



A Systematic Review of Digital Technology Adoption in Small and Medium-Sized Enterprises: Implications for Performance in Developing Countries

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Abstract. This study systematically reviews existing literature on digital technology adoption in small and medium-sized enterprises (SMEs), focusing on its implications for performance in developing countries. SMEs are pivotal in economic development but face challenges in adapting to volatile markets and digital transformations. Using the PRISMA framework, 192 articles were identified, with 13 selected for final analysis. Findings reveal that analytical techniques like Partial Least Squares Structural Equation Modeling (PLS-SEM), SWOT analysis, and the Technology Acceptance Model (TAM) are commonly employed to assess digital adoption's impact. Results show that digital platforms improve operational efficiency, financial performance, and competitiveness, with fintech and social media marketing proving particularly effective. However, barriers like inadequate infrastructure and digital literacy persist. The review emphasizes the need for strategic integration, managerial support, and regional adaptation to fully harness the digital economy's benefits. Future research should explore longitudinal impacts and the role of socio-cultural and policy frameworks in enhancing SME performance.

Keywords: SMEs, Digital Technology, Systematic Literature Review

1 Introduction

Small and medium enterprises (SMEs) are one of the business sectors that can accelerate economic development in developing countries, including Indonesia (Al-Haddad et al., 2019). MSMEs in Indonesia cover around 99% of the total business units, contribute to the national Gross Domestic Product (GDP) up to 60.51%, and absorb almost 97% of the total workforce in Indonesia (Limanseto, 2024). However, rapid changes in the corporate environment have significantly increased market volatility, threatening the viability of SME enterprises. Due to their limited resources, SMEs face more issues than big companies in this unpredictable business environment. SMEs must develop the capabilities required to rapidly adjust to the constantly shifting needs of their customer base and effectively handle unexpected challenges (Ratanavanich & Charoensukmongkol, 2023).

One aspect that businesses must develop is agility in terms of how they adopt digital practices. As shopping habits continue to shift from traditional stores to digital platforms, including social media, consumers increasingly prefer online purchasing options and digital adoption has become essential for businesses in almost every sector since the beginning of the COVID-19 pandemic (Charoensukmongkol & Pandey, 2023). The COVID-19 pandemic significantly impacted consumer behavior. It has raised the demand for contactless technology, automation, and the acceptance of new ideas. The crisis has also radically altered how companies function and how people adjust to a "new normal" way of living (Onngam & Charoensukmongkol, 2024). The current economic landscape has propelled the digital economy's expansion far beyond Klaus Schwab's original predictions when he introduced the Fourth Industrial Revolution (IR 4.0) during the 2016 World Economic Forum. Given the market's unpredictability, companies and investors must remain competitive to survive (Zhu et al., 2019). Therefore, it is important to explore the impact of the digital economy on improving SME performance based on previous studies so that types of digital economy that have a significant impact can be identified.

Numerous prior studies on the digital economy have addressed topics such as the influence of digitalization on financial outcomes, the effectiveness of digital marketing in enhancing SMEs' marketing success, and the role of big data analytics, supply chain management, and production in fostering technological innovation in SMEs (Opoku et al., 2024; Setiawan et al., 2023; Toni et al., 2024). The difference between this research and previous research is that this research focuses more on analysis using a systematic literature review. This study seeks to investigate how an efficient digital economy can be implemented by analyzing findings from earlier studies and identifying methodologies employed to evaluate the digital economy's impact on SMEs' performance. The results are expected to contribute to policy recommendations and highlight areas for future research into the digital economy's role in SMEs.

2 Introduction

This study used the systematic literature review technique because it provides a thorough, organized way to find, evaluate, and synthesize previous research on specific subjects (Peričić & Tanveer, 2019). The systematic literature review in this study is guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) framework, which lists specific procedures and necessary components. In particular, this evaluation includes the eligibility requirements, information sources, and a flowchart that shows the research selection and data collecting method in accordance with PRISMA principles.

2.1 Formulation for the Research Question

- What analytical approaches are used to measure the role of digital economy on SME Performance?
- What is the role of digital economy towards SME Performance?

2.2 Identification, Screening, and Eligibility Process

This study used a number of keywords depending on research topics, including the principal keyword synonyms, to find relevant publications. The electronic data source was derived from the primary literature source. Scopus first identified 192 documents that were pertinent to the keywords. Screening is the next step. To refine the selection of articles retrieved through database searches, this research applies specific inclusion and exclusion criteria:

Table 1. The inclusion and exclusion criteria

Criteria	Eligibility	Exclusion
Language	English	Non-english
Keyword	“Fintech”, “SME Performance”	Article without “fintech” and “financial inclusion” as keyword

Following this screening process, the remaining articles were chosen not for book chapters but for their quality and publication in journals throughout the previous five years. Checking eligibility is the last step. Nine publications for additional analysis were chosen from among those that could answer to research questions for discussion and final analysis.

3 Result

3.1 Article Mapping Result

192 articles were discovered after identifying and collecting articles from 2020–2024 using Scopus. The number of articles published in 2020 is 29; in 2021, 24; in 2022, 46; in 2023, 60; and in 2024, 33. Over the past five years, 2023 has had the most research articles, with 60 articles (see Figure 1).

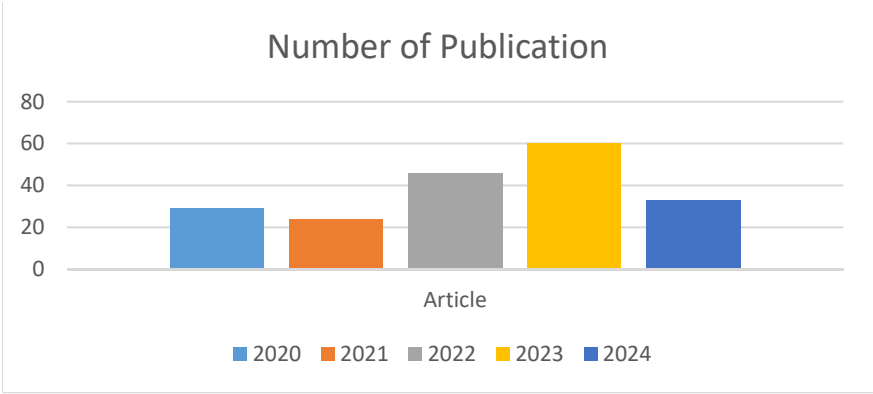


Fig. 1. Number of Publication from 2020-2024

The research outlines various techniques utilized in earlier studies to assess the digital economy's influence on SMEs' performance. As seen in Figure 2, out of the 14 chosen papers, 11 employed qualitative methods, one utilized the mixed approach, and one used quantitative methods.

3.2 Systematic Literature Review

By applying systematic literature review (SLR) protocols, researchers have identified 192 relevant papers in the Scopus database. There are nine journals in all among the chosen publications. Table 2 lists the specifics of the journals among the chosen articles utilized in this study, and Figure 3 illustrates the journal selection procedure using the PRISMA flow chart:

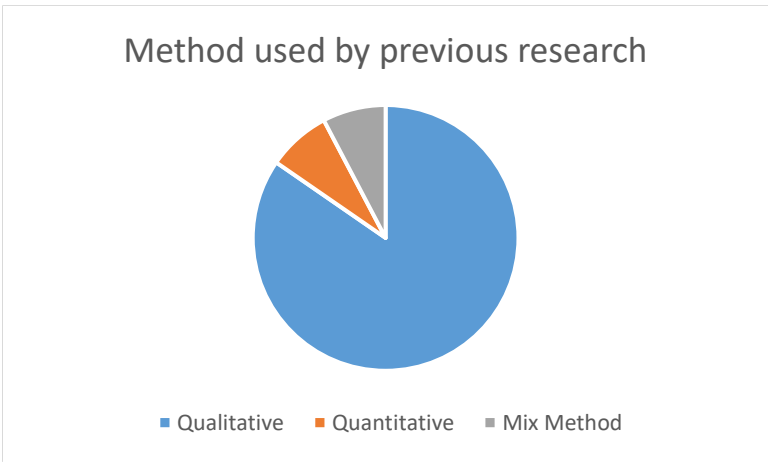


Fig. 2. Method Used by Previous Research

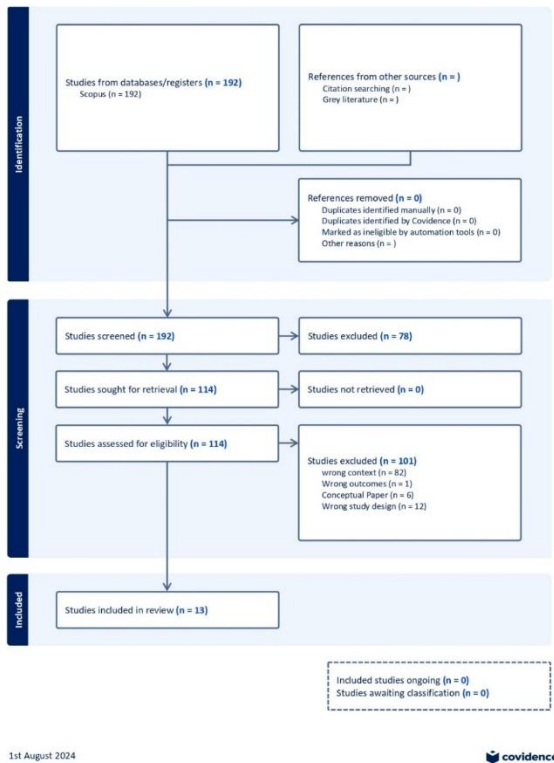


Fig. 3. PRISMA Diagram

Table 2. Journal Details

No	Title of the Article	Years	Source Title
1.	“Determinants of Facebook adoption and its impact on service-based small and medium enterprise performance in northwestern Nigeria”	(2020)	Journal of Systems and Information Technology
2.	“Can Financial Advantages and Digital Payments Adoption Provide Effective Solutions to Improve SMEs' Performance?”	(2024)	Montenegrin Journal of Economics
3.	“Effect of Financial Technology on SMEs Performance in	(2022)	Sustainability

	Cameroon amid COVID-19 Recovery: The Mediating Effect of Financial Literacy”		
4.	“Research on the Relationship between Digital Transformation and Performance of SMEs”	(2022)	Sustainability
5.	“The Effect of Financial Technology, Innovation, Business Strategy, and Market Orientation on Business Performance among Indonesian SMEs: A Study in Riau Province”	(2023)	Jurnal Pengurusan
6.	“The Impact of Mobile Money on the Financial Performance of the SMEs in Douala, Cameroon”	(2020)	Sustainability
7.	“The Source of SMEs’ Competitive Performance in COVID-19: Matching Big Data Analytics Capability to Business Models”	(2022)	Information Systems Frontiers
8.	“Understanding and predicting the determinants of blockchain technology adoption and SMEs’ performance”	(2023)	The International Journal of Logistics Management
9.	“An analysis of the effects of management accounting services on the financial performance of SME: The moderating role of information technology”	(2023)	Cogent Business & Management
10.	“Integration of information technology capabilities in generating small and medium enterprise performance”	(2023)	Uncertain Supply Chain Management
11.	“The effect of financial technology on financial performance in Jordanian SMEs: The role of financial satisfaction”	(2023)	Uncertain Supply Chain Management

12.	“Do Digital Finance and the Technology Acceptance Model Strengthen Financial Inclusion and SME Performance?”	(2022)	Information
13.	“Social Media Marketing and Business Performance in Brunei Darussalam Amid COVID-19 Crisis Darussalam Amid COVID-19 Crisis”	(2024)	ASEAN Journal on Science and Technology for Development

4 Discussion

4.1 Techniques for Analyzing the Impact of the Digital Economy on SME Performance

In order to determine the best strategies and areas for further research, this study looks at the analytical techniques used in earlier studies to evaluate the effect of the digital economy on SME performance. The majority of research, according to 13 chosen papers, use Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine how the digital economy affects the performance of SMEs. PLS-SEM is used because it can manage intricate models with several linked variables, which makes it perfect for analyzing the interdependent elements affecting SME performance, including business results, operational effectiveness, and fintech uptake. It works very well for forecasting important goal variables, especially for determining how the digital economy affects the performance of SMEs. Researchers may assess how different digital financial tools affect businesses using PLS-SEM.

SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) is another popular method in addition to PLS-SEM. It offers a systematic assessment of the internal and external elements influencing SMEs. By identifying its strengths and shortcomings, as well as external possibilities and dangers, researchers may provide a holistic picture of how the digital economy affects SME performance. Frameworks such as the Technology-Organization-Environment (TOE) framework and the Technology Acceptance Model (TAM) are also extensively applied to assess SME readiness for digital transformation. Constructs from TAM, including perceived usefulness and ease of use, are significant predictors of technology adoption and subsequent performance improvements.

Quantitative methods, including surveys and regression analysis, were prominent in the reviewed studies. For example, Lontchi et al., (2023) and Teng et al. (2022) used datasets of 300–400 respondents to assess digital adoption's direct and indirect effects robustly. Descriptive statistics, structural equation modeling (SEM), and interviews were employed to provide deeper insights into the relationship between digital

adoption and financial outcomes. Some studies combined qualitative and quantitative approaches to leverage convergent data for a more comprehensive understanding of the subject. Sampling methods such as purposive and accidental sampling dominated data collection, while case studies and interviews explored specific sectors or regional contexts, for instance Putra et al. (2023). These methods highlighted operational challenges and resource gaps affecting performance metrics.

4.2 The Role of the Digital Economy in SME Performance

Digital technologies have significantly transformed SME operations, contributing to cost reduction, revenue growth, and enhanced competitiveness. For instance, SMEs leveraging e-commerce platforms, fintech solutions, or ERP systems have reported reduced transaction costs and improved workflow automation. Abdullahi et al. (2022) highlighted Facebook as a cost-effective marketing channel for SMEs in Nigeria, enhancing visibility and customer reach. Khan & Matali (2024) also found a significant impact of social media marketing (SMM) on SME resilience in Brunei during the COVID-19 crisis. Similarly, fintech adoption has driven revenue growth; Lontchi et al. (2022) found that faster payment processing and improved cash flow management positively impacted SME revenues in Cameroon.

Digital platforms also enable SMEs to incorporate customer feedback into iterative improvement processes, as shown by Teng et al. (2022), where Chinese SMEs prioritized digital transformation to maintain global competitiveness. However, regional challenges such as limited digital literacy and inadequate infrastructure hinder success. For example, Savitri et al., (2023) demonstrated that addressing these gaps in Indonesia's Riau Province could unlock substantial performance benefits.

Emerging technologies such as mobile money, blockchain, and IT systems serve as enablers for financial inclusion and competitive advantage. Talom & Tengeh (2019) demonstrated that mobile money services contributed 73% to SME turnover variance in Douala, Cameroon, by improving financial transactions and market accessibility. Blockchain adoption, as noted by Bag et al. (2023), enhanced financial and market performance, with top management support playing a pivotal role. Additionally, external support like management accounting services (Gyamera et al., 2023) and financial satisfaction (Alkhawaldeh et al., 2023) mediate the relationship between digital adoption and SME performance. Alkhawaldeh et al. (2023) and Thathsarani & Jianguo (2022) also showed that fintech-facilitated financial inclusion improved SME performance in two different areas, Jordan and Sri Lanka. Sustained efforts to enhance financial literacy and satisfaction were essential to maintain this growth.

4.3 Challenges and Strategic Integration

Despite the advantages, SMEs face challenges in digital transformation, such as a lack of strategic goals and inadequate technology adoption capabilities (e.g., Teng et al., 2022). Studies underscore the importance of top management support. Savitri et al. (2022) argues that SME owner-managers play a pivotal role in driving innovation, business strategies, and market orientation through fintech adoption. These findings underscore the importance of strategic integration, contextual adaptation, and managerial readiness in leveraging digital technologies. Recurring themes include infrastructure development, top-down management support, and strategic alignment. Studies (e.g., Bag et al., 2023; Song et al., 2022) emphasize that poor planning undermines the potential benefits of digital adoption, while well-implemented strategies enable SMEs to enhance financial and operational outcomes, innovate, and compete globally.

Studies highlight significant regional variations. For example, in Indonesia's Riau Province, digital transformation is hampered by limited digital literacy and infrastructure, as noted by Savitri et al. (2023). Addressing these gaps can unlock substantial performance benefits. Contextual factors, such as the COVID-19 pandemic, further shaped the adoption of digital technologies. The reviewed studies, published between 2020 and 2024, emphasize how the pandemic accelerated digitalization. SMEs adopted e-commerce and fintech to sustain operations during lockdowns (e.g., Musyaffi, 2024), underscoring the resilience-building potential of the digital economy. Musyaffi et al. (2024) found that digital payment systems and online platforms were instrumental in helping SMEs maintain operations during the pandemic.

5 Conclusion

This systematic review highlights the substantial benefits of the digital economy for SME performance, particularly in developing economies. However, its success depends on strategic integration, contextual relevance, and managerial readiness. Digital technologies serve as catalysts for financial growth, innovation, and resilience, especially during crises like the COVID-19 pandemic. Future research should explore longitudinal impacts of digital adoption and the interplay of socio-cultural factors, alongside the role of public policies in fostering digital ecosystems for SMEs. Strategic alignment, infrastructure development, and enhanced financial literacy remain vital for maximizing the digital economy's transformative potential.

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