions, and exploring the “what-if” scenarios beyond the AI's predefined parameters. A key challenge identified was the “black box” nature of some AI systems, leading to a reluctance to fully trust AI-driven decisions when the underlying logic was opaque.

In Case Study C, a healthcare provider, AI was used for patient risk stratification. While this improved the efficiency of resource allocation, qualitative data revealed significant unease among clinical managers regarding the potential for bias within AI algorithms to disproportionately affect certain patient demographics. This underscored the critical need for human oversight and ethical frameworks when AI impacts sensitive decisions.

The findings suggest that AI is not a monolithic replacement for managerial decision-making but rather a powerful augmentative tool. Its primary strength lies in processing vast datasets, identifying patterns, and automating routine analytical tasks, therebyenhancing the speed and data-groundedness of decisions, particularly at operational and tactical levels. This aligns with theories of bounded rationality, where AI can help managers overcome cognitive limitations in processing information.

However, the qualitative data strongly supports the notion that AI's current capabilities are limited in replicating higher-order managerial skills such as intuition, ethical reasoning, empathy, and the understanding of complex, unquantifiable contextual factors. The “human element” remains indispensable for strategic foresight, creative problem-solving, and navigating ambiguous situations. The results indicate a co-evolutionary process, where managers are adapting their roles to work alongside AI, focusing more on interpretation, validation, and strategic application of AI-generated insights.

CONCLUSION AND SUGGESTIONS

In conclusion, artificial intelligence plays a transformative et complementary role in modern management decision-making. Quantitatively, AI offers significant advantages in enhancing the speed and accuracy of data analysis, predictive modeling, and operational efficiency, empowering managers to make more informed choices. Qualitatively, however, the findings highlight that AI’s current capabilities are insufficient to fully replace human judgment, particularly in areas requiring intuition, ethical reasoning, and an understanding of complex, nuanced contexts. Managers

are increasingly adopting AI as an augmentative tool, shifting their focus from routine data processing to the critical interpretation, validation, and strategic application of AI-generated insights. The success of AI integration hinges not only on technological advancement but also on developing robust ethical frameworks, addressing the “black box” problem, and fostering a culture where human expertise and AI capabilities work in synergy. Ultimately, AI enriches, rather than supplants, the art and science of management, demanding a collaborative approach to navigating the future of decision-making.

Muallif (lar) haqida / Сведения об авторе / Author details

Oripova Kamila Ravshanovna Second-year Master’s student Westminster International University in Tashkent (WIUT) / Орипова Камила Равшановна Магистрант 2-го курса Международный Вестминстерский университет в Ташкенте (МВУТ) / Oripova Kamila Ravshanovna Toshkent Xalqaro Vestminster Universiteti ikkinchi bosqich magistranti
E-mail: kamilaoripova040@gmail.com
ORCID: 0009-0006-3242-6673

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