Ekonomicko-manazerske spektrum
Volume 20 | Issue 1 | June 2026 | pp. 1-12
https://doi.org/10.26552/ems.2026.1.1-12

The Role of Artificial Intelligence in Strengthening Financial Practices of SMEs

Aneta Cugova[1*] and Sumana Chaudhuri[2]

* Correspondence: aneta.cugova@stud.uniza.sk
[1]University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitna 1, 010 26 Zilina, Slovakia
[2]Durgadevi Saraf Institute of Management Studies, RSET Campus S V Road, Malad, Mumbai 400064, Maharashtra, India; sumana.chaudhuri@dsims.org.in

Abstract

Research background: Artificial intelligence (AI) is rapidly transforming financial management in SMEs. Advances in machine learning, natural language processing and generative AI enhance forecasting, credit assessment, risk management and fraud detection. Despite this potential, SMEs face limited data, resource constraints and skill gaps, which significantly influence the pace and form of AI adoption.
Purpose of the article: The article aims to review high-quality research published between 2016 and 2024 on AI applications in SME finance. It focuses on how AI is used in financial forecasting, credit scoring, risk management, fraud detection, and financial planning, and examines how it affects SME financial stability, performance, and growth.
Methods: The study draws on a focused review of high-quality research (2016-2024) on AI in SME finance, synthesizing empirical and conceptual studies on AI applications, their documented benefits, key challenges, and strategies that enable effective financial management adoption.
Findings & Value added: The review shows that AI offers strong potential to enhance the financial stability and growth of SMEs when supported by suitable organizational capacities and governance. Key benefits include improved cash flow and financial forecasting, more accurate credit risk assessment, real-time fraud detection, and more data-driven financial planning. Despite these advantages, SMEs face barriers such as limited data, skill shortages, and high implementation costs. The review identifies strategies to overcome these challenges, including cloud-based AI solutions, targeted employee training, and explainable AI to strengthen transparency and trust. Ethical concerns, especially algorithmic bias and the need for human oversight remain essential for ensuring positive financial outcomes. The article adds value by synthesizing fragmented evidence, linking AI use to performance improvements, and outlining directions for future research on sustainable AI adoption.

Keywords: artificial intelligence; SME finance; explainable AI; financial forecasting

JEL Classification: G32; M21; O33

Received
24 November 2025
Received in revised form
15 December 2025
Accepted
7 March 2026
Available online
30 June 2026

Cite as: Cugova, A., & Chaudhuri, C. (2026). The Role of Artificial Intelligence in Strengthening Financial Practices of SMEs, Ekonomicko-manazerske spektrum, 20(1), 1-12.

1. Introduction

In the financial industry, artificial intelligence (AI) has emerged as a core driver of innovation in what is often described as the Fourth Industrial Revolution. AI systems leverage big data and advanced algorithms to make decisions rapidly, transforming operations in finance from algorithmic trading and robo-advisory services to fraud detection and customer service chatbots (Vukovic et al., 2025). Financial institutions are projected to double their AI investments to about $97 billion by 2027, reflecting AI's immense potential to deliver performance gains even as it introduces new risks that require careful management (McKinsey Global Institute, 2018; Dwivedi et al., 2021).

Within this broader context, small and medium-sized enterprises (SMEs) are a crucial part of the economy that could benefit greatly from AI-driven innovations. SMEs contribute significantly to global employment and economic development, and they often have the agility to adapt quickly to market changes (Badghish and Soomro, 2024). However, SMEs also face major resource constraints such as limited financial and human capital, lack of technical expertise, and sometimes organizational resistance to change (Badghish and Soomro, 2024). These constraints make AI adoption both a significant opportunity and a formidable challenge for smaller businesses. Unlike large corporations with extensive IT budgets, SMEs tend to seek affordable, easy-to-implement AI solutions that offer rapid returns on investment (Schwaeke et al., 2025).

AI's potential in the finance function of SMEs is especially promising. Key financial management activities such as forecasting and budgeting, credit risk assessment, cash flow management, fraud detection, and strategic financial planning can all be enhanced by AI. For example, machine learning models can improve revenue and cash flow forecasts by analyzing historical and real-time data, leading to more reliable budgeting and planning (Dinh et al., 2025). AI-driven algorithms can evaluate creditworthiness using a wide range of financial and alternative data, enabling more accurate credit scoring and risk management decisions (Serrano-Cinca and Gutierrez-Nieto, 2016; Jagtiani and Lemieux, 2019). Similarly, anomaly detection systems can continuously monitor transactions to flag irregularities or potential fraud, strengthening internal controls (Vukovic et al., 2025). By improving the speed and precision of these processes, AI helps SMEs mitigate risks, maintain steadier cash flows, and make better-informed strategic decisions - enhancing financial stability and supporting business growth (Dinh et al., 2025; Metzger et al., 2025).

Despite these potential benefits, many SMEs have been slow to adopt AI in practice. Common barriers include low awareness of AI capabilities, insufficient quality data (often trapped in silos), high implementation costs, and a shortage of skilled personnel to develop or manage AI systems (Dwivedi et al., 2021; Schwaeke et al., 2025). SME owners also worry about data security, privacy, and the reliability of AI outputs in high-stakes financial decisions. Many are uncertain about the return on investment of AI projects or fear disruptions to established processes. These concerns underscore the need for more research on how AI adoption affects SME performance and what strategies can facilitate successful implementation (Soomro et al., 2025). A key question is whether implementing AI in finance tangibly improves an SME's financial health, risk resilience, and growth trajectory and under what conditions such deployment yields sustainable competitive advantages (Badghish and Soomro, 2024).

To address these issues, this paper conducts a systematic review of recent scholarly research on the use of AI in SME financial management. We focused on literature from the years 2016-2025 published in well-regarded journals (primarily those in top quartiles), ensuring a current and credible foundation for analysis. The goal is to outline the state-of-the-art applications of AI in SME finance, covering functions such as financial prediction, credit scoring, risk management, fraud detection, and planning/controlling and to evaluate their financial implications, particularly how they impact enterprises' financial stability (e.g. risk reduction, more reliable cash flows, avoidance of financial distress) and growth (e.g. improved profitability, productivity, and expansion outcomes). Our review highlights proven benefits, remaining challenges, and emerging best

practices, providing guidance for SME managers and stakeholders on leveraging AI for financial management.

2. Literature review

Research on AI and digital technologies has expanded rapidly in the last decade. Early macro level work links the diffusion of advanced automation with changes in growth, employment and factor shares, highlighting both productivity gains and risks for labour markets (Acemoglu and Restrepo, 2018). Strategic reports by consulting firms and international bodies show that financial institutions are investing heavily in AI and related analytics, expecting significant efficiency and revenue effects while also warning about new systemic vulnerabilities (McKinsey Global Institute, 2018; Financial Stability Board, 2025). At the same time, broad surveys of AI adoption map key technological opportunities and challenges and emphasise data quality, ethical concerns and governance as central issues for business value creation (Dwivedi et al., 2021).

Within this broader stream, a growing body of work focuses specifically on small and medium sized enterprises. International policy studies document that the digital transformation of smaller firms is uneven and that many enterprises lag in the use of data driven tools (OECD, 2021). Empirical research connects the adoption of AI and related digital technologies in small and medium sized enterprises with higher innovation performance, greater organisational flexibility and improved sustainability outcomes (Chaudhuri et al., 2022; Chatterjee and Mariani, 2024; Badghish and Soomro, 2024; Schwaeke et al., 2025; Soomro et al., 2025). Recent studies also argue that AI can compensate for resource constraints in smaller firms by supporting decision making, reducing operational costs and enabling new data driven business models (Dinh et al., 2025; Chatterjee et al., 2023).

A third stream of literature examines AI in financial services and in the financial management of enterprises. Foundational studies on credit scoring and risk analytics show that statistical learning and machine learning models can significantly improve the prediction of default and the evaluation of bank customers and peer to peer borrowers (Gaganis et al., 2021; Serrano Cinca and Gutierrez Nieto, 2016; Jagtiani and Lemieux, 2019; Li et al., 2021). More recent work develops fairness aware approaches and graph-based models for financial distress prediction, often with an explicit focus on small and medium sized enterprises (Wang et al., 2024). In parallel, researchers discuss how AI supports financial inclusion and stability at the system level (Le et al., 2019; Vukovic et al., 2025) and how generative AI tools can augment day to day financial management in small and medium sized enterprises (Metzger et al., 2025). Despite these advances, there is still limited integrative evidence that connects specific financial applications of AI with the overall financial stability and growth of small and medium sized enterprises. The present study addresses this gap by systematically reviewing recent high-quality work on AI in SME finance and synthesising its implications for financial stability and performance.

3. Methodology

The article adopts a systematic literature review SLR approach in line with guidance by Okoli (2015). The aim of this review is to identify, evaluate and synthesise research that examines applications of AI in the financial management of small and medium sized enterprises and closely related contexts. The procedure followed three stages: planning the review, identifying and selecting relevant studies and synthesising the evidence.

In the planning stage, the research questions were defined around two core issues. First, how AI is used in financial forecasting, credit risk assessment, fraud detection, financial distress prediction and broader financial decision support for small and medium sized enterprises. Second, how these applications influence financial stability and performance outcomes such as cash flow reliability, risk exposure and business growth. On this basis, search strings combined terms for AI

and analytics (for example AI, machine learning, generative AI) with terms related to small and medium sized enterprises and finance (for example SME, small business, credit risk, financial forecasting, financial distress).

In the identification and selection stage, searches were carried out in Web of Science and Scopus. Only peer reviewed publications and high-quality institutional reports in English were retained. The initial search returned a broader pool of records that were screened in several steps. Titles and abstracts were first checked to remove clearly irrelevant items, such as studies that focus on purely technical aspects of algorithms without any business or financial context or papers that deal exclusively with large corporations. The remaining studies were assessed in full text. To be included in the final corpus, a publication had to address AI or machine learning, contain an explicit link to financial management, risk or performance and provide evidence or conceptual discussion that was relevant for small and medium sized enterprises. Seminal work on credit scoring and financial inclusion and selected policy reports on AI in finance were also retained where they informed the analysis.

Table 1 provides an overview of the core characteristics of the sources included in the systematic literature review. The analysed sample covers the years 2016 to 2025 and consists of 24 publications, predominantly journal articles, with a clear upward trend in outputs after 2018. The thematic focus is centred on AI, SME finance, and financial stability, as reflected in the most frequent keywords. Authorship patterns indicate moderate collaboration, with an average of 2.7 authors per paper and around 40 percent international co-authorship. Overall, the dataset reflects a young and dynamically evolving research stream.

Table 1: Analysed sources used in the systematic literature review

Description	Results
Main information about data	
Timespan	2016–2025
Total sources (journals, reports)	24
Journal articles	21
Institutional / policy reports	3
Annual growth trend of publications	Increasing, especially after 2018
Average document age	3.9 years
Document contents	
Keywords plus	AI, SME finance, forecasting, credit scoring, risk assessment
Author keywords	AI, SMEs, financial stability, financial management
Authors	
Total authors across included studies	65
Single-authored papers	2
Average number of authors per paper	2.7
International co-authorship share	approx. 40 percent
Document types	
Article	21
Institutional report	3

Source: own elaboration

For each included study, information was extracted on publication year, country or region, methodological approach, the specific financial function examined, the AI technique or tool and the main findings related to financial stability, risk or performance. The analysis followed a thematic synthesis logic. Individual findings were coded into categories representing forecast and planning applications, credit risk assessment and lending, fraud detection and internal control, financial distress prediction and broader decision support. The evidence within each theme was then compared to identify recurring patterns, complementary insights and any contradictory results. This procedure ensured transparency of the review process and provided a structured basis for the result and discussion sections that follow.

4. Results

Our review identified several core areas where AI is being implemented in SME financial management, each yielding distinct benefits. As summarized in Table 2, AI applications in SME financial management span the entire financial cycle, from forecasting and planning, through credit risk assessment and fraud detection, to distress prediction and decision support. Collectively, these tools enhance the accuracy of financial information, strengthen risk management, and support more timely and informed managerial decisions, thereby contributing to greater financial stability and growth potential in SMEs.

Table 2: Key AI applications in SME financial management

AI application area	Main purpose	How AI works	Main benefits for SMEs and financial stability
Financial forecasting and planning	Improve forecasts of revenue, sales, and cash flow	Machine learning models for time-series forecasting, using historical financial and operational data	More accurate budgeting and liquidity management; reduced uncertainty about funding needs
Credit scoring and risk assessment	Assess creditworthiness and default risk	ML models analyse financial and non-financial data and classify default risk	More accurate default predictions; better lending decisions; improved access to finance for viable SMEs
Fraud detection and internal control	Detect fraud, errors, and irregularities in financial records	Anomaly detection, pattern recognition, and real-time monitoring of transactions and accounting entries	Faster and more reliable fraud detection; prevention of financial losses; stronger internal controls
Financial distress prediction	Predict likelihood of distress or business failure	Predictive analytics models using financial ratios, performance trends, and macroeconomic indicators	Early warning signals for timely action; reduced insolvency risk; improved financial stability
Financial decision support	Support managerial financial decision-making	AI-powered analytics and generative AI tools that interpret financial statements and simulate scenarios	Faster and better-informed decisions; early detection of financial issues; support for profitability and growth

Source: own elaboration

AI-driven predictive models (e.g., machine learning for time-series forecasting) improve the accuracy of revenue, sales, and cash flow projections. This enhances budgeting and liquidity management, reducing uncertainty and helping SMEs anticipate funding needs (Dinh et al., 2025). Better forecasts contribute to stability by enabling proactive adjustments to business strategies and avoiding cash shortfalls.

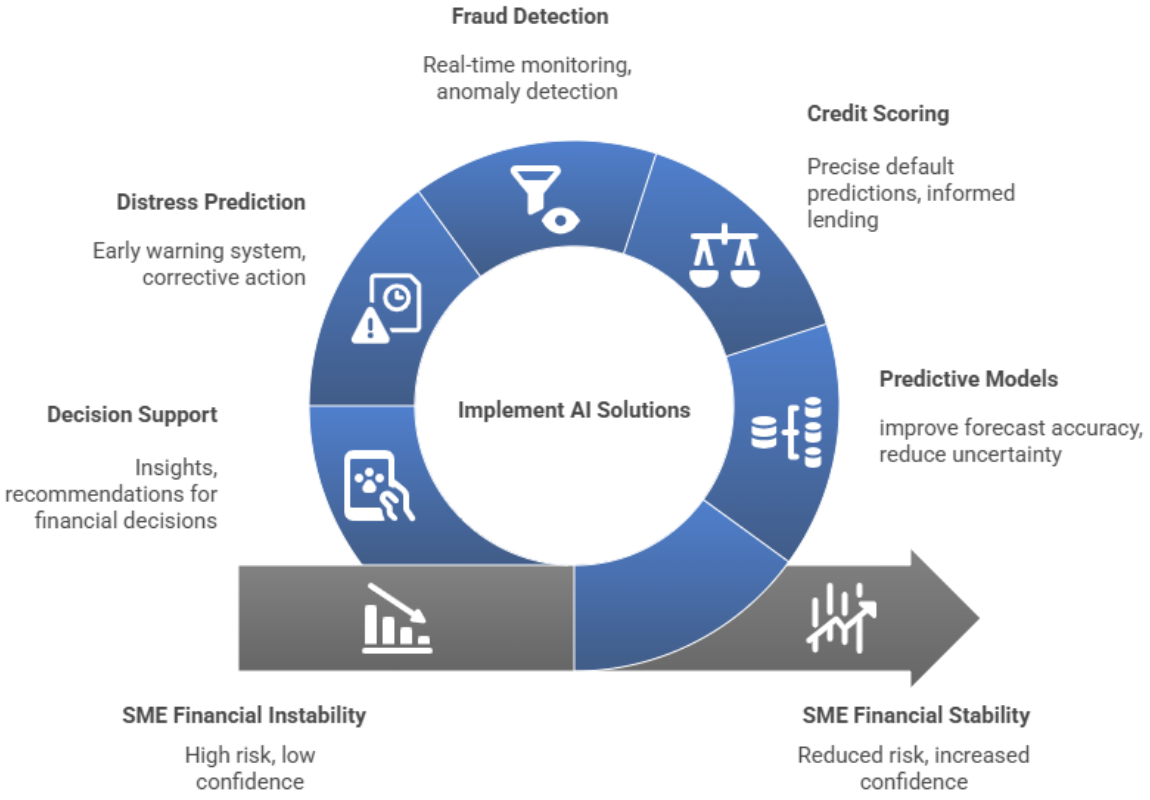
In the area of credit scoring and risk assessment, machine learning algorithms analyze financial and non-financial data (such as transaction histories or customer behavior patterns) to assess creditworthiness and default risk. AI-based credit scoring provides more precise default predictions than traditional methods, leading to more informed lending decisions and more effective credit risk management. For SMEs, this means improved access to financing (as worthy borrowers are identified more accurately) and reduced losses from bad debts, which contributes to financial stability (Serrano-Cinca and Gutierrez-Nieto, 2016; Jagtiani and Lemieux, 2019). This approach builds on earlier decision-support models for credit evaluation and has led to demonstrable improvements in loan portfolio performance (Gaganis et al., 2021).

AI systems used for fraud detection and internal control monitor financial transactions and accounting entries in real time to detect anomalies or suspicious patterns. By using techniques like anomaly detection and pattern recognition, AI can flag potential fraud or errors far faster and more accurately than manual review (Vukovic et al., 2025). This helps SMEs prevent financial losses due to fraud and ensures the integrity of financial reports. Strengthening internal controls in this way improves stability and confidence in the enterprise's financial practices, both for managers and external stakeholders.

Predictive analytics models for financial distress prediction use AI to evaluate indicators of financial health (liquidity ratios, revenue trends, macroeconomic signals) and predict the likelihood of business distress or failure. Such AI-driven early warning systems enable SME managers to take corrective action before problems become critical, directly enhancing the enterprise's financial stability and survival prospects (Wang et al., 2024). By mitigating insolvency risk through timely alerts, these tools serve as a financial safeguard for SMEs.

AI-powered financial decision support tools (including advanced analytics and even generative AI) provide managers with insights and recommendations for financial decisions. For instance, AI can automatically analyze financial statements and highlight issues such as cost overruns or declining profit margins, alerting management to areas that require attention (Metzger et al., 2025). AI-based advisory systems can guide budgeting, investment by evaluating various scenarios. By improving the quality and speed of decision-making, these applications can boost profitability and growth while helping managers maintain control over financial risks.

Figure 1: The impact of AI on the financial stability of SMEs



Source: own elaboration

Across these functional areas, studies report significant quantitative improvements for AI-adopting SMEs (Figure 1). For example, leveraging AI in forecasting and planning has been linked to more stable cash flows and fewer financial surprises, thereby improving stability (Badghish and Soomro, 2024) and supporting the broader sustainability and performance gains associated with AI-driven innovation in SMEs (Chaudhuri et al., 2022). AI-driven credit analytics have led to lower loan default rates. One study noted roughly a 7% reduction in defaults in an SME loan portfolio while also expanding credit access by better distinguishing high-risk borrowers from creditworthy ones (Butaru et al., 2016; Jagtiani and Lemieux, 2019). Automating routine accounting and control tasks with AI can reduce operational costs and errors, directly improving profit margins and efficiency (Dwivedi et al., 2021). Moreover, emerging tools like generative AI are making sophisticated financial analysis accessible to SME managers, providing real-time insights that previously required expert analysts (Metzger et al., 2025). As a result, SMEs leveraging AI often outperform their peers

on key financial metrics and respond more agilely to market changes, in line with broader evidence that digital transformation initiatives enhance organizational flexibility and competitiveness (Chatterjee and Mariani, 2024). For instance, SMEs using AI-based decision support tend to make faster and more data-informed adjustments in operations and strategy, which can translate into competitive advantages. However, researchers also caution that these benefits are not automatic. Data quality remains paramount and the ability of SME managers to interpret and trust AI outputs is critical (Dwivedi et al., 2021). Without a strong data-driven culture and sufficient analytical skills, an SME may fail to realize AI's full potential even with advanced tools in place. Building up organizational capability alongside technical adoption is therefore often cited as a necessary complement to AI technology (Badghish and Soomro, 2024). Evidence from innovation research shows that insufficient capabilities can turn such investments into innovation failures with adverse performance consequences (Chatterjee et al., 2023).

5. Discussion

The results show that AI adoption can significantly bolster the financial stability of SMEs by enhancing core risk management functions. AI-driven tools for credit scoring, fraud detection, forecasting, and distress prediction collectively help SMEs *avoid or mitigate financial shocks*. For example, more accurate machine-learning credit models lead to fewer bad loans and defaults, which in turn stabilizes cash flow. Improved cash-flow forecasting and real-time anomaly detection similarly act as buffers against unexpected liquidity shortfalls or losses. These findings align strongly with recent empirical evidence: AI-adopting enterprises tend to experience less variability in revenues and cash flows than non-adopters, indicating more predictable operations. One study even quantified that each additional AI application used was associated with roughly a 3-4% reduction in business risk during the COVID-19 pandemic (Drydakis, 2022). Consistently, SMEs leveraging digital and AI tools coped better with the COVID-19 shock, showing lower rates of distress and closure than those without such tools. This suggests that AI functions as a risk buffer in practice, enabling faster adaptive responses through predictive insights and automation. Our observation that AI-based credit analytics and early warning systems improve financial resilience is also corroborated by other high-quality studies. For instance, integrating machine learning into SME lending was found to cut default rates (by about 7% in one case) while expanding credit access by more accurately distinguishing high-risk borrowers. Taken together, both our review and the broader literature indicate a clear consensus: AI technologies, when applied to SME finance, enhance stability by smoothing out volatility and reducing the frequency of negative financial surprises. We did not encounter contradictory evidence on this point in recent top-tier studies. Any divergence in impact appears to be one of degree, where enterprises that fully integrate AI in risk management reap greater stability gains, rather than a question of AI failing to improve stability. In summary, our findings on stability gains are well-aligned with the current literature, which overwhelmingly reports that AI-enabled risk assessment and control tools strengthen SMEs' financial resilience.

Our analysis also indicates that AI adoption is associated with notable improvements in SMEs' financial performance and growth prospects. Multiple pathways underpin this outcome. First, AI often drives cost reduction and efficiency gains by automating routine accounting, reporting, and compliance tasks, which directly lowers operating costs and boosts profit margins (as also noted by Dwivedi et al., 2021). Second, AI contributes to revenue enhancement: advanced analytics help identify new market opportunities and personalize customer engagement, leading to higher sales and customer retention. Third, AI-supported decision systems enable better resource allocation and investment decisions, improving returns on investment. These mechanisms correspond closely with findings from other recent high-quality studies. In a 2025 survey of 305 enterprises, Soomro et al. (2025) report that AI adoption substantially enhances SMEs' performance, yielding measurable improvements in operational efficiency and cost savings. Likewise, Badghish and Soomro (2024)

found in an empirical study of Saudi Arabian SMEs that enterprises implementing AI achieved significantly higher profitability and growth rates than non-adopters. By giving SMEs access to capabilities (like data analytics or 24/7 customer service chatbots) once reserved for large corporations, AI can enable smaller enterprises to achieve results beyond their scale, a trend noted in global analyses and industry reports.

Crucially, we also identified some nuances and potential divergences regarding performance outcomes. Not all studies find immediate or uniformly positive effects on profitability, especially in the short term. High implementation costs can temporarily offset AI's efficiency benefits. For example, one recent study of larger enterprises observed that while AI adopters enjoyed higher revenue and gross profit, their short-term return on investment (ROI) was slightly lower than non-adopters (11.7% vs. 12.0%) due to upfront expenditures on AI systems. This suggests that the financial payoffs of AI may accrue with a lag, as initial costs are amortized and process improvements compound over time (Cherish et al., 2025). For SMEs, which are even more sensitive to resource constraints, a similar pattern could mean that profitability gains materialize gradually rather than instantaneously. Another noteworthy nuance is the role of enterprise size and context. Our review and other studies imply that medium-sized enterprises often reap greater performance gains from AI than very small enterprises, likely because they possess more complementary resources. In the Saudi study, for instance, AI's impact on performance was significant across the board, but medium-sized SMEs appeared to leverage relative advantages of AI more effectively than smaller SMEs (Badghish and Soomro, 2024). This divergence underscores that while the direction of AI's effect on performance is consistently positive, the magnitude can vary based on organizational context. Enterprises with more data, skills, or scale might unlock bigger gains, whereas very small or resource-poor SMEs could experience more modest improvements. Overall, however, our finding that AI strengthens SME financial performance is strongly supported by recent literature. No high-quality study reviewed reported a net negative impact on performance; differences arose in how quickly or strongly benefits were realized. Thus, our conclusions on performance align with the consensus that AI adoption, when done effectively, tends to improve SMEs' efficiency, profitability, and growth trajectory with any divergences attributable to factors like upfront cost burdens or enterprise-specific capabilities (Soomro et al., 2025).

While the upside of AI in SME finance is clear, both our review and prior studies emphasize that realizing these benefits depends on overcoming implementation challenges and ensuring organizational readiness. Resource constraints emerged as a central theme. Many SMEs lack the quality data, skilled personnel, and capital required to develop and maintain AI systems, which can slow or limit adoption. This observation resonates with broad surveys of SME technology adoption for example, Dwivedi et al. (2021) and Schwaeke et al. (2025) document that insufficient expertise and fragmented data are pervasive barriers to AI implementation in smaller enterprises. Our findings also highlighted concerns about uncertain ROI, which aligns with other reports of SME owners hesitating to invest in AI without clear short-term payback (indeed, as noted above, initial ROI can be modest). These challenges help explain why some SMEs in the literature have not experienced strong AI benefits. Simply if an enterprise cannot adequately invest in or deploy the technology, performance gains will be limited. Recent studies underscore this point. For instance, Soomro et al. (2025) identify top management support and employee capability as critical enablers of AI adoption, suggesting that organizations with proactive leadership and skilled staff have a head start in overcoming barriers. Our review concurs: SMEs that treat AI as a strategic priority and build the necessary human capital and data infrastructure are far more likely to achieve positive outcomes. Conversely, a lack of organizational readiness can neutralize the advantages of AI or even result in failed projects. This caution is well-founded in the literature: evidence shows that without a data-driven culture and sufficient analytical skills, an SME may fail to realize AI's potential. Indeed, researchers have documented instances where new technology investments became innovation failure due to capability gaps, yielding little benefit or even adverse results. Chatterjee et al. (2023) describe how insufficient complementary capabilities can turn a promising innovation

into a liability, which reinforces our finding that simply adopting AI is not enough, it must be accompanied by organizational learning and process adaptation.

Another recurring insight is the importance of human oversight and integration. Our results noted that AI tools are most effective when they augment (rather than replace) human decision-making in finance. This aligns with expert opinions and case evidence in recent publications. For example, Metzger et al. (2025) observed that the effectiveness of AI in SME finance "hinges on organizational readiness, competence in interpreting data, and the will to act on automated alerts". In practice, this means that trained staff should remain in the loop - managers need to understand and trust AI outputs and be willing to adjust business processes based on data-driven insights. We found that SMEs with stronger analytical skills and a culture open to data-driven decisions tended to extract more value from AI, which mirrors the conclusions of other studies that call for building AI literacy in the workforce (Dwivedi et al., 2021). On the flip side, SMEs that deploy AI without sufficient training or buy-in may see the technology underutilized or misused, blunting its impact. The literature does not contradict this premise; rather, there is broad agreement that organizational factors such as leadership, skills, and strategic alignment differentiate successful AI adopters from less successful ones. Within the scope of financial forecasting, risk management, and decision support, however, our findings are largely in harmony with the contemporary scholarly consensus. Any divergences (such as variation in ROI or speed of benefit realization) can be explained by contextual factors for example higher initial costs or lower readiness rather than fundamental disagreement on AI's role. In summary, when comparing our results with other recent high-quality studies (2016-2025), we find a convergent narrative: AI holds considerable promise for strengthening SME financial practices, but the extent of its benefits is contingent on implementation context. Where our findings align such as improved stability and better performance, they do so because these outcomes have been observed across diverse settings. Where nuances or partial divergences appear, they underscore the importance of addressing the human and organizational elements of AI adoption. This consonance with the wider literature reinforces confidence in our conclusions, while also highlighting why some SMEs may lag in reaping AI's rewards.

6. Conclusions

Our review finds that AI technology can indeed be a game-changer for SME finance, capable of significantly improving financial stability and driving growth when implemented effectively. AI adoption in areas like forecasting, credit analysis, and financial control allows SMEs to make more accurate predictions, reduce risks, and streamline operations. The case studies and empirical evidence, we examined document benefits such as more reliable cash flow forecasts, lower default rates and financial losses, and better-informed strategic decisions, all of which contribute to stronger financial health for SMEs. These improvements illustrate that stability and growth often viewed as a trade-off in financial strategy can be pursued simultaneously through the smart use of AI. However, realizing these gains is not automatic or guaranteed. The successful cases typically involved certain enabling factors: strong leadership commitment to innovation, a clear alignment of AI projects with business goals, and investments in organizational learning such as training staff, adapting workflows, and cultivating a data-positive culture. Not every SME that adopts AI will see dramatic improvements; those that do tend to be the ones that are prepared - having sufficient data readiness, the right expertise to implement AI and a willingness to integrate AI insights into decision-making.

Looking ahead, there are several important directions for future research. First, longitudinal studies would be valuable to determine whether the short-term performance boosts observed with AI adoption translate into sustained competitive advantages for SMEs over the long run. Do AI-adopting SMEs continue to outpace their peers in financial stability and growth after five or ten years, or do the effects level off as AI becomes more commonplace? Second, more sector-specific

research could shed light on how AI's impact might differ across industries. For example, manufacturing SMEs might reap AI benefits in predictive maintenance and supply chain optimization, while service-oriented SMEs might use AI more for customer analytics and personalized marketing, the financial outcomes could vary accordingly. Understanding these nuances can help tailor AI strategies to different SME contexts. Third, exploring emerging AI technologies in the SME realm is a fertile area. Tools like conversational AI (e.g., chatbots powered by large language models) or automated machine learning (Auto ML) platforms could further democratize AI for SMEs by reducing the need for in-house data science expertise. Early evidence suggests that turnkey AI solutions, where an SME can plug in its data and let an AI system generate insights or models, have the potential to greatly simplify adoption (Metzger et al., 2025). Research into the effectiveness and limitations of these user-friendly AI technologies for SMEs would be highly beneficial. The development of practical frameworks for ethical AI use in SMEs remains an open question. Large organizations and regulators are devising AI ethics guidelines, but SMEs might need simpler, readily applicable tools to ensure their AI deployments are fair, transparent, and secure. Scholars and industry groups could collaborate to produce SME-focused AI ethics checklists or toolkit packages to help small businesses confidently and responsibly deploy AI.

AI holds considerable promise for strengthening the financial practices of SMEs. When deployed thoughtfully and supported by the necessary organizational conditions, AI can give small and medium-sized enterprises capabilities that greatly enhance their financial stability and open new pathways for growth. An SME that effectively leverages AI in its finance function can become more efficient, more resilient to risks, and more strategic in its decision-making-essentially augmenting the financial management capacity that would otherwise require substantially more human resources. The ongoing challenge for both practitioners and researchers is to deepen our understanding of how to harness AI's potential while managing its risks. By continuing to identify best practices, sharing success stories (and failures), and addressing knowledge gaps (such as long-term impacts and ethical use), we can ensure that more SMEs are able to successfully navigate the AI revolution in finance. Ultimately, empowering SMEs with AI not only benefits individual businesses but can contribute to a more dynamic, inclusive, and robust economic landscape.

Author contributions

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

Funding

This research received no external funding.

Data Availability Statement

No new data were created or analysed in this study.

Conflicts of Interest

The authors declare no conflict of interest.

Declaration of generative AI and AI-assisted technologies in the writing process

The authors declare that no generative AI or AI-assisted technologies were used in the writing or preparation of this manuscript.

References

Acemoglu, D., & Restrepo, P. (2018). The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment. *American Economic Review, 108*(6), 1488-1542. https://doi.org/10.1257/aer.20160696

Badghish, S., & Soomro, Y. A. (2024). Artificial intelligence adoption by SMEs to achieve sustainable business performance: Application of Technology-Organization-Environment framework. *Sustainability, 16*(5), 1864. https://doi.org/10.3390/su16051864

Butaru, F., Chen, Q., Clark, B., Das, S., Lo, A. W., & Siddique, A. (2016). Risk and risk management in the credit card industry. *Journal of Banking & Finance, 72*, 218-239. https://doi.org/10.1016/j.jbankfin.2016.07.015

Chatterjee, S., & Mariani, M. (2024). Exploring the influence of exploitative and explorative digital transformation on organization flexibility and competitiveness. *IEEE Transactions on Engineering Management*, *71*, 13616-13626. https://doi.org/10.1109/TEM.2022.3220946

Chatterjee, S., Chaudhuri, R., Mariani, M., & Wamba, S. F. (2023). The consequences of innovation failure: An innovation capabilities and dynamic capabilities perspective. Technovation, 128, 102858. https://doi.org/10.1016/j.technovation.2023.102858

Chaudhuri, R., Chatterjee, S., Vrontis, D., & Chaudhuri, S. (2022). Innovation in SMEs, AI dynamism, and sustainability: The current situation and way forward. *Sustainability*, *14*(19), 12760. https://doi.org/10.3390/su141912760

Cherish, E. I., Aniebonam, E. E., Tran, T. C., & Pham, T. T. H. (2025). Impact of AI on financial performance of enterprises. *Cuestiones de Fisioterapia*, *54*(5), 385-396. https://doi.org/10.48047/3p8n5x63

Dinh, T. L., Vu, M.-C., & Tran, G. T. C. (2025). Artificial intelligence in SMEs: Enhancing business functions through technologies and applications. *Information, 16*(5), 415. https://doi.org/10.3390/info16050415

Drydakis, N. (2022). Artificial Intelligence and Reduced SMEs' Business Risks. A Dynamic Capabilities Analysis during the COVID-19 Pandemic. *Information Systems Frontiers*, *24*(4), 1223-1247. https://doi.org/10.2139/ssrn.4114609

Dwivedi, Y. K., Hughes, L., Ismagilova, E., et al. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research. *International Journal of Information Management, 57*, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Financial Stability Board. (2025). *Monitoring adoption of artificial intelligence and related vulnerabilities in the financial sector* (Report, October 2025). https://www.fsb.org/2025/10/monitoring-adoption-of-artificial-intelligence-and-related-vulnerabilities-in-the-financial-sector/

Gaganis, C., Papadimitri, P., & Tasiou, M. (2021). A multicriteria decision support tool for modelling bank credit ratings. *Annals of Operations Research*, *306*(1-2), 27–56. https://doi.org/10.1007/s10479-020-03516-9

Jagtiani, J., & Lemieux, C. (2019). The roles of alternative data and machine learning in fintech lending: Evidence from the LendingClub consumer platform. *Financial Management, 48*(4), 1009-1029. https://doi.org/10.1111/fima.12295

Le, T. H., Chuc, A. T., & Taghizadeh-Hesary, F. (2019). Financial inclusion and its impact on financial efficiency and sustainability: Empirical evidence from Asia. *Borsa Istanbul Review, 19*(4), 310-322. https://doi.org/10.1016/j.bir.2019.07.002

Li, T., Desmond, A. F., & Stengos, T. (2021). Dimension Reduction via Penalized GLMs for Non-Gaussian Response: Application to Stock Market Volatility. *Journal of Risk and Financial Management, 14*(12), 583. https://doi.org/10.3390/jrfm14120583

McKinsey Global Institute. (2018). *Notes from the AI frontier: Modeling the impact of AI on the world economy*. McKinsey & Company.

Metzger, M., O'Reilly, S., & Mac an Bhaird, C. (2025). Generative artificial intelligence augmenting SME financial management. *Technovation, 147*, 103313. https://doi.org/10.1016/j.technovation.2025.103313

OECD. (2021). *The digital transformation of SMEs*. OECD Publishing. https://doi.org/10.1787/bdb9256a-en

Okoli, C., (2015). A guide to conducting a systematic literature review of information systems research. *Communications of the Association for Information Systems, 37*(1), 879-910. https://doi.org/10.17705/1CAIS.03743

Schwaeke, J., Peters, A., Kanbach, D. K., Kraus, S., & Jones, P. (2025). The new normal: The status quo of AI adoption in SMEs. *Journal of Small Business Management, 63*(3), 1297-1331. DOI: https://doi.org/10.1080/00472778.2024.2379999

Serrano-Cinca, C., & Gutierrez-Nieto, B. (2016). The use of profit scoring as an alternative to credit scoring systems in peer-to-peer (P2P) lending. *Decision Support Systems, 89*, 113-122. https://doi.org/10.1016/j.dss.2016.06.014

Soomro, R. B., Al-Rahmi, W. M., Dahri, N. A., Almuqren, L., Al-mogren, A. S., & Aldaijy, A. (2025). A SEM-ANN analysis to examine the impact of AI technologies on sustainable performance of SMEs. *Scientific Reports, 15*(1), 5438. https://doi.org/10.1038/s41598-025-86464-3

Vukovic, D. B., Dekpo-Adza, S., & Matovic, S. (2025). AI integration in financial services: A systematic review of trends and regulatory challenges. *Humanities and Social Sciences Communications, 12*(1), 562. https://doi.org/10.1057/s41599-025-04850-8

Wang, J., Jiang, C., Zhou, L., & Wang, Z. (2024). Assessing financial distress of SMEs through event propagation: An adaptive interpretable graph contrastive learning model. *Decision Support Systems, 180*, 114195. https://doi.org/10.1016/j.dss.2024.114195