GEORGE BROWN PRESS
JOURNALS, BOOKS & PROCEEDINGS

Economics and Management Innovation

Article

AI-Assisted Budgeting and Cost Control: A Practical Model for Financial Decision-Making in SMEs

Zhijun Liu [1,*]

[1] Fordham University New York, NY
* Correspondence: Zhijun Liu, Fordham University New York, NY

Abstract: In an increasingly uncertain and competitive business environment, effective budgeting and cost control are critical to the financial sustainability of small and medium-sized enterprises (SMEs). However, traditional budgeting practices in SMEs are often constrained by static planning methods, fragmented data, and heavy reliance on managerial intuition. The rapid development of artificial intelligence (AI) offers new opportunities to enhance financial decision-making through data-driven analysis and predictive capabilities. This paper proposes a practical model for AI-assisted budgeting and cost control tailored to the organizational characteristics and resource constraints of SMEs. Adopting a conceptual and application-oriented approach, the study analyzes how AI can support key financial management processes, including budget forecasting, cost monitoring, and decision support, without focusing on technical algorithms or empirical testing. The proposed model emphasizes data integration, continuous analysis, and human-AI collaboration, positioning AI as a tool that augments managerial judgment rather than replacing it. By illustrating key application scenarios and discussing implementation conditions and potential risks, this paper demonstrates how AI-assisted budgeting and cost control can improve flexibility, transparency, and decision quality in SMEs. The study contributes to the understanding of AI-enabled financial management by offering a scalable and managerially relevant framework that supports more adaptive and informed financial decision-making.

Keywords: artificial intelligence; budgeting; cost control; financial decision-making; small and medium-sized enterprises

1. Introduction

In an increasingly volatile and competitive business environment, small and medium-sized enterprises (SMEs) face significant challenges in maintaining financial stability and achieving sustainable growth. Compared with large corporations, SMEs typically operate with limited financial resources, less sophisticated management systems, and higher sensitivity to market fluctuations. Under such conditions, effective budgeting and cost control play a critical role in supporting operational efficiency, optimizing resource allocation, and enhancing decision-making quality [1].

Traditional budgeting practices in SMEs are often characterized by static annual plans, manual data processing, and a strong reliance on managerial judgment and experience. While such approaches may be sufficient in stable environments, they are increasingly inadequate in contexts marked by rapid changes in demand, costs, and external economic conditions. Cost control mechanisms in SMEs likewise tend to focus on post hoc financial reporting rather than proactive monitoring and early risk identification. As a result, financial decisions are frequently reactive, limiting the firm's ability to respond promptly to emerging risks and opportunities.

The advancement of artificial intelligence (AI) technologies offers new possibilities for addressing these limitations. Through the automated processing and analysis of large volumes of financial and operational data, AI systems can support more accurate

Received: 05 November 2025
Revised: 28 December 2025
Accepted: 11 January 2026
Published: 17 January 2026

forecasting, real-time monitoring, and scenario-based analysis. In the context of budgeting and cost control, AI-assisted tools enable a shift from static, experience-driven decision-making toward dynamic, data-driven financial management, reshaping the traditional role of managerial judgment from a primary driver to a component within a human-AI collaboration framework. This transformation aligns with the principles of Beyond Budgeting by emphasizing adaptability and decentralized decision-making, while also challenging the rigid, centralized nature of traditional budgeting models. It can be theoretically positioned within the automation-augmentation paradox, as AI augments rather than fully replaces human judgment, enhancing managerial capabilities through data-driven insights. This is particularly relevant for SMEs seeking to improve financial control without substantially increasing organizational complexity, and it contributes to building dynamic capabilities under uncertain environments by enabling faster and more informed responses to change.

Despite the growing interest in AI applications within corporate finance, many existing studies focus on large enterprises or emphasize technical algorithmic development. There remains a lack of practical, management-oriented models tailored to the specific characteristics and constraints of SMEs. In particular, limited attention has been given to how AI-assisted budgeting and cost control can be systematically integrated into SME financial decision-making processes in a feasible and scalable manner, or to the new managerial capabilities-such as data literacy, adaptive planning, and collaborative decision-making-required to leverage these tools effectively.

This paper aims to address this gap by proposing a practical model for AI-assisted budgeting and cost control designed specifically for SMEs. Rather than focusing on mathematical formulations or empirical testing, the study adopts a conceptual and application-oriented approach. It examines how AI can support key stages of budgeting and cost management, including forecasting, monitoring, and decision support, while emphasizing human-AI collaboration in managerial decision-making.

The contribution of this study is twofold. From a practical perspective, it provides SMEs with a structured framework for adopting AI-assisted financial management tools in a cost-effective and operationally feasible way, addressing the need for new managerial capabilities and dynamic responses to uncertainty. From a theoretical perspective, it enriches the discussion on AI-enabled financial decision-making by highlighting the managerial logic and organizational implications of integrating AI into budgeting and cost control processes, and by engaging with existing budgeting theories and the automation-augmentation paradox.

The remainder of the paper is organized as follows. Chapter 2 analyzes the practical challenges faced by SMEs in traditional budgeting and cost control. Chapter 3 discusses the underlying logic and functional role of AI in financial management from both technological and managerial perspectives. Chapter 4 presents a practical model for AI-assisted budgeting and cost control. Chapter 5 explores key application scenarios of the model in SME financial decision-making, including how it fosters human-AI collaboration and dynamic capabilities. Chapter 6 examines implementation conditions, required managerial capabilities, and potential risks. Chapter 7 concludes the paper and outlines directions for future research [2].

2. Challenges of Budgeting and Cost Control in SMEs

Budgeting and cost control are essential components of financial management in SMEs, yet their practical implementation often falls short of managerial expectations. Unlike large enterprises with specialized finance departments and advanced information systems, SMEs typically operate with simplified financial structures and limited analytical capacity. These constraints shape the way budgeting and cost control are conducted and contribute to a range of persistent challenges, which also inform the criteria for assessing an SME's readiness to adopt more advanced solutions, such as AI-assisted tools.

One of the most common issues in SME budgeting is the reliance on static and short-term planning. Budgets are frequently prepared on an annual basis using historical data and managerial judgment, with limited consideration of changing market conditions or operational uncertainties. Once approved, these budgets are rarely adjusted in a timely manner, even when actual performance deviates significantly from initial assumptions. This rigidity reduces the usefulness of budgets as dynamic management tools and weakens their role in guiding day-to-day decision-making.

Cost control practices in SMEs also tend to be reactive rather than proactive. Cost information is often reviewed after expenditures have occurred, primarily for accounting or compliance purposes. As a result, managers are able to identify cost overruns only after they have already affected financial performance. The absence of early warning mechanisms and forward-looking analysis makes it difficult for SMEs to prevent inefficiencies or respond quickly to emerging cost pressures, highlighting the potential benefit of tools that offer proactive insights.

Data-related limitations further exacerbate these challenges. In many SMEs, financial data and operational data are stored in separate systems or even managed manually. The lack of integration between sales, production, procurement, and accounting information restricts the firm's ability to conduct comprehensive cost analysis. In addition, data quality issues, such as incomplete records or inconsistent classification standards, reduce the reliability of financial analysis and undermine managerial confidence in data-based decision-making. Addressing these data foundations is a critical organizational change and a key prerequisite for successful AI implementation.

Another important challenge lies in the decision-making process itself. Budgeting and cost control decisions in SMEs are often concentrated in the hands of a small number of managers or business owners. While this centralized approach allows for quick decisions, it also increases dependence on individual experience and intuition. In uncertain environments, such subjective judgment may lead to biased forecasts, conservative resource allocation, or delayed responses to financial risks. This underscores the need for a balanced approach where AI-driven insights augment, rather than wholly replace, managerial flexibility and intuition, a balance that top management must actively champion to foster trust and acceptance.

External environmental uncertainty further complicates budgeting and cost control in SMEs. Fluctuations in demand, input prices, and financing conditions can rapidly alter cost structures and revenue expectations. Without effective tools to analyze multiple scenarios and assess potential impacts, SMEs struggle to incorporate uncertainty into their financial planning. Consequently, budgets may lose relevance soon after they are implemented, limiting their value as instruments of control and coordination [3]. The effectiveness of new tools like AI in this context should be measured not only by traditional financial performance indicators but also by improved adaptability, forecasting accuracy, and the quality of strategic decision-making.

Taken together, these challenges highlight the structural limitations of traditional budgeting and cost control approaches in SMEs. They also reveal a growing gap between the complexity of the business environment and the analytical capabilities available to SME managers. Addressing this gap requires new approaches that enhance forecasting accuracy, improve data integration, and support more informed and timely financial decisions. This context provides a strong rationale for exploring the role of AI-assisted tools in transforming budgeting and cost control practices in SMEs, while simultaneously raising critical questions about readiness assessment, implementation strategy, and success measurement.

3. The Role of AI in Budgeting and Cost Control for SMEs

The application of artificial intelligence in financial management represents a fundamental shift in how information is processed and used for decision-making. In the

context of budgeting and cost control for SMEs, AI should not be viewed merely as a set of complex algorithms, but rather as an enabling tool that enhances analytical capability, supports managerial judgment, and improves the timeliness and relevance of financial information [4].

At its core, AI-assisted budgeting relies on the ability to process large volumes of historical and real-time data from multiple sources. Unlike traditional approaches that depend primarily on past financial records, AI systems can incorporate operational data, such as sales patterns, production levels, and procurement activities, as well as external information related to market conditions. This broader data foundation allows budgeting processes to move beyond simple trend extrapolation and toward more adaptive and forward-looking planning. However, this reliance on historical data also introduces the risk of reinforcing historical data bias if not properly managed, underscoring the need for robust data governance practices, including regular audits of training data and assumptions. Moreover, the effectiveness of this approach can be constrained by the limited digital maturity of many SMEs, which may struggle with data fragmentation and inadequate technical infrastructure, posing significant practical challenges to implementation.

In cost control, AI contributes by identifying patterns and relationships that may not be immediately visible through manual analysis. By continuously monitoring cost behavior across different activities and departments, AI-assisted systems can highlight deviations from expected cost levels and signal potential inefficiencies at an early stage. Such capabilities shift cost control from an ex post evaluation function to an ongoing management process, enabling SMEs to intervene before cost overruns become severe.

An important characteristic of AI-assisted financial management is its emphasis on prediction and scenario analysis. Rather than producing a single fixed budget, AI tools can support rolling forecasts and generate alternative scenarios based on changes in key assumptions. This functionality is particularly valuable for SMEs operating in uncertain environments, as it allows managers to assess the financial implications of different strategic or operational choices and to prepare contingency plans accordingly [5]. Nevertheless, overreliance on AI-generated scenarios, without critical managerial oversight, represents a significant risk. This overreliance can lead to automation bias, where managers unduly trust algorithmic outputs, potentially overlooking contextual nuances or novel situations not reflected in historical data. Such conditions, including rapidly changing markets with no historical precedent or scenarios where qualitative factors dominate, are precisely where AI-assisted budgeting might fail to improve decision quality. Mitigation requires maintaining strong human-in-the-loop review processes and fostering a culture of critical inquiry toward AI recommendations.

Despite these analytical strengths, AI does not replace managerial decision-making. Instead, it reshapes the relationship between data and judgment. AI systems provide insights, forecasts, and alerts, while managers retain responsibility for interpreting results and making final decisions. This human-AI collaboration is especially relevant in SMEs, where contextual knowledge and strategic intuition remain critical. Effective collaboration depends on ensuring data quality and security, which necessitates foundational data governance practices such as establishing clear data ownership, standardized classification protocols, and secure access controls.

From an organizational perspective, the adoption of AI in budgeting and cost control encourages a more integrated view of financial management. By linking financial outcomes to operational drivers, AI-assisted systems promote cross-functional coordination and improve transparency. This integration supports more coherent decision-making and aligns budgeting and cost control activities with overall business objectives.

In summary, AI introduces a new logic to budgeting and cost control in SMEs, characterized by data integration, continuous analysis, and forward-looking decision support. Understanding this logic-alongside its associated risks, data prerequisites, and

implementation constraints related to digital maturity-is essential for designing practical models that fit the organizational realities of SMEs. Building on this conceptual foundation, the next chapter proposes a structured model for AI-assisted budgeting and cost control that emphasizes applicability and managerial relevance [6].

4. A Practical Model for AI-Assisted Budgeting and Cost Control in SMEs

To effectively integrate artificial intelligence into budgeting and cost control practices, SMEs require a model that is both analytically robust and operationally feasible. Given the resource constraints and organizational characteristics of SMEs, the proposed model emphasizes simplicity, adaptability, and managerial relevance rather than technical complexity. The model is designed as a structured decision-support framework that connects data inputs, intelligent analysis, and managerial outputs in a continuous and dynamic process.

The foundation of the model lies in the integration of relevant data sources. Financial data, including historical budgets, actual expenditures, and cost classifications, form the core input. These data are complemented by operational information such as sales volumes, production activity, inventory levels, and procurement records. Where feasible, external data related to market trends or price fluctuations may also be incorporated. By consolidating these diverse data streams, the model addresses one of the key limitations of traditional SME financial management: fragmented and underutilized information.

Building on this integrated data base, the model employs AI-assisted analytical functions to support budgeting and cost control. In the budgeting phase, AI tools are used to generate forecasts based on historical patterns and current operating conditions. Rather than producing a single static budget, the model supports rolling and adjustable budgets that can be updated as new information becomes available. This approach enhances flexibility and allows SMEs to respond more effectively to changes in their business environment. The benefits of this flexibility and responsiveness are particularly pronounced for SMEs when compared to large enterprises; while large firms may leverage AI for optimizing complex, large-scale operations, SMEs often derive greater relative value from AI in enhancing agility, improving resource allocation in constrained settings, and democratizing analytical capabilities typically unavailable to them. However, the extent of these benefits, and indeed the model's overall applicability, can be significantly influenced by industry characteristics. For instance, manufacturing-oriented SMEs with structured operational data (e.g., production metrics, supply chain logs) may experience different adoption outcomes-potentially faster integration and more immediate impact on cost control-compared to service-oriented SMEs, where data may be less quantitative and more relational. Furthermore, the effectiveness of such AI-assisted systems is moderated by environmental uncertainty; in highly volatile contexts, the system's ability to provide dynamic forecasts and scenarios becomes critically valuable, whereas in stable environments, its incremental benefit may be less pronounced.

In terms of cost control, the model focuses on continuous monitoring and early detection of deviations. AI-assisted analysis compares actual cost behavior with expected patterns derived from budget assumptions and historical data. When significant deviations occur, the system highlights these anomalies and provides managers with timely alerts. This mechanism shifts cost control from a retrospective review process to a proactive management function, enabling corrective action before financial performance is adversely affected.

A key feature of the proposed model is its decision-support orientation. The outputs generated by AI analysis are not treated as automatic instructions but as structured inputs to managerial judgment. These outputs may include budget adjustment suggestions, identification of high-risk cost areas, and scenario-based evaluations of alternative decisions. Managers remain responsible for evaluating these insights in light of strategic priorities, operational constraints, and qualitative considerations. This design

acknowledges that the ultimate acceptance and effectiveness of AI-supported decision-making are not purely technical issues but are also shaped by cultural and institutional contexts. For example, managerial trust in automated systems and openness to data-driven recommendations can vary widely across different regional or organizational cultures.

The model also emphasizes its dynamic and iterative nature. Budgeting and cost control are not viewed as isolated activities but as interconnected processes that evolve over time. Feedback from budget execution and cost monitoring is continuously fed back into the system, allowing forecasts and control parameters to be refined. This learning-oriented process supports gradual improvement in budgeting accuracy and cost management effectiveness.

Importantly, the model is designed to be scalable and adaptable across different types of SMEs. While the level of data sophistication and analytical depth may vary, the underlying structure-data integration, intelligent analysis, and decision support-remains applicable. This flexibility makes the model suitable for SMEs at different stages of digital maturity and reduces barriers to adoption [7].

Overall, the proposed practical model demonstrates how AI-assisted budgeting and cost control can be embedded into SME financial decision-making in a realistic and manageable way. By aligning technological capabilities with managerial needs, the model provides a foundation for more informed, timely, and adaptive financial decisions.

5. Application of the AI-Assisted Model in SME Financial Decision-Making

The practical value of the proposed AI-assisted budgeting and cost control model is reflected in its application across different stages of financial decision-making in SMEs. By embedding intelligent analysis into routine financial management activities, the model supports more informed and timely decisions without fundamentally altering existing organizational structures.

In the budgeting stage, the model enhances decision-making by improving the accuracy and flexibility of financial planning. AI-assisted forecasts provide managers with budget estimates that are grounded in both historical performance and current operational conditions. This enables SMEs to move beyond fixed annual budgets toward rolling planning practices. As a result, management can adjust budget targets in response to changing demand, cost fluctuations, or strategic shifts, reducing the risk of relying on outdated assumptions. This enhanced agility directly contributes to the development of dynamic capabilities, allowing SMEs to reconfigure resources more effectively in uncertain environments.

During budget execution, the model supports ongoing monitoring and control. Actual financial performance is continuously compared with budgeted expectations, allowing deviations to be identified at an early stage. Rather than serving solely as a reporting tool, budget variance analysis becomes an active decision-support mechanism. For instance, AI can help categorize variances by their operational drivers (e.g., sales volume, input price, production efficiency), providing managers with contextual insights for corrective action. This process fosters a higher quality of human-AI collaboration, where managers interpret AI-generated alerts within their strategic and operational context.

The model also plays a significant role in cost control decisions. By analyzing cost behavior across different activities and departments, AI-assisted tools help identify cost drivers and areas of inefficiency. This enables SMEs to focus managerial attention on critical cost items rather than applying uniform cost-cutting measures. Such targeted control supports more efficient resource use and reduces the risk of undermining operational performance.

In addition, the model facilitates scenario-based financial decision-making. By generating alternative projections under different assumptions, managers can evaluate

the potential impact of strategic options such as pricing adjustments, capacity changes, or investment decisions. This capability is particularly valuable for SMEs facing high uncertainty, as it allows decision-makers to assess risks and trade-offs before committing resources. The long-term value of this practice lies in building financial resilience through better-prepared contingency planning.

At the strategic level, the AI-assisted model contributes to improved alignment between financial decisions and business objectives. By linking budget outcomes and cost behavior to operational activities, the model enhances transparency and supports cross-functional coordination. Financial decisions are thus better integrated with production, marketing, and procurement planning, reinforcing the role of budgeting and cost control as tools for strategic management rather than mere accounting functions. Future integration with formal performance evaluation and strategic planning systems would further solidify this alignment.

Overall, the application of the AI-assisted model transforms budgeting and cost control into continuous, data-informed processes that support managerial decision-making across multiple levels. By providing timely insights and structured analysis, the model enables SMEs to respond more effectively to uncertainty and to make financial decisions that are both proactive and strategically coherent. The effectiveness of this transformation in practice invites empirical validation through longitudinal case studies, which could develop specific metrics to assess improvements in forecasting accuracy, response times, and the quality of strategic trade-off analyses.

6. Implementation Conditions and Potential Risks

While the proposed AI-assisted budgeting and cost control model offers significant potential benefits for SMEs, its effective implementation depends on several organizational, technical, and managerial conditions. Recognizing these conditions and associated risks is essential to ensure that the adoption of AI enhances, rather than complicates, financial decision-making.

From a technical perspective, the successful application of the model requires a basic level of data availability and system integration. SMEs must be able to collect and organize reliable financial and operational data in a consistent manner. Although advanced infrastructure is not a prerequisite, fragmented data systems or poor data quality can limit the effectiveness of AI-assisted analysis. Therefore, gradual improvements in data management practices are often a necessary first step before fully adopting AI-supported budgeting and cost control.

Organizational readiness is another critical factor. The implementation of AI-assisted tools often involves changes in established workflows and decision-making routines. Management support is essential to facilitate these changes and to promote acceptance among financial staff and other departments. In SMEs, where financial roles are frequently multifunctional, employees may require additional training to effectively interpret and utilize AI-generated insights. Without adequate understanding, there is a risk that AI outputs will be ignored or misused.

Cost considerations also play an important role in adoption decisions. Although AI technologies have become more accessible, SMEs must carefully evaluate the balance between implementation costs and expected benefits. Overly complex or expensive systems may place unnecessary financial pressure on small firms and undermine the intended efficiency gains. The model therefore emphasizes scalable and modular implementation, allowing SMEs to adopt AI functionalities gradually in line with their financial capacity.

In addition to implementation challenges, potential risks must be acknowledged. One such risk is overreliance on AI-generated recommendations. While AI can enhance analytical accuracy, it cannot fully capture qualitative factors such as organizational culture, strategic intent, or unexpected external events. Excessive dependence on

automated outputs may reduce managerial critical thinking and lead to suboptimal decisions.

Data security and privacy concerns also warrant attention. The integration of multiple data sources increases exposure to cybersecurity risks, particularly when cloud-based systems are used. SMEs often lack specialized resources for information security, making it essential to implement appropriate safeguards and access controls as part of the adoption process.

Finally, there is the risk that AI-assisted systems may reinforce existing biases embedded in historical data. If past budgeting or cost control practices were inefficient or overly conservative, AI analysis based on such data may perpetuate these patterns. Continuous managerial oversight and periodic model review are therefore necessary to ensure that AI-supported decisions align with evolving business objectives.

In summary, while AI-assisted budgeting and cost control offer promising opportunities for SMEs, successful implementation requires careful consideration of technical readiness, organizational capabilities, and potential risks. Addressing these factors increases the likelihood that AI will function as a supportive tool for informed and balanced financial decision-making.

7. Conclusion and Future Directions

This paper has examined the application of artificial intelligence in budgeting and cost control within the context of small and medium-sized enterprises. By focusing on managerial logic and practical feasibility, the study proposed a structured model that integrates AI-assisted analysis into SME financial decision-making processes. Rather than emphasizing technical complexity or empirical validation, the paper highlighted how AI can support more adaptive, informed, and proactive financial management.

The analysis demonstrated that traditional budgeting and cost control practices in SMEs are often constrained by static planning, fragmented data, and reliance on managerial intuition. In response to these challenges, the proposed AI-assisted model offers a dynamic framework that connects data integration, intelligent analysis, and decision support in a continuous cycle. By enhancing forecasting accuracy, enabling early cost monitoring, and supporting scenario-based evaluation, the model contributes to improved financial decision-making under uncertainty and to the development of dynamic capabilities within SMEs.

One of the key contributions of this study lies in its emphasis on human-AI collaboration. The model positions AI as a decision-support tool that augments, rather than replaces, managerial judgment. This perspective is particularly relevant for SMEs, where contextual knowledge and strategic flexibility are essential. By maintaining managerial control while leveraging AI-driven insights, SMEs can improve financial outcomes without sacrificing adaptability.

Despite its contributions, this study has certain limitations. The proposed model is conceptual in nature and has not been empirically tested through case studies or quantitative analysis. In addition, the discussion does not address industry-specific variations in detail, which may influence the applicability of AI-assisted budgeting and cost control practices. These limitations suggest opportunities for future research.

Future studies could extend this work by applying the model to specific industries or conducting empirical investigations, such as longitudinal case studies, to evaluate its effectiveness in practice. Further research may also explore the integration of AI-assisted budgeting with other management systems, such as performance evaluation or strategic planning, and develop specific metrics to assess the quality of human-AI collaboration in financial processes. As AI technologies continue to evolve, investigating how advances in explainable AI (XAI) can improve trust and transparency in SME financial decision-making represents another valuable direction. Ultimately, a critical line of inquiry should

examine the new managerial capabilities required for SMEs to successfully leverage AI and the role these systems play in fostering long-term financial resilience.

In conclusion, AI-assisted budgeting and cost control represent a promising approach for enhancing financial decision-making in SMEs. By adopting practical and scalable models aligned with managerial needs, SMEs can better navigate uncertainty and support sustainable growth in an increasingly data-driven business environment.

References

1. E. Brynjolfsson, and A. N. D. R. E. W. Mcafee, "The business of artificial intelligence," *Harvard business review*, vol. 7, no. 1, pp. 1-2, 2017.
2. T. H. Davenport, and R. Ronanki, "Artificial intelligence for the real world," *Harvard business review*, vol. 96, no. 1, pp. 108-116, 2018.
3. T. Libby, and R. M. Lindsay, "Beyond budgeting or budgeting reconsidered? A survey of North-American budgeting practice," *Management accounting research*, vol. 21, no. 1, pp. 56-75, 2010. doi: 10.1016/j.mar.2009.10.003
4. S. Becker, M. Messner, and U. Schäffer, "The evolution of a management accounting idea: the case of beyond budgeting," *Available at SSRN 1535485*, 2010. doi: 10.2139/ssrn.1535485
5. S. Raisch, and S. Krakowski, "Artificial intelligence and management: The automation-augmentation paradox," *Academy of management review*, vol. 46, no. 1, pp. 192-210, 2021. doi: 10.5465/2018.0072
6. S. F. Wamba, A. Gunasekaran, S. Akter, S. J. F. Ren, R. Dubey, and S. J. Childe, "Big data analytics and firm performance: Effects of dynamic capabilities," *Journal of business research*, vol. 70, pp. 356-365, 2017.
7. J. Jöhnk, M. Weißert, and K. Wyrtki, "Ready or not, AI comes-an interview study of organizational AI readiness factors," *Business & information systems engineering*, vol. 63, no. 1, pp. 5-20, 2021.