Journal of Management and Tourism Research
Volume 7 Issue 2 - 2025: 177-194

Review Article 04

The Role of Digital Technologies in Managing International Business Risks: A Systematic Literature Review

B.E.A. Jayasekara[1], D.M.H.D. Bandara[2]

[1,2]Department of Science for Technology, Faculty of Technology, University of Sri Jayawardenepura, Sri Lanka
[1]https://orcid.org/0009-0004-7433-5353
[2]https://orcid.org/0009-0006-3928-6925

Abstract

In today's constantly shifting and interconnected global economy, international business operations encounter wide range of risks, including political instability, ambiguity in regulations, financial turmoil and supply chain disruptions. The emergence of advanced digital technologies offers significant opportunities for companies to detect, counteract, and adjust to such risks. However, the current body of knowledge is still dispersed, with limited integration of digital transformation into the discussion of international business risk management. Thus, the study aims to critically examine how digital tools specifically manage risks and uncertainty in international operations, an area that has not received adequate attention in previous research. The methodology used in this paper is systematic literature review using a sample of 60 publications published in the period of 2015–2025 in this context. The findings elaborate the benefits of implementation of such technologies, such as increased foresight, responsiveness, and risk management, and the drawbacks, such as the cost of implementation, quality of data, and cybersecurity, and the preparedness of an organization. Furthermore, based on the findings the study identifies four core domains of digital tools adoption via thematic coding. The study concludes with providing significant insights for business practitioners, policy makers and scholars to promote adaptable, ethically sound and inclusive techniques towards digital risk management. Moreover, the review expands both practical and academic knowledge on how digital innovation is reshaping worldwide risk resilience.

Keywords: Digital technologies, international business risks, organizational resilience, risk management

Corresponding Author: B.E.A. Jayasekara – eranga@sjp.ac.lk
Submitted: July 13, 2025; Revised: January 05, 2026; Accepted: January 24, 2026

Introduction

In an era characterized by enhanced global interconnectivity, international business operations are progressively vulnerable to a broad spectrum of risks and uncertainties. International corporations face a number of challenges on a constant basis in this context, including political instability, currency fluctuations, cultural contradictions, cyberattacks and disruptions of global supply chain (Idris et al., 2024). Thus, traditional risk management structures, while fundamental, frequently fall short in the face of complexity, volatility and the speed of modern contexts of global businesses.

Against this backdrop, the revolution marked by digital transformation that requires the adoption and implementation of new technologies that enable changing operational paradigms as well as transform the ways businesses perceive, detect and mitigate international business risks has become characterized by artificial intelligence (AI), big data analytics, internet of things (IoT) and cloud computing (Cennamo et al., 2020). These digital risk management tools enable real-time monitoring of the global changes, predictive analysis of the market dynamics, and automated compliance in a fast-changing regulatory environment (Peterson, 2025).

Despite the growing recognition of the incorporation of digital technologies in business strategies of international corporations, there is still an absence of comprehensive knowledge on the methodical application of digital tools in managing international business risks (Uršič & Čater, 2025). For example, Kaufmann discusses the implications of digitalization on traditional regulations and accountability in business conduct, yet it remains critical to examine how these technologies might become included into sophisticated risk management frameworks (Kaufmann, 2021). Additionally, most of the research concentrates on technology adoption or innovative performance (Blichfeldt & Faullant, 2021; Faiz et al., 2024), the specific function of digital tools in minimizing global risks in businesses remains underexplored. Such inadequacy of synthesis prevents scholars and practitioners in full comprehension of the strategic opportunities and constraints of digital risk management in the international business environment. Furthermore, there is a scarcity of studies that comprehensively analyse multiple digital technologies in relation to a wide range of international risks (e.g., political, operational, financial, cyber, and environmental) (Bostelmann, 2024). Another gap in the current knowledge is that most of the available literature is contextually limited, focusing on larger companies in developed countries (Marino-Romero & Folgado-Fernández, 2024) and offering a lack of understanding of small and medium-scale international companies functioning in emerging economies.

The study aims to make a substantial contribution to the knowledge base on the contexts of digital technologies and international business risk management through a systematic review of the existing literature. The review provides an integrated synthesis, which critically analyses how digital technologies are actively employed to mitigate, predict, or adjust to the risks of international business. And, beyond consideration of technological adoption, the study explores how digital tools specifically lower risks and uncertainty in international operations, an area that has not received adequate attention in previous research. Additionally, the review takes a cross-disciplinary perspective, informed by international business, strategic management, risk theory and digital innovation bodies of literature (Luo, 2021; Meyer et al., 2023) to come up with an inclusive picture of the digital tools and strategies used to handle global risks.

Along with that the study offers valuable insight for businesses engage in international markets on digital capabilities that can improve resilience, responsiveness and strategic foresight. Also, the findings can inform policymakers and international trade organizations to establish favorable regulatory frameworks and infrastructure to make technology-based risk

management possible in international trade. Finally, this study also lays the foundation for future research streams at the interconnectedness of digital transformation and international risk management.

Literature Review

The international business environment is inherently volatile with the influence of numerous unpredictable and interdependent elements. Several studies such as (Ali et al., 2021; S. Cavusgil et al., 2020; S. T. Cavusgil et al., 2020), categorize international business risks into several dimensions: political risks (e.g. expropriation and unstable regulations), financial and economic risks (e.g. currency fluctuations and credit limitations), organizational and cultural risks (e.g. misalignment with local standards, poor legal frameworks) and operational risks (e.g. inefficiencies in supply chain). The increase in globalization and the interconnection of people have significantly increased the level and the speed of risk transmission in the global markets. Studies suggest that the instability induced in any geographical area can quickly spread across to other areas through the interconnected financial institutions and market channels, thus creating systemic risk (Cevik et al., 2024).

Despite the development of traditional risk management frameworks such as, scenario planning, insurance instruments and hedging strategies (Cairns, 2014; Kumar, 2024), recent studies indicate that these models are becoming less effective at addressing the dynamic and real-time nature of contemporary international business risks (Balaji et al., 2024; Faedfar et al., 2022).

Emergence of Digital Technologies in Risk Management

The rise of digital technologies has been a major factor in the evolution of international business risk management, which has profoundly changed how global businesses recognize, mitigate and handle risks in a complicated and interconnected global environment. The development of AI, big data analytics, cloud computing, and the Internet of Things (IoT) technologies has grown significantly, bringing new high-tech tools and practices that allow companies to make mature decisions, creating greater resilience in operations, and ensuring compliance with regulatory frameworks on a multi-jurisdictional basis (Simões et al., 2021; Ullagaddi, 2024).

One prominent aspect of digital transformation is its role in enhancing risk mitigation strategies across various industries. For instance, Machine learning (ML) and AI have widely recognized because of their potential in predictive risk analytics. These methods enable making real-time decisions under uncertainty by monitoring the signals of political, financial, and market dynamics on a constant basis (Soori et al., 2023; Tian et al., 2025). Furthermore, the advancement of digital technologies is not only addressing operational risks in businesses but also significantly influencing stakeholder safety and regulatory adherence. For example, Ullagaddi notes that in the pharmaceutical manufacturing sector, digital technologies such as AI and blockchain greatly improve risk management by assuring universal accessibility to high-quality medications and safeguarding patient safety (Ullagaddi, 2024).

However, studies mention that there have been some issues concerning the incorporation of digital technologies into risk management of international businesses. These firms encounter significant obstacles such as data privacy issues, cybersecurity threats and complexities arising from legacy systems (Holloway, 2024). As international organizations seek to embrace digital technologies, they must negotiate these vulnerabilities while reaping the benefits of such innovations. Furthermore, research has elaborated that the availability of skilled huma

resource to execute these innovative technologies in their operation might be another concern, specifically for small international enterprises (Gadzali et al., 2023). Thus, the human element is crucial in managing digital risks as employees need to be adequately trained to manage novel technologies and procedures.

In this context, one of the key emphases is made on the small and medium-sized enterprises (SMEs) which have now been extensively recognized as the key drivers of economic growth (Fajarika et al., 2024). In this regard, their ability to absorb the modern digital technologies has the potential to significantly mitigate the systemic risks in the wider economy. According to Wang's systematic review, the process of digitalization of risk management in SMEs involves predicting possible hazards and taking proactive measures to prevent them using specialized risk management systems that are integrated with digital tools (Wang, 2023). Nonetheless, studies suggest that incorporating advanced technologies into SMEs' operations, including risk management, is a significant challenge as they often function with limited resources, infrastructure and limited access to technology (Omowole et al., 2024; Ugwu, J. N., Silaji, T., Kule, A. M., & Ongesa, 2024).

In addition, crises such as the COVID-19 pandemic have only hastened the adoption of digital technologies in many areas, necessitating an urgent re-evaluation of risk management procedures. Digital solutions led to the impressive level of flexibility entered by companies during the pandemic, improving their ability to handle supply chain failures and shifting consumer trends (Simões et al., 2021). Thus, the incorporation of digital technologies has grown into an essential element of strategic risk management frameworks rather than just a value addition.

Digitalization and Political Risk Mitigation

The correlation between digitalization and political risk management in international firms is set on the balance of technological progress and geopolitical dynamics. The growing proliferation of the use of digital technologies has altered the face of risk management that requires a critical examination of how digital technologies can help firms to manage political uncertainties.

Digital technologies enhance organizational agility in responding to political risks by enabling firms to gather and analyse an enormous volume of data in real time. With this capacity, companies can better predict political events, geopolitical conflicts, and regulatory shifts (Iftikhar et al., 2025). For instance, corporations that employ big data analytics and AI have found to be more effective at predicting political outcomes and gauging public attitude, allowing them to modify their strategies accordingly (Collington, 2021). Moreover, Volodenkov et al. emphasize the role of digital technologies in promoting insights into political trends that influence business conditions and, thus, help companies develop responsive business plans to reduce the risks of unstable political conditions (Volodenkov et al., 2022). However, studies have demonstrated that the effectiveness of these technological tools varies by context. For instance, algorithm models frequently lack context-specific intelligence required for interpreting political changes in unstable governments or regimes that are authoritarian (Peters, 2022). Additionally, the concept of digitalization and the political risks mitigation also come in touch with the larger societal implications, such as social inequality and the welfare of the community. With the spread of digital technologies, existing power balances can be disrupted and cause increased inequalities both within and among nations (Jafari & Jafari, 2022). Digital solutions implementation has the potential to involuntarily alienate certain groups of the population, leading to political backlash which might negatively impacts on the operations of international businesses (Comi et al., 2022).

Nonetheless, digital tools facilitate enhanced collaboration and communication across international boundaries, which is essential for global corporations operating in a variety of political settings. Studies illustrate that such international firms increasingly integrate digital platforms to stay in touch with multiple stakeholders, such as local communities, regulatory agencies and representatives from governments (Anglani et al., 2023; Nikiporets-Takigawa & Avcinova, 2018). Moreover, studies mention that the utilization of digital tools to engage stakeholders enhances transparency of the operations and allows immediate responses to growing political issues, which are essential for international firms to navigate complex political environments and establish effective strategies accordingly (Johnson et al., 2024).

However, digital tools in international businesses can be a double-edged sword. Research argues that vulnerabilities may increase with the emergence of digital platforms, as companies are more exposed to cyber-attacks and other forms of misinformation campaigns that can undermine the political stability and corporate reliability (Feldstein, 2021). Moreover, the shift to digitalized communication has the potential of misleading information and poses significant risks to international businesses that end up operating in different jurisdictions with different levels of media freedom and political sensitivities (Vasist et al., 2023). Therefore, although technology helps improve the rate and scope of political risk monitoring, it cannot fully substitute the local knowledge or the role of diplomacy.

Thus, to safeguard themselves from this complicated landscape that defines modern international political settings, organizations must embrace a holistic strategy that integrates technology, ethical considerations, and proper regulatory compliance frameworks. In addition to that, a constant application, attention to detail, and stakeholder engagement is necessary for international organizations that utilize digital tools to mitigate political risks and uncertainties.

Financial and Currency Risk Management using Digital Tools

The digital technologies have significantly evolved the financial and currency risk management in international businesses. Exploiting the potential of digital tools not only facilitates the streamlining of financial activities but also improves the risk assessment and risk mitigation abilities of a firm (Onwubuariri et al., 2024). Against the backdrop of a more globalized economy, the role of digitalization in financial and currency risk management has turned out to be both essential and complicated.

One of the most significant features of using digital tools in financial risk management is that they offer real-time analysis of data. Studies elaborate that using the big data analytics technology, firms will be able to track down market fluctuations and currency fluctuations in a more efficient way than before (Daniel et al., 2024). Furthermore, studies have shown that fintech solutions allow real-time tracking of market developments, credit scores and exchange rates, and AI models are developed to identify possible currency risks based on geopolitical events (Ramachandran, 2024). Additionally, Andreeva mentions in her research that the implementation of data-driven financial risk management systems can significantly boost the ability to detect and respond to risks, which is crucial for corporations engaged in international transactions (Andreeva et al., 2021). In contrast, critics argue that automated reactions and herd behaviors may cause algorithmic trading and digital risk frameworks to increase systemic risks during crises (Min & Borch, 2022). Moreover, studies illustrate that the usage of automated systems generates concerns about cybersecurity hazards as excessive dependence on digital platforms make business more vulnerable to data security issues, particularly in the field of finance (Adejumo & Ogburie, 2025).

Along with that, numerous studies have demonstrated that the introduction of fintech solutions into the traditional processes has also made the paradigm of financial risk management even

more complicated. Digital finance systems, including mobile banking and online payment systems, are becoming popular in many businesses to facilitate their financial transactions and to mitigate currency risk (Avira et al., 2023; Nandiroh et al., 2024). For instance, Mhlanga discusses how the development of digital finance tools that integrate technologies like AI, makes it easier for customers to conduct transactions internationally while requiring companies to maintain efficient risk management procedures (Mhlanga, 2020). On the other hand, studies also present the occurrence of a digital disparity in risk resilience across firms as some international businesses, such as SMEs, frequently lack financial and technical capabilities to implement advanced digital financial risk solutions (Jun & Ran, 2024). Thus, businesses that have failed to embrace the evolving technologies are at risk of being outcompeted by other firms that are quick to adapt to the new technological changes and able to use advanced digital tools to overcome financial risks (Makhanya, 2024).

Considering these assessments, international businesses have to be proactive in managing their digital financial risk. This includes the adoption of technological innovation and the creation of a complete risk management frameworks that involve every element of digital finance (Zhelev & Kostova, 2024). Moreover, in order to manage the complications of currency risks in an uncertain global market, companies need to use sensitivity analysis, scenario planning and other digitally supported strategic decision-making tools (Kaur et al., 2021).

Operational and Supply Chain Risk Management

In the environment of globalization and improvement of technologies, the assessment of the operational and supply chain risk management in international businesses has gained great importance. The dynamic nature of the interaction process among the different international markets, as well as the complexities that arise due to increased competition and uncertainties, requires a fully integrated framework that is efficient in managing the risks involved in the operation and supply chains (Guo et al., 2025). The resilience and adaptability of organizations in the wake of multifaceted risks in operational and supply chain management cannot be complete without digital tools, frameworks, and methodologies.

Studies have mentioned that digital technologies, specifically cloud computing, big data analytics and blockchain, facilitate enhanced visibility and collaboration among supply chain partners, allowing international businesses to respond immediately to disruptions, forecast demand and manage inventories (Fernando et al., 2023). Furthermore, Fernando suggests that cloud-based solutions, which promote real-time data exchange, allow businesses to monitor operations and maintain the flexibility necessary to respond to external shocks like the Covid-19 pandemic or variations in consumer preferences (Fernando et al., 2023). This adaptability is critical for maintaining a competitive edge in a dynamic global marketplace. However, most of the studies overlook the potential barriers when integrating digital tools for supply chain risk management. A major area of concern is the problem of digital capability asymmetry between supply chain partners, especially the larger firms and the smaller suppliers. Son et al. underline that the digital capabilities gap presents an opportunity to develop buyer opportunism, where firms can use their technological superiority over less digitally advanced suppliers, which may create vulnerabilities and disrupt the relationships in supply chains (Son et al., 2021).

Nonetheless, many studies emphasize the importance of incorporating big data analytics in supply chains to evaluate supplier performance, analyse global market trends and proactively identify possible risks and uncertainties (Ivanyan et al., 2023). With the help of such analysis, international firms can predict disruptions with the help of the historical data and simulate different scenarios, which will lead to informed decisions and solid risk mitigation plans. And,

numerous studies view proper risk management as a proactive activity, which utilizes digital tools to encourage resiliency and adaptability at various points of the supply chain (Olawale et al., 2024). However, navigating potential cybersecurity risks in digitalized supply chains poses significant challenges for international businesses. Recent research points out that in case cybersecurity risks are not addressed effectively, it may lead to serious disruption and financial losses throughout the supply chain, and thus, a comprehensive approach with the inclusion of cybersecurity and general risk management practices is a necessity (Sağlam et al., 2020; Sobb et al., 2020). Furthermore, studies illustrate that, while the benefits of digitalized risk management in supply chains are significant, risks of an over-reliance on technology include potential algorithmic bias, the demise of human supervision, and ethical issues around data processing are also present among most of the companies (Zouari et al., 2020).

In essence, digital tools play a great role in enhancing the operational and supply chain risk management of international businesses, offering better visibility, responsiveness, and predictive powers. Nevertheless, the issues of supplier digital capability asymmetry, cybersecurity risks, and the intricacy of risk modelling should be managed successfully to truly realize these advantages. Thus, organizations that leverage digital solutions must implement comprehensive risk management strategies that prioritize flexibility, collaboration and ethical principles, ultimately delivering resilience in an unpredictable global market.

Research Methodology

The study adopts a systematic literature review (SLR) approach to synthesize the current knowledge on the role of digital technologies in managing international business risks. Compared to traditional narrative review, systematic review recognizes, selects and analyses relevant studies using a methodical, transparent and repeatable process (Williams Jr et al., 2020). Moreover, the methodology followed the PRISMA 2020 guidelines (Page et al., 2021), ensuring transparency, rigor, and replicability.

The sample of publications are critically appraised and synthesizes quantitative findings. The systematic approach allowed the study to reduce selection bias, improve transparency, and offer a thorough overview of the developing literature linking international business risk management with digital technologies(Shaheen et al., 2023).

Search Strategy

Comprehensive and systematic searches have been conducted using scholarly databases such as Scopus, Web of Science, Google Scholar, and Emerald Insight, as these databases index high-quality peer-reviewed journals in international business, management, and technology studies. The search covered articles published between 2015 and 2025 to assess both early conceptual developments and recent technological advancements.

Search strings were developed using combinations of keywords such as *international business risk*, *uncertainty*, *resilience, digital technologies*, *artificial intelligence*, *blockchain*, *big data*, and *risk management*. Boolean operators (AND/OR) were used to refine the search and ensure coverage across multiple disciplines.

Inclusion Criteria

- Studies that highlight the relationship between digital technologies and risk management.
- Peer-reviewed journal articles (Empirical studies, review papers and concept papers)

Exclusion Criteria

- Articles that focus on domestic or general IT implementation.
- Studies that solely focus on technical or engineering aspects without business applications.

Study Selection Process

The initial database search identified 1480 records, of which 1120 remained after removing duplicates. After the screening of Titles and Abstracts for relevance, 315 articles met the initial criteria. Full-text assessment was conducted on 315 articles. 79 articles were chosen as appropriate after their theoretical focus, methodological reliability and relevance were assessed. And, after quality appraisal, a total of 60 articles were included in the final synthesis.

The following PRISMA flow diagram shows a detailed summary of the selection process.

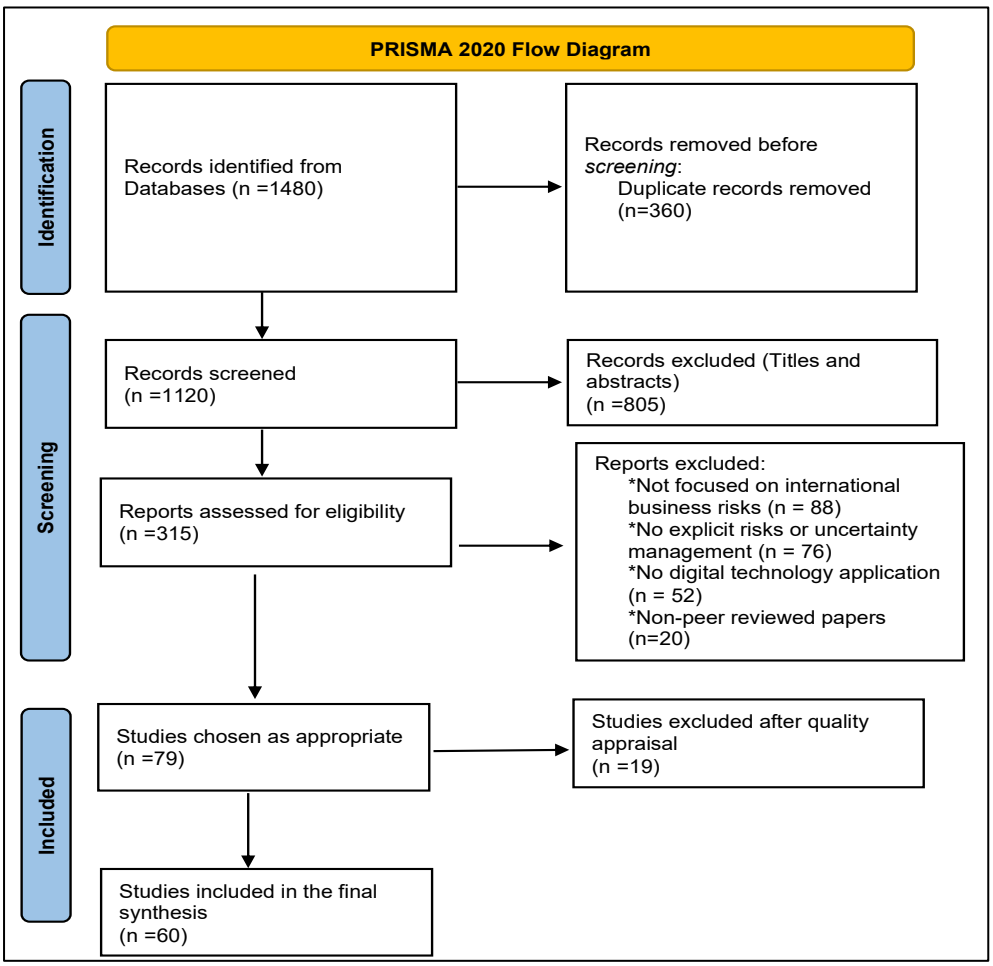

Figure 1: PRISMA Flow Diagram
Source: PRISMA 2020 statement (Page et al., 2021)

Sampling Technique

Adhering to best practices of narrative reviews, a purposive sampling approach was used in which papers were selected on the basis of theoretical contribution, methodological rigor, geographical focus and relevance.

Population and Unit of Analysis

The population for this study refers to the body scholarly literature relevant to the review topic. The unit of analysis includes peer-reviewed journal articles and reports which are of high quality and discussing about advanced digital tools regarding international business risk management.

Results and Interpretations

This section is an integrated analysis of the insights derived from systematic review of literature regarding digitalization of risk management strategies of international businesses. The following themes are organized based on the analysis of literature regarding risk management in international businesses.

Artificial Intelligence (AI) and Predictive Analytics in Risk Identification

Recent studies have elaborated that AI and machine learning algorithms have become popular to forecast and track business risks associated to international businesses especially financial fluctuations, geopolitical issues, and market shocks (Balan et al., 2025; Olanrewaju, 2025). Furthermore, it is illustrated that these technologies enable to create risk signals in real time by scanning large databases such as news, social media and regulatory dynamics.

According to the findings it is understood that, AI improves the speed of decision-making and accuracy of forecast, which creates a more timely and knowledgeable response to possible risks (Mishra, 2024). Using large datasets and assigning high-level patterns that may be imperceptible to a person, AI-based systems can identify risks and predict them more quickly and reliably, which will make it possible to eliminate the risks in a timely fashion more efficiently (Yousaf, 2022).

Moreover, according to the studies. AI facilitates credit risk models that can simulate multiple economic and business scenarios to evaluate potential risks for international businesses (Shen, 2024). However, the findings also suggest that AI-based risk management systems can lead to algorithmic bias, which can lead to unfair outcomes that amplify the risks (Hanna et al., 2025). Furthermore, some studies mention that AI and machine learning systems sometimes lack data quality which may lead to inaccuracies of predictions (Ajuzieogu, 2024).

Blockchains and Supply Chain Transparency

In recent studies, blockchains has been extensively cited as a tool to improve accountability, transparency and trustworthiness of international supply chains (Sunny et al., 2020; Sylvestre & Extension, 2024). Moreover, studies mention that blockchain technology can greatly reduce threats of counterfeited products, logistics issues and failure to adhere to international policies. Blockchain can be used to create reviewable, irreversible and verified account of transactions and product movements, which is why it can increase confidence and performance in supply chains (William et al., 2025). However, critiques argue that the adoption of blockchains in supply chains often limited by factors such as high implementation costs, occurrence of interoperability issues and regulatory uncertainties (Kumar et al., 2025).

Internet of things (IoT) and Operational Resilience

The findings suggest that sensors on IoT are used to determine the real time state of an asset such as containers and machinery to help avoid failures, thefts and environmental violations (Salamai, 2021). These sensors have the ability to gather information on location, temperature, vibration and other aspects and relay them wirelessly to a central system which is analysed and alerts sent. This proactive system enables their timely management of maintenance, security of theft, and environment (Sallam et al., 2023). Furthermore, studies mention that IoT is widely used in manufacturing and energy sector organizations for automation, enhance safety and mitigate risks (Garg et al., 2022).

Despite of its significance, studies have emphasised that vulnerabilities of IoT systems might lead to the development of new international risk vectors, particularly when cross-border data is transmitted due to its interconnectedness and the possibility of malicious actors to exploit the security weaknesses (Rana & Patil, 2023).

Organizational Digital Capabilities and Governance of Risk Technology

Considering the findings of previous studies it is clear that a better success in integrating digital tools in international risk management can be achieved by firms with clear digital strategy, data infrastructure, and leadership commitment in the process of embedding digital tools in international risk management (AlNuaimi et al., 2022; Johnson, 2025). However, the existing literature fails to clarify how corporations overcome internal resistance, skill gaps and legacy systems in international sectors when digitalizing their risk management procedures. Moreover, studies elaborate that adoption of digital technologies necessitates adjustments in culture within organizations, particularly among global teams accustomed to manual, intuition-based risk decisions (Bozkuş, 2023). Furthermore, it is understood that international firms that become digitally fluent with learning cultures create resilient capabilities, which enhances long term resilience.

Synthesis of Thematic Findings

Table 1: Synthesis of Thematic Findings

Theme	Digital Tools	Risk Types Managed	Outcomes
AI & Predictive Analytics	AI risk engines, Machine learnings	Political, Financial, Reputational	Prior alert, Enhanced foresight
Blockchain	Distributed ledgers, smart contracts	Supply chain, Legal, Compliance	Traceability, Automated compliance
Internet of Things (IoT)	Sensors, simulators, geo-trackers	Operational, Environmental	Asset protection, Scenario planning
Organizational Capabilities & Strategy	ERM integration, change management tools	All domains	Resilience, Digital transformation

Source: Developed by the authors based on reviewed literature

Discussion of Findings in Relation to Current Literature

An organized summary of how digital technologies are used to manage international business risks is mentioned in Table 1. Aligning with earlier research artificial intelligence and big data analytics are most frequently studied for managing operational, political and financial risks (Carvalho et al., 2022; Faisal et al., 2025). This supports earlier arguments that data-driven decision-making enhances firms' ability to anticipate and respond to uncertainty in international markets.

The significant focus on blockchain solutions for enhancing supply chain transparency corresponds with research underscoring the increasing need for trust, traceability, and compliance in cross-border transactions (Wamba & Queiroz, 2022). Additionally, the findings indicate that blockchain adoption primarily occurs among multinational corporations, echoing concerns documented in the literature about the high costs and interoperability issues faced by small and medium-sized enterprises (Alimohammadlou & Alinejad, 2023).

Moreover findings regarding IoT support earlier research indicating that real-time monitoring and simulation capabilities can substantially mitigate disruption risks within international value chains (Oladele, 2024).. Nonetheless, existing literature reveals that these technologies also introduce new cybersecurity vulnerabilities that empirical studies have yet to adequately address.

Importantly the findings highlight an issue, cultural, institutional, and reputational risks are often overlooked in digital risk management studies. This observation aligns with earlier concerns that international business research focuses more on measurable risks instead of the softer, more contextual uncertainties (Wedraogo et al., 2023). By pointing this out, this study aims to broaden the discussion by identifying both prominent research areas and the risk factors that need more attention.

Conclusion and Recommendation

The study aims to highlight the growing prominence of digital tools like AI, machine learning, IoT and blockchain in mitigating political, operational and regulatory risks in international corporate activities. The review identified four significant thematic clusters where digital technologies are used to support risk management: (1) AI for predictive analytics and prior warning systems, (2) blockchain for transparency of supply chains and legal compliance, (3) IoT and digital twins and operational resilience and (4) company capability and strategic alignment towards digital adoption.

Despite the significance of digitalized risk management systems such as improved decision making, enhanced forecasting and greater resilience, the analysis of existing research identifies potential barriers and drawbacks of these digital tools. Cyber security threats and algorithmic biasness have been frequently highlighted in prior research along with barriers such as high implementation costs and regulatory uncertainties as major drawbacks of digitalization risk management in international firms.

Thus, this review emphasizes that a shift in the nature of isolated technological application to strategic, integrated and context-sensitive approaches to digital risk management in international business is required.

According to the findings of this analysis, this study presents significant insights for practitioners, policymakers and academics.

As most of the studies highlight the benefits of digital tools in risk management, international businesses should include AI, blockchain, big data analytic tools into their organizational managerial frameworks rather than considering them an independent technology. Furthermore, numerous studies have mentioned that unavailability of skilled personnel regarding these technologies presents a significant barrier for the adoption. Thus, international firms should make more investments in staff training, digital literacy and change management to ensure the effective adoption of digital tools in risk management. Additionally, international corporations, particularly small and medium-sized firms often operate with limited financial capabilities. Therefore, digital risk management can be made cost effective through the use of cloud-based risk platform services and open-source analytics tools. As data security risks have been widely discussed in this context, policymakers are recommended to implement interoperable systems and data sharing protocols to guarantee consistency and regulatory compliance. Furthermore, they should promote digital infrastructure and connectivity by expanding broadband access, data protection systems, and digital public goods into developing areas can assist equal access to digital risk tools.

In final note, future researchers are encouraged to conduct more empirical research on how digital tools manage organizational, cultural, reputational and ethical risks in international context. Moreover, the mechanisms of digital risk management should be explained by future studies based on the combination of resource-based, institutional, and dynamic capability theories as theoretical underpinning was often lack in prior studies.

References

Adejumo, A., & Ogburie, C. (2025). Strengthening finance with cybersecurity: Ensuring safer digital transactions. *World Journal of Advanced Research and Reviews*, *Volume 25*. https://doi.org/10.30574/wjarr.2025.25.3.0908

Ajuzieogu, U. (2024). *AI Data Quality and Bias: Challenges, Implications, and Solutions in Modern Machine Learning*. https://doi.org/10.13140/RG.2.2.25830.02880

Ali, T., Butt, A., Arslan, A., Tarba, S. Y., Sniazhko, S. A., & Kontkanen, M. (2021). International Projects and Political Risk Management by Multinational Enterprises: Insights From Multiple Emerging Markets. In *International Marketing Review*. https://doi.org/10.1108/imr-03-2020-0060

Alimohammadlou, M., & Alinejad, S. (2023). Challenges of blockchain implementation in SMEs' supply chains: an integrated IT2F-BWM and IT2F-DEMATEL method. *Electronic Commerce Research*, *25*, 907–949. https://doi.org/10.1007/s10660-023-09696-3

AlNuaimi, B. K., Kumar Singh, S., Ren, S., Budhwar, P., & Vorobyev, D. (2022). Mastering digital transformation: The nexus between leadership, agility, and digital strategy. *Journal of Business Research*, *145*, 636–648. https://doi.org/https://doi.org/10.1016/j.jbusres.2022.03.038

Andreeva, L. Y., Alukhanyan, A., Andreeva, O., & Selivanova, A. (2021). Technologies for Ensuring Financial Security of the Banking System in Conditions of Informational Alteration of Business. In *E3s Web of Conferences*. https://doi.org/10.1051/e3sconf/202127308096

Anglani, F., Pennetta, S., Reaiche, C., & Boyle, S. (2023). Crossing digital frontiers with cultural intelligence - a new paradigm for project managers. *International Journal of Project Management*, *41*(8), 102543. https://doi.org/https://doi.org/10.1016/j.ijproman.2023.102543

Avira, S., Rofiah, R., Setyaningsih, E., & Utami, S. S. (2023). Digital Transformation in Financial Management: Harnessing Technology for Business Success. In *Influence International Journal of Science Review*. https://doi.org/10.54783/influencejournal.v5i2.161

Balaji, S., Shreshta, L., & Sujatha, K. (2024). A Study on Risk Management in Corporate Business. *Involvement International Journal of Business*, *1*, 197–209. https://doi.org/10.62569/iijb.v1i3.26

Balan, G. S., Kumar, V. S., & Raj, S. A. (2025). Machine learning and artificial intelligence methods and applications for post-crisis supply chain resiliency and recovery. *Supply Chain Analytics*, *10*, 100121. https://doi.org/https://doi.org/10.1016/j.sca.2025.100121

Blichfeldt, H., & Faullant, R. (2021). Performance effects of digital technology adoption and product & service innovation – A process-industry perspective. *Technovation*, *105*, 102275. https://doi.org/https://doi.org/10.1016/j.technovation.2021.102275

Bostelmann, L. (2024). *Digital technologies and environmental performance: a curvilinear effects estimation*. https://epubl.ktu.edu/object/elaba:197810150/%0Ahttps://epubl.ktu.edu/object/elaba:197810150/197810150.pdf

Bozkuş, K. (2023). *Organizational Culture Change and Technology: Navigating the Digital Transformation*. https://doi.org/10.5772/intechopen.112903

Cairns, A. J. G. (2014). Hedging and Risk Management. *Wiley StatsRef: Statistics Reference Online*, *November*, 1–20. https://doi.org/10.1002/9781118445112.stat04704

Carvalho, M. C., Gonçalves, R., Lopes da Costa, R., Pereira, L. F., & Dias, A. (2022). Contributions of Artificial Intelligence in Operational Risk Management. *International Journal of Intelligent Information Technologies*, *18*(1). https://doi.org/https://doi.org/10.4018/IJIIT.296237

Cavusgil, S., Deligonul, S., Ghauri, P., Bamiatzi, V., Park, B. Il, & Mellahi, K. (2020). Risk in international business and its mitigation. *Journal of World Business*, *55*, 101078. https://doi.org/10.1016/j.jwb.2020.101078

Cavusgil, S. T., Deligonul, S., Ghauri, P. N., Bamiatzi, V., Park, B. Il, & Mellahi, K. (2020). Risk in international business and its mitigation. *Journal of World Business*, *55*(2). https://doi.org/10.1016/j.jwb.2020.101078

Cennamo, C., Dagnino, G. B., Minin, A. Di, & Lanzolla, G. (2020). Managing Digital Transformation: Scope of Transformation and Modalities of Value Co-Generation and Delivery. In *California Management Review*. https://doi.org/10.1177/0008125620942136

Cevik, E. I., Caliskan Terzioglu, H., Kilic, Y., Bugan, M. F., & Dibooglu, S. (2024). Interconnectedness and systemic risk: Evidence from global stock markets. *Research in International Business and Finance*, *69*, 102282. https://doi.org/https://doi.org/10.1016/j.ribaf.2024.102282

Collington, R. (2021). Disrupting the Welfare State? Digitalisation and the Retrenchment of Public Sector Capacity. In *New Political Economy*. https://doi.org/10.1080/13563467.2021.1952559

Comi, M., Smith, S., Goettlich, W., Alexander, P., Davidson, D., & Staples, W. G. (2022). Digital Home-Lessness: Exploring the Links Between Public Internet Access, Technological Capital, and Social Inequality. In *Current Sociology*. https://doi.org/10.1177/00113921221111819

Daniel, S., Brightwood, S., & Oluwaseyi, J. (2024). *Financial big data analytics and risk management*.

Faedfar, S., Özyeşil, M., Çıkrıkçı, M., & Benhür Aktürk, E. (2022). Effective Risk Management and Sustainable Corporate Performance Integrating Innovation and Intellectual Capital: An Application on Istanbul Exchange Market. *Sustainability*, *14*(18). https://doi.org/10.3390/su141811532

Faisal, S. M. W., Abdullah, S., Ahmed, A., Asiri, A., Barboza-Sanchez, L., Jesus, Oladepo, O., Hamdache, A., Wasif, S., & Shahid, I. (2025). *Artificial Intelligence, Data Analytics, and Financial Systems: A Comprehensive Review of Their Synergy in Shaping Business Management and Economic Strategies*.

Faiz, F., Le, V., & Masli, E. K. (2024). Determinants of digital technology adoption in innovative SMEs. *Journal of Innovation & Knowledge*, *9*(4), 100610. https://doi.org/https://doi.org/10.1016/j.jik.2024.100610

Fajarika, D., Trapsilawati, F., & Sopha, B. M. (2024). Influential factors of small and medium-sized enterprises growth across developed and developing countries: A systematic literature review. *International Journal of Engineering Business Management*, *16*, 18479790241258096. https://doi.org/10.1177/18479790241258097

Feldstein, S. (2021). *The Rise of Digital Repression*. https://doi.org/10.1093/oso/9780190057497.001.0001

Fernando, Y., Al-Madani, M. H. M., & Shaharudin, M. S. (2023). COVID-19 and Global Supply Chain Risks Mitigation: Systematic Review Using a Scientometric Technique. In *Journal of Science and Technology Policy Management*. https://doi.org/10.1108/jstpm-01-2022-0013

Gadzali, S. S., Gazalin, J., Sutrisno, S., Prasetya, Y. B., & Ausat, A. M. A. (2023). Human Resource Management Strategy in Organisational Digital Transformation. In *Jurnal Minfo Polgan*. https://doi.org/10.33395/jmp.v12i1.12508

Garg, K., Goswami, C., Chhatrawat, R. S., Kumar Dhakar, S., & Kumar, G. (2022). Internet of things in manufacturing: A review. *Materials Today: Proceedings*, *51*, 286–288. https://doi.org/https://doi.org/10.1016/j.matpr.2021.05.321

Guo, Y., Liu, F., Song, J.-S., & Wang, S. (2025). Supply chain resilience: A review from the inventory management perspective. *Fundamental Research*, *5*(2), 450–463. https://doi.org/https://doi.org/10.1016/j.fmre.2024.08.002

Hanna, M. G., Pantanowitz, L., Jackson, B., Palmer, O., Visweswaran, S., Pantanowitz, J., Deebajah, M., & Rashidi, H. H. (2025). Ethical and Bias Considerations in Artificial Intelligence/Machine Learning. *Modern Pathology*, *38*(3), 100686. https://doi.org/https://doi.org/10.1016/j.modpat.2024.100686

Holloway, S. (2024). *Exploring the Role of Digital Technologies in Enhancing Supply Chain Efficiency and Marketing Effectiveness*. https://doi.org/10.20944/preprints202406.1538.v1

Idris, M., Nurhadi, N., & Sakinah, S. (2024). Challenges and Opportunities in International Business Management. *Advances in Business & Industrial Marketing Research*, *2*, 179–189. https://doi.org/10.60079/abim.v2i3.309

Iftikhar, A., Ali, I., Zhan, Y., Stevenson, M., & Tarba, S. Y. (2025). Firms' strategic responses to rising uncertainty amid ongoing geopolitical tensions: The synergistic mediating role of network capability and innovation ambidexterity. *Transportation Research Part E: Logistics and Transportation Review*, *199*, 104146. https://doi.org/https://doi.org/10.1016/j.tre.2025.104146

Ivanyan, A., Saleem, M., Maina, J., Loida, A., Cabaraban, Olanipekun, L., & Singh, J. (2023). *The Use of Big Data Analytics to Improve Supply Chain Efficiency and Resilience*. *1*, 52–69. https://doi.org/10.5281/zenodo.10055138

Jafari, Z., & Jafari, M. (2022). *Social Media as a Political Arena: A Qualitative Analysis of Online Activism*. https://doi.org/10.61838/kman.isslp.1.2.4

Johnson, A., Lindgren, S., & Azlaan, M. (2024). *Recommendations for Policymakers: Encouraging stakeholder engagement and transparency*.

Johnson Mary, B. (2025). *Digital Risk Management Tools and Their Financial Impact on Supply Chain Resilience*.

Jun, W., & Ran, X. Q. (2024). Dynamics in digital finance and its impact on SME financing. *Heliyon*, *10*(9), e30586. https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e30586

Kaufmann, C. (2021). Responsible Business in a Digital World – What's International Law Got to Do With It? In *Zeitschrift Für Ausländisches Öffentliches Recht Und Völkerrecht / Heidelberg Journal of International Law*. https://doi.org/10.17104/0044-2348-2021-3-781

Kaur, S. J., Ali, L., Hassan, M. K., & Al-Emran, M. (2021). Adoption of Digital Banking Channels in an Emerging Economy: Exploring the Role of in-Branch Efforts. In *Journal of Financial Services Marketing*. https://doi.org/10.1057/s41264-020-00082-w

Kumar, N. (2024). *A study on the Risk Management Practices In Personal Finance Planning:Risk Aware Investing:Strategies for effective personal finance planning*. https://doi.org/10.13140/RG.2.2.27456.75523

Kumar, N., Kumar, K., Aeron, A., & Verre, F. (2025). Blockchain technology in supply chain management: Innovations, applications, and challenges. *Telematics and Informatics Reports*, *18*, 100204. https://doi.org/https://doi.org/10.1016/j.teler.2025.100204

Luo, Y. (2021). A general framework of digitization risks in international business. *Journal of International Business Studies*, *53*. https://doi.org/10.1057/s41267-021-00448-9

Makhanya, M. (2024). *The Implications for Risk Management in the Era of Technological Advancements*. https://doi.org/10.5772/intechopen.1003899

Marino-Romero, J. A., & Folgado-Fernández, J. (2024). Digital transformation: A literature review in the context of international economies and finance. *South African Journal of Business Management*, *55*. https://doi.org/10.4102/sajbm.v55i1.4370

Meyer, K. E., Li, J., Brouthers, K. D., & Jean, R.-J. "'Bryan.'" (2023). International business in the digital age: Global strategies in a world of national institutions. In *Journal of international business studies* (Vol. 54, Issue 4, pp. 577–598).

https://doi.org/10.1057/s41267-023-00618-x

Mhlanga, D. (2020). Industry 4.0 in Finance: The Impact of Artificial Intelligence (AI) on Digital Financial Inclusion. In *International Journal of Financial Studies*. https://doi.org/10.3390/ijfs8030045

Min, B. H., & Borch, C. (2022). Systemic failures and organizational risk management in algorithmic trading: Normal accidents and high reliability in financial markets. *Social Studies of Science*, *52*(2), 277–302. https://doi.org/10.1177/03063127211048515

Mishra, S. (2024). The impact of AI on improving the efficiency and accuracy of managerial decisions. *International Journal for Research in Applied Science and Engineering Technology*, *12*.

Nandiroh, U., Hidayati, I., Handayati, P., & Hermawan, A. (2024). Revolutionizing Batik: How Fintech Empowers Malang's MSMEs for Economic Growth. In *International Journal of Humanities Education and Social Sciences (Ijhess)*. https://doi.org/10.55227/ijhess.v3i4.776

Nikiporets-Takigawa, G., & Avcinova, G. (2018). *Political Well-Being: Concept and Research Framework*. https://doi.org/10.15405/epsbs.2018.12.108

Oladele, O. (2024). *Internet of Things (IoT) in Logistics: Transforming Supply Chains with Connected Devices and Data Analytics*.

Olanrewaju, A. (2025). Artificial Intelligence in Financial Markets: Optimizing Risk Management, Portfolio Allocation, and Algorithmic Trading. *International Journal of Research Publication and Reviews*, *6*, 8855–8870. https://doi.org/10.55248/gengpi.6.0325.12185

Olawale, O., Ajayi, F., Udeh, C., & Odejide, O. (2024). Risk management and HR practices in supply chains: Preparing for the future. *Magna Scientia Advanced Research and Reviews*, *10*, 238–255. https://doi.org/10.30574/msarr.2024.10.2.0065

Omowole, B., Olufemi-Phillips, A., Ofodile, O., Eyo-Udo, N., & Ewim, S. (2024). Barriers and drivers of digital transformation in SMEs: A conceptual analysis. *International Journal of Scholarly Research in Science and Technology*, *5*, 19–36. https://doi.org/10.56781/ijsrst.2024.5.2.0037

Onwubuariri, E., Adelakun, B., Olaiya, O., & Ziorklui, J. (2024). AI-Driven risk assessment: Revolutionizing audit planning and execution. *Finance & Accounting Research Journal*, *6*, 1069–1090. https://doi.org/10.51594/farj.v6i6.1236

Peters, U. (2022). Algorithmic Political Bias in Artificial Intelligence Systems. *Philosophy & Technology*, *35*(2), 25. https://doi.org/10.1007/s13347-022-00512-8

Peterson, B. (2025). *Digital Risk Management Tools and Their Role in Enhancing Supply Chain Resilience*.

Ramachandran, A. (2024). *The Impact of Artificial Intelligence on Global Trade and Economic Relations Transforming Markets, Policies, and Geopolitical Power*.

Rana, P., & Patil, B. P. (2023). Cyber security threats in IoT: A review. *Journal of High Speed Networks*, *29*, 1–16. https://doi.org/10.3233/JHS-222042

Sağlam, Y. C., Çankaya, S. Y., & Sezen, B. (2020). Proactive Risk Mitigation Strategies and Supply Chain Risk Management Performance: An Empirical Analysis for Manufacturing Firms in Turkey. In *Journal of Manufacturing Technology Management*. https://doi.org/10.1108/jmtm-08-2019-0299

Salamai, A. (2021). *Risk Management Techniques on the Internet of Things*. *2*.

Sallam, K., Mohamed, M., & Wagdy, A. (2023). Internet of Things (IoT) in Supply Chain Management: Challenges, Opportunities, and Best Practices. *Sustainable Machine Intelligence Journal*, *2*. https://doi.org/10.61185/SMIJ.2023.22103

Shaheen, N., Shaheen, A., Ramadan, A., Hefnawy, M. T., Ramadan, A., Ibrahim, I. A., Hassanein, M. E., Ashour, M. E., & Flouty, O. (2023). Appraising systematic reviews: a comprehensive guide to ensuring validity and reliability. *Frontiers in Research Metrics and Analytics*, *8*, 1268045. https://doi.org/10.3389/frma.2023.1268045

Shen, Q. (2024). AI-driven financial risk management systems: Enhancing predictive capabilities and operational efficiency. *Applied and Computational Engineering*, *69*, 141–146. https://doi.org/10.54254/2755-2721/69/20241494

Simões, A. C., Ferreira, F., Castro, H., Senna, P. P., Silva, D., & Dalmarco, G. (2021). *Adoption of Digital Technologies During the COVID-19 Pandemic: Lessons Learned From Collaborative Academia-Industry R\&D Case Studies*. https://doi.org/10.1109/indin45523.2021.9557470

Sobb, T., Turnbull, B., & Moustafa, N. (2020). Supply Chain 4.0: A Survey of Cyber Security Challenges, Solutions and Future Directions. In *Electronics*. https://doi.org/10.3390/electronics9111864

Son, B., Kim, H., Hur, D., & Subramanian, N. (2021). The Dark Side of Supply Chain Digitalisation: Supplier-Perceived Digital Capability Asymmetry, Buyer Opportunism and Governance. In *International Journal of Operations \& Production Management*. https://doi.org/10.1108/ijopm-10-2020-0711

Soori, M., Arezoo, B., & Dastres, R. (2023). Artificial intelligence, machine learning and deep learning in advanced robotics, a review. *Cognitive Robotics*, *3*, 54–70. https://doi.org/https://doi.org/10.1016/j.cogr.2023.04.001

Sunny, J., Undralla, N., & Madhusudanan Pillai, V. (2020). Supply chain transparency through blockchain-based traceability: An overview with demonstration. *Computers & Industrial Engineering*, *150*, 106895. https://doi.org/https://doi.org/10.1016/j.cie.2020.106895

Sylvestre, C., & Extension, K. P. (2024). *The Role of Blockchain in Enhancing Supply Chain Transparency*. *3*, 73–79.

Tian, K., Zhu, Z., Mbachu, J., Ghanbaripour, A., & Moorhead, M. (2025). Artificial intelligence in risk management within the realm of construction projects: A bibliometric analysis and systematic literature review. *Journal of Innovation & Knowledge*, *10*(3), 100711. https://doi.org/https://doi.org/10.1016/j.jik.2025.100711

Ugwu, J. N., Silaji, T., Kule, A. M., & Ongesa, T. N. (2024). Digital Transformation in SMEs: Challenges, Technologies, and Best Practices. *Research Invention Journal of Current Issues in Arts and Management*, *3*(2), 49–55. https://rijournals.com/current-issues-in-arts-and-

management/

Ullagaddi, P. (2024). Leveraging Digital Transformation for Enhanced Risk Mitigation and Compliance in Pharma Manufacturing. In *Journal of Advances in Medical and Pharmaceutical Sciences*. https://doi.org/10.9734/jamps/2024/v26i6697

Uršič, D., & Čater, T. (2025). Digital innovation in management and business: A comprehensive review, multi-level framework, and future research agenda. *Journal of Business Research*, *197*, 115475. https://doi.org/https://doi.org/10.1016/j.jbusres.2025.115475

Vasist, P. N., Chatterjee, D., & Krishnan, S. (2023). The Polarizing Impact of Political Disinformation and Hate Speech: A Cross-country Configural Narrative. *Information Systems Frontiers : A Journal of Research and Innovation*, 1–26. https://doi.org/10.1007/s10796-023-10390-w

Volodenkov, S., Fedorchenko, S., & Artamonova, Y. (2022). Contemporary State in the Context of Digital Technological Transformations: Political Opportunities, Risks, and Challenges. In *Rudn Journal of Political Science*. https://doi.org/10.22363/2313-1438-2022-24-3-351-366

Wamba, S. F., & Queiroz, M. M. (2022). A Framework Based on Blockchain, Artificial Intelligence, and Big Data Analytics to Leverage Supply Chain Resilience considering the COVID-19. *IFAC-PapersOnLine*, *55*(10), 2396–2401. https://doi.org/https://doi.org/10.1016/j.ifacol.2022.10.067

Wang, Z. (2023). Digital Transformation and Risk Management for SMEs: A Systematic Review on Available Evidence. In *Advances in Economics Management and Political Sciences*. https://doi.org/10.54254/2754-1169/65/20231639

Wedraogo, L., Essandoh, S., Sakyi, J., Ibrahim, A., Okafor, C., Ogunwale, O., Babalola, A., & Adenuga, M. (2023). Analyzing Risk Management Practices in International Business Expansion. *Journal of Frontiers in Multidisciplinary Research*, *4*, 300–313. https://doi.org/10.54660/.JFMR.2023.4.2.300-313

William, B., Charlotte, J., & Princess, A. (2025). *Blockchain's Role in Supply Chain Transparency for Digital Product Manufacturers*.

Yousaf, M. (2022). *Artificial Intelligence in Financial Forecasting: Risk Assessment and Predictive Accuracy Enhancement Using Big Data*. https://doi.org/10.13140/RG.2.2.34896.52487

Zhelev, Z., & Kostova, S. (2024). Investigating the Application of Digital Tools for Information Management in Financial Control: Evidence From Bulgaria. In *Journal of Risk and Financial Management*. https://doi.org/10.3390/jrfm17040165

Zouari, D., Ruel, S., & Viale, L. (2020). Does Digitalising the Supply Chain Contribute to Its Resilience? *International Journal of Physical Distribution \& Logistics Management*. https://doi.org/10.1108/ijpdlm-01-2020-0038