

## Business Risk Management In The Era of Generative Artificial Intelligence Technology

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### ABSTRACT

This study examines business risk management in the era of Generative AI technology through a Systematic Literature Review approach using sources from Google Scholar and DOAJ, focusing on publications from 2016 to 2025. The results of the study show that risk management requires a holistic and adaptive approach that involves technical, policy, leadership, and organizational culture aspects. The risks that arise are not only technical but also ethical and regulatory, so that effective mitigation strategies include cross-sector collaboration, the use of advanced technology for monitoring and simulation, and the formation of a flexible organizational culture with communicative and ethical transformational leadership. There is a gap in the implementation of comprehensive regulatory policies and organizational culture transformation mechanisms to accelerate technology adoption while deeply considering social and ethical aspects. This study highlights the urgency of developing an inclusive AI governance model and effective cultural transformation strategies as a focus for future research to support responsible and sustainable innovation.

**Keywords:** risk management, generative AI technology, regulatory policy, transformational leadership, organizational culture.

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### INTRODUCTION

The development of Generative Artificial Intelligence (AI) technology has brought about a significant revolution in the business world, presenting new opportunities as well as complex challenges. This technology, which is capable of automatically generating creative content and analyzing data, has been applied across various sectors, from marketing to product development, thereby drastically improving a company's operational efficiency. However, behind these benefits lie new risks that must be effectively managed so that companies can survive and thrive in an increasingly dynamic and competitive business ecosystem (Tutar & Güler, 2022). Business risk management is a crucial aspect in anticipating uncertainty and potential negative impacts that may arise from the implementation of this technology Abdelkader et al., 2021; (Rahman et al., 2024) Therefore, a deep understanding of risk management in the context of Generative AI is essential as the foundation for adaptive and sustainable business strategies.

Business risk management is generally defined as the process of identifying, evaluating, and controlling risks that could potentially hinder the achievement of organizational goals (PECB, 2018). In the context of the Generative AI technology era, the scope of risk management extends not only to technical and operational aspects, but also to increasingly complex ethical, data security, and privacy risks (Ooi et al., 2025). The use of generative AI poses new challenges such as the risk of dependence on algorithms that lack transparency, the risk of misinformation, and the potential for manipulation of business process automation (Wang et al., 2024). Therefore, the risk management approach must be tailored to the specific characteristics and impacts of this technology in order to anticipate risks comprehensively and effectively.

The widespread adoption of Generative AI technology has led to a fundamental transformation in the business landscape, changing operating patterns, customer interactions, and traditional business models (Al Yakin et al., 2023). These changes significantly increase the complexity of risks that managers must manage, as risks are no longer limited to internal factors but also external factors influenced by technological developments and regulations (Hamed et al., 2024). For example, reputational risks resulting from AI errors or legal risks related to the copyright of automatically generated content are becoming increasingly relevant (Budhwar et al., 2023). This situation calls for the development of a risk management framework that is more adaptive and responsive to technological changes and capable of addressing new challenges that do not exist in conventional risk management practices.

Business risk management is a systematic process that includes identifying, analyzing, evaluating, and controlling various risks that can hinder the achievement of organizational goals. This process aims to protect the company's assets and reputation, minimize the negative impact of risks, and ensure business continuity through the development and implementation of appropriate risk mitigation strategies. Risk management also serves as a guide in strategic decision-making and efficient resource allocation to deal with uncertainty in a dynamic and complex business environment.

The systematic literature review (SLR) approach in risk management serves to synthesize and consolidate various research findings, identify study gaps, and provide practical guidance for policymakers in developing adaptive and effective strategies. This method helps provide a comprehensive overview of business risk practices and challenges across various sectors, but caution is needed regarding potential biases and methodological differences to ensure that the results are valid and comprehensive (Ibadildin et al., 2025; Noviliani et al., 2025; Siregar et al., 2025).

The integration of AI in risk management enables companies to predict and respond to risks more accurately and quickly, improve resource allocation efficiency, and strengthen cybersecurity (Haque et al., 2025; Walia, 2025). The use of AI frameworks that consider ethical aspects and regulatory compliance is important to ensure transparency and avoid bias (Qureshi et al., 2024; Marin et al., 2025). Despite its many benefits, human oversight is still necessary to prevent vulnerabilities resulting from over-reliance on technology (Odedina, 2023).

The results of the study show that although business risk management has developed as an important systematic process for maintaining sustainability and protecting organizational assets, there is a gap in the integration of advanced technologies such as Generative AI into the risk management framework. The systematic literature review (SLR) approach used in this study aims to fill this gap by synthesizing fragmented knowledge, identifying under-explored areas, particularly related to AI adaptation in risk management practices, and providing more adaptive and comprehensive strategic guidance. This study targets the development of a deeper understanding of the role of Generative AI in strengthening business resilience, improving risk prediction and response, while addressing complex ethical and regulatory issues in the digital age. Thus, the objective of this study is to provide a conceptual and practical foundation that can be used by organizations and policymakers to implement more effective risk management amid the acceleration of technological transformation.

## METHOD

This study employed a Systematic Literature Review (SLR) approach to identify, examine, and synthesize existing literature on business risk management in the era of Generative Artificial Intelligence (Generative AI). The review was designed to provide a comprehensive and up-to-date understanding of the types of business risks associated with Generative AI, the mitigation strategies discussed in the literature, and the implications of Generative AI for business risk management practices. Rather than generating primary empirical data, this review synthesized findings from previously published scholarly literature relevant to the topic.

The literature search was conducted systematically using academic databases, including Directory of Open Access Journals (DOAJ) and Google Scholar. The search strategy employed combinations of keywords related to the main concepts of the review, including “business risk management,” “Generative AI,” and “artificial intelligence technology.” The search process was intended to identify relevant scholarly publications addressing the relationship between artificial intelligence, particularly Generative AI, and business risk management.

To ensure the relevance and consistency of the literature included in the review, predefined inclusion and exclusion criteria were applied. The inclusion criteria consisted of scholarly research articles, review articles, and case studies published between 2016 and 2025, written in English or Indonesian, and addressing risk management in the context of artificial intelligence technology, particularly Generative AI. The exclusion criteria consisted of non-scholarly or popular publications, opinion-based articles, duplicate publications, and publications that did not provide sufficient information relevant to the review topic. Studies that did not substantially address business risks, risk management, or the implications of AI technology for organizations were also excluded.

The selection of literature was conducted in several stages. First, the titles and abstracts of the identified publications were screened to determine their relevance to the review topic. Publications that met the initial relevance criteria were then assessed through full-

text examination. At this stage, the inclusion and exclusion criteria were applied more comprehensively to determine whether each publication was suitable for inclusion in the review. The selected literature was subsequently used as the basis for the analysis and synthesis of findings.

Data were systematically extracted from the selected literature based on several analytical aspects, including types of business risks, risk mitigation strategies, and the impact of Generative AI on business risk management practices. The extracted information was compared across the reviewed studies to identify recurring themes, patterns, similarities, differences, and emerging issues. The findings were then synthesized narratively to develop an integrated understanding of business risk management in the context of Generative AI. Particular attention was given to the challenges and opportunities associated with the adoption of Generative AI, the forms of risk identified in the literature, and the approaches proposed to mitigate those risks. This synthesis provides a basis for identifying broader trends and developing a comprehensive perspective on how Generative AI is influencing the landscape of business risk management.

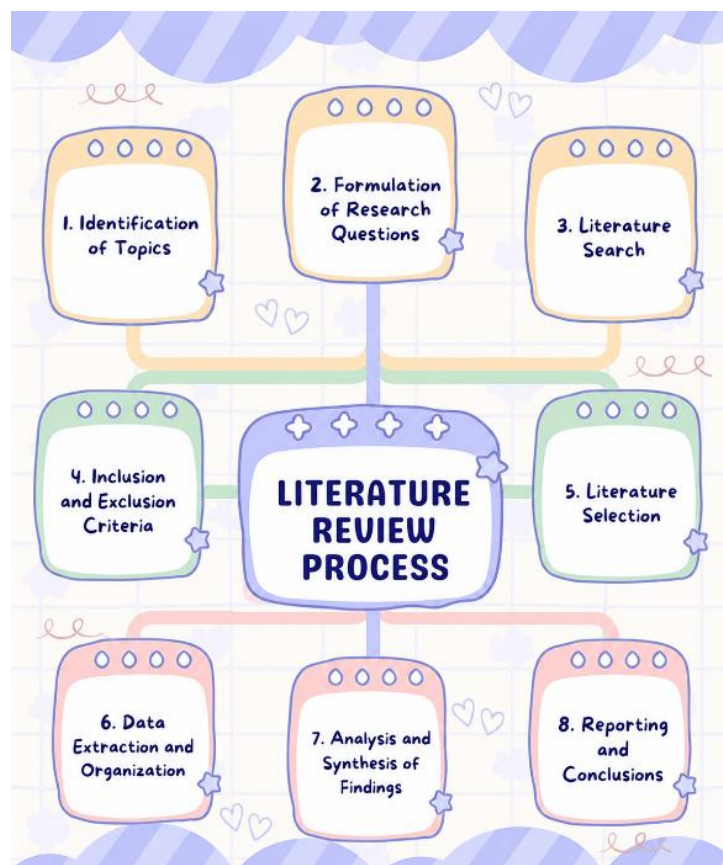


Figure 1. Business Risk Management Research Procedure in the Era of Generative AI Technology

As shown in Figure 1, the systematic literature review followed a series of sequential stages, beginning with the identification of the review topic and objectives. This stage

established the scope of the review, particularly the business risks associated with the adoption of Generative AI. The process then proceeded with the formulation of review questions to guide the examination of the challenges, opportunities, and implications of Generative AI for business risk management. Next, a structured literature search was conducted using predefined search strategies, followed by the application of inclusion and exclusion criteria to identify relevant publications. The selected publications were subsequently screened and assessed for their relevance to the review objectives. Relevant information was then systematically extracted from the selected literature, focusing on the types of business risks, risk mitigation strategies, and the impact of Generative AI on business risk management practices. Finally, the extracted information was analyzed and synthesized to identify key patterns, emerging themes, and common practices reported in the literature. The results of this synthesis were then organized and presented to provide a comprehensive overview of business risk management in the era of Generative AI.

## RESULTS AND DISCUSSION

### Site Description

Research related to business risk management in the era of Generative AI technology can be grouped into several main focuses, namely technological risks and challenges, risk management strategies and technological interventions, and the role of leadership and organizational culture in risk management. Each focus discusses variables and insights that help to deeply understand various aspects of risk and relevant solutions to optimize the implementation of generative AI in a responsible and safe manner.

Table 1. Research Themes and Key Variables in Generative AI Risk Management

| No. | Field or Focus                        | Names of Authors in the Same Field                                                                           | Insight or Research Variable                                                                                                                                   |
|-----|---------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Risks and Challenges of Technology    | (Hu et al., 2024); (Островская et al., 2025); (Alt et al., n.d.); (Park et al., 2024); Zlateva et al. (2024) | Data security risks, output quality, IT vulnerabilities, misinformation, social bias, and intellectual property regulatory challenges                          |
| 2   | Risk Management Strategy & Technology | Abuhashish & Ismail (2025); Srivastava & Panda, (2024); Sindiramutty et al. (2024)                           | Cross-sector collaboration, ethical policy development, real-time monitoring, adversarial network simulation, layered risk framework, feedback loop management |

| No. | Field or Focus                        | Names of Authors in the Same Field                                                  | Insight or Research Variable                                                                                                                                             |
|-----|---------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3   | Leadership and Organizational Culture | Welch (2025); Bhimavarapu, (2025); Ghaffar & Ph (2025); Murire (2024); Mcgee (2024) | Transformational leadership, proactive communication, ethical considerations, flexible and collaborative culture, continuous learning, cultural alignment and leadership |

Table 1 outlines the research focus related to generative AI risk management into three main groups, namely technological risks and challenges, technology management and intervention strategies, and leadership and organizational culture factors. Each group has unique and complementary research variables to provide a comprehensive picture of how businesses can manage AI risks with a holistic and adaptive approach, ranging from technical aspects and policies to organizational values.

### Business Risk Characteristics Arising from Generative AI Technology

The integration of generative AI technology into business carries various risks, including technical risks such as potential data security breaches (Hu et al., 2024), inaccurate output quality that can damage reputation (Островская et al., 2025), as well as IT security vulnerabilities that require in-depth evaluation prior to implementation (Alt et al., n.d.). Ethical risks also arise, such as the production of misinformation that has a negative social impact (Park et al., 2024) and biases that reinforce social discrimination (Hu et al., 2024). In addition, regulatory challenges related to intellectual property rights over AI content (Zlateva et al., 2024) and the lack of legal guidelines that comprehensively regulate the use of generative AI (Островская et al., 2025) is also an important concern. Nevertheless, this technology offers great opportunities for innovation, so companies must carefully balance the benefits with the various risks involved.

Research findings indicate that integrating generative AI technology into business poses complex challenges that are not only technical in nature, but also touch on ethical and regulatory aspects. Data security risks and poor output quality can threaten a company's trust and reputation, while the potential for bias and the spread of misinformation demand serious attention to maintain fairness and social responsibility. Furthermore, the regulatory vacuum surrounding generative AI management creates legal uncertainty that impacts the sustainability of this technology's implementation. Overall, these findings highlight the urgent need for businesses to develop holistic and adaptive risk management strategies, while also promoting the establishment of adequate policies to optimize the benefits of the technology while minimizing its negative impacts.

### Risk Mitigation Strategies in Managing Generative AI Technology

Managing the risks of generative AI technology requires an approach that encompasses organizational strategies and technological interventions. Collaboration between

academia, industry, and civil society is essential for developing governance and policies that responsibly regulate the ethical and social aspects of AI (Abuhashish & Ismail, 2025). On the technology side, real-time monitoring systems and simulation techniques such as generative adversarial networks (GAN) are used to effectively detect anomalies and identify vulnerabilities (Srivastava & Panda, 2024).

Risk assessment is conducted dynamically using a layered framework that combines continuous red-team and adversarial simulations. In addition, feedback loop management keeps model performance optimal through continuous evaluation and adjustment (Srivastava & Panda, 2024). Although this strategy is robust, rapid technological developments require adaptation and ongoing research to address new threats that continue to emerge. The results of the study show that managing generative AI risks requires cross-sector collaboration and advanced technology for monitoring and threat simulation. Continuous adaptation and evaluation are essential given the rapid pace of technological development and ever-changing risk challenges.

### **The Role of Leadership and Organizational Culture in AI Risk Management**

The interaction between leadership and organizational culture is crucial in effectively managing AI risks. Inspirational transformational leadership and proactive communication about the benefits of AI can reduce resistance while encouraging employee participation (Welch, 2025); (Bhimavarapu, 2025). Leadership must also consider ethical aspects so that AI technology can complement human decision-making, not replace it (Ghaffar & Ph, 2025). Culturally, organizations that encourage flexibility, collaboration, and continuous learning are better able to adapt to technological change and manage risks such as job displacement and algorithmic bias (Welch, 2025) (Murire, 2024) (Mcgee, 2024). Aligning culture and leadership behavior is key to the successful, safe, and effective integration of AI (Welch, 2025) (Mcgee, 2024). Meanwhile, cultures that resist change can hinder adoption and exacerbate risks, requiring a strategy for continuous transformation.

The results of the study confirm that the success of AI risk management depends on transformational leadership and an adaptive organizational culture. Communicative and ethical leadership and a flexible, learning-oriented culture strengthen an organization's ability to deal with change and technological risks, but cultural resistance can hinder this process and increase risk, requiring a sustainable cultural transformation strategy.

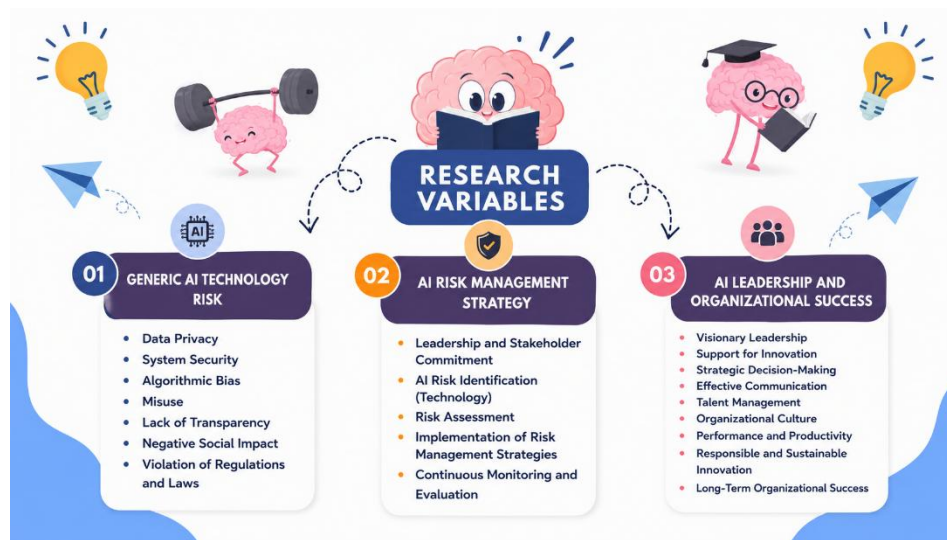


Figure 2. Generative AI Technology Risk Management Strategy

Figure 2 illustrates the complex interrelationship between various risks associated with generative AI technology, risk management strategies, and the role of leadership and organizational culture in effectively managing the impact of this technology. The risks that arise include technical issues such as data security, system vulnerabilities, and output quality, as well as ethical and social issues such as misinformation, algorithmic bias, and regulatory challenges. To address these issues, risk management emphasizes multistakeholder collaboration, ethical governance, and the use of adaptive monitoring and simulation technologies. In addition, transformational leadership and a flexible, communicative, and continuous learning-oriented organizational culture are key factors in aligning AI implementation with organizational values, while overcoming cultural barriers that can hinder optimal technology adoption.

## CONCLUSION

Based on the evaluation results, it can be concluded that business risk management in the era of Generative AI technology requires a holistic and adaptive approach, involving technical aspects, policies, as well as leadership and organizational culture factors. The risks faced are not only technical, but also ethical and regulatory, so mitigation strategies must include cross-sector collaboration, the use of advanced technology for monitoring and simulation, and the formation of a flexible organizational culture and transformational leadership that is communicative and ethical. However, there is a gap in research related to the implementation of comprehensive regulatory policies and organizational culture transformation mechanisms that can accelerate technology adoption while paying closer attention to social and ethical aspects. Therefore, urgent research topics that need to be explored are the development of inclusive generative AI governance and regulatory models and effective organizational culture transformation strategies in the face of technological risk dynamics, aligning innovation with social responsibility and future business sustainability.

## REFERENCE

- Abdelkader, G., Elgazzar, K., & Khamis, A. (2021). Connected vehicles: Technology review, state of the art, challenges and opportunities. *Sensors*, 21(22), 7712. <https://doi.org/10.3390/s21227712>
- Abuhashish, F., & Ismail, I. (2025). Exploring the multi-dimensional risks of generative AI in ethics, technology, and society. Dalam A. Almomani & M. Alauthman (Ed.), *Examining cybersecurity risks produced by generative AI* (hlm. 41–70). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3373-0832-6.ch003>
- Al Yakin, A., Muthmainnah, M., Apriani, E., Obaid, A. J., & Elngar, A. A. (2023). Transforming online learning management: Generative models on ChatGPT to enhance online student engagement scale (OLE). *Idarah (Jurnal Pendidikan dan Kependidikan)*, 7(2). <https://doi.org/10.47766/idadrah.v7i2.1514>
- Alt, T., Ibisch, A., Meiser, C., Wilhelm, A., Zimmer, R., Ditz, J., Dresen, D., Droste, C., Karschau, J., Laus, F., Müller, O., Neu, M., Plaga, R., Plesch, C., Sennewald, B., Thaeren, T., Unverricht, K., & Waurick, S. (2025). *Generative AI models: Opportunities and risks for industry and authorities* (arXiv Preprint No. arXiv:2406.04734v2). arXiv. <https://doi.org/10.48550/arXiv.2406.04734>.
- Budhwar, P., Chowdhury, S., Wood, G., Aguinis, H., Bamber, G. J., Beltran, J. R., Boselie, P., Lee Cooke, F., Decker, S., DeNisi, A., Dey, P. K., Guest, D., Knoblich, A. J., Malik, A., Paauwe, J., Papagiannidis, S., Patel, C., Pereira, V., Ren, S., ... Varma, A. (2023). Human resource management in the age of generative artificial intelligence: Perspectives and research directions on ChatGPT. *Human Resource Management Journal*. <https://doi.org/10.1111/1748-8583.12524>
- Correction to “Human resource management in the age of generative artificial intelligence: Perspectives and research directions on ChatGPT.” (2023). *Human Resource Management Journal*. <https://doi.org/10.1111/1748-8583.12531>
- Ghaffar, R., & Ph, D. (2025). Editorial. *[Journal title not provided]*, 4(1), 1–2.
- Hamed, A. A., Zachara-Szymanska, M., & Wu, X. (2024). Safeguarding authenticity for mitigating the harms of generative AI: Issues, research agenda, and policies for detection, fact-checking, and ethical AI. *iScience*, 27. <https://doi.org/10.1016/j.isci.2024.108782>
- Hu, F., Liu, S., Cheng, X., Guo, P., & Yu, M. (2024). Risks of Generative Artificial Intelligence and Multi-Tool Governance. *Academic Journal of Management and Social Sciences*, 9(2), 88-93. <https://doi.org/10.54097/stvem930>
- McGee, F. (2024). *Approaching emergent risks: An exploratory study into artificial intelligence risk management within financial organisations* (arXiv Preprint No. arXiv:2404.05847). arXiv. <https://doi.org/10.48550/arXiv.2404.05847>
- Murire, O. T. (2024). Artificial intelligence and its role in shaping organizational work practices and culture. *Administrative Sciences*, 14(12), 316. <https://doi.org/10.3390/admsci14120316>
- Ooi, K. B., Tan, G. W. H., Al-Emran, M., Al-Sharafi, M. A., Capatina, A., Chakraborty, A., Dwivedi, Y. K., Huang, T. L., Kar, A. K., Lee, V. H., Loh, X. M., Micu, A., Mikalef, P., Mogaji, E., Pandey, N., Raman, R., Rana, N. P., Sarker, P., Sharma, A., ... Wong, L. W. (2025). The potential of generative artificial intelligence

- across disciplines: Perspectives and future directions. *Journal of Computer Information Systems*. <https://doi.org/10.1080/08874417.2023.2261010>
- Park, A., Kietzmann, J., Killoran, J., Cui, Y. G., van Esch, P., & Dabirian, A. (2024). Nothing is harder to resist than the temptation of AI. *IT Professional*, 25, 13–20. <https://doi.org/10.1109/MITP.2023.3340529>
- PECB. (2018). *ISO 31000 risk management: Training courses & certification*. PECB.
- Rahman, M. J., Zhu, H., & Yue, L. (2024). Does the adoption of artificial intelligence by audit firms and their clients affect audit quality and efficiency? Evidence from China. *Managerial Auditing Journal*, 39(6), 668–699. <https://doi.org/10.1108/MAJ-03-2023-3846>
- Srivastava, A., & Panda, S. (2024). *A formal framework for assessing and mitigating emergent security risks in generative AI models: Bridging theory and dynamic risk mitigation*. NeurIPS 2024.
- Tutar, H., & Güler, S. (2022). Digital leadership as a requirement for the new business ecosystem: A conceptual review. *Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*. <https://doi.org/10.18074/ckuiibfd.1162792>
- Wang, N., Wang, X., & Su, Y. S. (2024). Critical analysis of the technological affordances, challenges and future directions of generative AI in education: A systematic review. *Asia Pacific Journal of Education*. <https://doi.org/10.1080/02188791.2024.2305156>
- Welch, N. (2025). Leadership engagement and organizational culture in AI receptive organizations. *Land Forces Academy Review*, 30(3), 410–422. <https://doi.org/10.2478/raft-2025-0040>
- Zlateva, P., Sivakumar, R., & Velez, D. (2024). Risks and threats in using generative AI. In *Fuzzy systems and data mining X* (Frontiers in Artificial Intelligence and Applications, Vol. 398, pp. 617–626). IOS Press. <https://doi.org/10.3233/FAIA241463>
- Островская, А. А., Денисова, С. Д., Машинистов, В. Е., & Оленев, А. Ю. (2025). Управление рисками продуктов, основанных на генеративном искусственном интеллекте: Risk management for GenAI-based products. *Вестник МИРБИС*, 53–64. <https://doi.org/10.25634/MIRBIS.2025.2.7>