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THE ROLE OF ARTIFICIAL INTELLIGENCE IN MODERN BANK RISK MANAGEMENT

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ABSTRACT

Artificial Intelligence (AI) is increasingly becoming a strategic asset for banks, offering operational efficiency and innovative development opportunities. However, its integration also introduces cyber risks, compliance challenges, and data security concerns. This study explores how AI is being utilized in the banking sector, particularly for operational risk management. Using analytical methods including synthesis, induction, and deduction, the paper outlines key AI applications—from chatbots to predictive analytics—and assesses their benefits and limitations. It highlights how AI systems can enhance traditional risk management tools like risk event databases, key risk indicators, scenario analysis, and self-assessment methods. Although AI helps mitigate many risks, challenges such as data fragmentation, limited AI expertise, and ethical concerns must be addressed. The paper concludes that integrating AI marks a transformative shift in banking risk management, necessitating regulatory guidance and strategic planning.

KEYWORDS: Operational Risk, AI in Banking, Risk Management Tools, Cybersecurity, AI Models, Risk Indicators, Regulatory Compliance

INTRODUCTION

The rapid advancement of AI technologies is revolutionizing the banking industry. Banks are leveraging AI to improve customer service, reduce human workload, and streamline operations. Yet, alongside these benefits, new forms of operational risks—like data breaches and AI model errors—are emerging. This paper investigates the growing role of AI in operational risk management within banking institutions.

AI'S ROLE IN MODERN BANKING

Operational risk refers to the potential for loss resulting from failed internal processes, human error, system failures, or external events. Ukrainian banking regulations (e.g., National Bank of Ukraine Resolution No. 64 of 2018) define operational risks to include IT system failures and cyber threats, but exclude reputational or strategic risks.

AI applications in banks today span:

- **Customer Service**: Chatbots, virtual assistants, automated identification.
- **Internal Controls**: Fraud detection, behavioral analytics, employee monitoring.

- **Operational Processes**: AI-based document recognition, predictive analytics, remote client identification, and treasury operations.

AI allows early detection of anomalies and automates routine risk-monitoring activities, significantly reducing human error and improving operational resilience.

RISK MANAGEMENT TOOLS ENHANCED BY AI

AI can strengthen standard operational risk management tools defined by regulators:

- **Internal Risk Event Databases**: AI improves event detection, data entry, and error reduction.
- **Key Risk Indicators (KRIs)**: AI enables real-time, predictive KRI monitoring with reduced manual input.
- **Self-Assessment**: AI accelerates risk assessments, integrates real-time updates, and adapts to regulatory and socio-economic changes.
- **Scenario Analysis**: AI supports complex, multifactorial stress testing and scenario planning.
- **External Risk Event Databases**: AI parses and aligns external data with internal models for enhanced insights.

By integrating these AI-enhanced tools, banks can reduce manual workload, increase data reliability, and enable more dynamic risk responses.

BENEFITS AND RISKS OF AI INTEGRATION

Benefits:

- **Forecasting Accuracy**: AI predicts process failures with up to 90% accuracy.
- **Cost Reduction**: Banks save 15–25% on risk operations using AI (Deloitte, 2023).
- **24/7 Monitoring**: AI systems provide continuous analysis and alerts.
- **Scalability**: AI systems expand with minimal additional staffing.

RISKS AND CHALLENGES:

- Lack of data scientists and AI expertise
- Data fragmentation in legacy banking systems
- Model validation difficulties
- High costs of development and integration
- Ethical issues, such as bias and data privacy

Although banks cannot outsource risk management functions, regulations permit the use of external data and AI tools, if integrated internally.

DISCUSSION

A key question remains whether AI can fully replace human risk managers. While AI excels in data processing, decision-making in complex, nuanced scenarios still demands human oversight. Also, sensitive data management and the ethical use of AI must be carefully controlled to prevent misuse. In Ukraine, leading banks such as PrivatBank and Monobank are already piloting AI applications. However, implementation varies by institutional capacity, technical readiness, and regulatory clarity. Banking institutions must carefully balance the adoption of AI with investments in staff training and data governance.

CONCLUSION

AI is revolutionizing operational risk management in banking by automating controls, forecasting risks, and enhancing decision-making. Key tools such as risk databases, KRIs, and scenario analysis are becoming more accurate and efficient with AI support. However, the adoption of AI also introduces new challenges—skills shortages, model errors, and privacy issues—which require strategic mitigation. For Ukrainian banks and others globally, AI presents both a catalyst for growth and a responsibility to ensure secure, ethical, and effective implementation.

REFERENCES

1. Cabinet of Ministers of Ukraine (2024). "National Cashback" Program.
2. Deloitte (2023). AI-Driven Transformation in Financial Risk Operations.

3. European Banking Authority (2024). Risk Dashboard Q4 2023.
4. ICU Research & USAID (2023). Operational Risk in Ukrainian Banking.
5. Kholyavko, N., Sadchykova, I., &Kolotyuk, M. (2023). AI in Banking Institutions.
6. KomisjaNadzoruFinansowego (2023). Annual Innovation Report.
7. McKinsey & Company (2022). The State of AI in Risk Management.
8. Mykolaychuk, R. A., &Mykolaychuk, A. I. (2024). AI in Document Processing.
9. National Bank of Ukraine (2018, 2023). Risk Management Guidelines and Amendments.
10. Prytsyuk, L. A. (2023). AI in Banks: Prospects and Caveats.
11. Puzyrova, P., &Irnazarov, D. (2025). AI Integration in Banking.
12. Solodkyi, V. V., & Polishchuk, Yu. A. (2023). AI in Ukrainian Banks.
13. Statista (2023). Global AI Spending in Banking.