

Harnessing Knowledge Management for SME Sustainability and Competitiveness: A Dynamic Capabilities Conceptual Framework

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Abstract

This article presents a conceptual framework for Knowledge Management Excellence in SME Sustainability. The key factors influencing the sustainability of SME were identified from previous literature and empirical studies. The framework was built on established sustainability and capability models, emphasising the strategic role of knowledge management in driving long-term competitiveness. The proposed framework positions dynamic capabilities as a foundation for developing a knowledge management excellence model, specifically sensing, seizing, and transforming/reconfiguring, enabling SME to adapt to environmental changes, exploit opportunities, and maintain sustainable performance. Within this framework, information sharing, learning culture, and technological readiness serve as critical enablers that enhance knowledge utilisation and innovation capacity. By integrating these elements, SME can strengthen their adaptability and resilience in an increasingly volatile business environment. The study reorganises and extends existing sustainability factors into new sub-categories, providing deeper insights into how knowledge management can reinforce sustainability and competitiveness. Ultimately, the proposed framework provides a structured conceptual foundation to guide both academic research and managerial practice in fostering sustainable growth among SME

Keywords: *Dynamic Capability Theory, Innovation Knowledge Management, Small and Medium Enterprises, Sustainability.*

INTRODUCTION

Small and medium-sized enterprises (SME) are central to the economic systems of many countries worldwide. They comprise the overwhelming majority of firms, account for more than half of global employment, and make significant contributions to national output across both developed and emerging economies (World Bank, 2025). During the 2025 ASEAN summit gatherings in Malaysia, the ASEAN Business and Investment Summit (ABIS) highlighted the regional commitment to improving the structure and performance of businesses (Salim, 2025). The discussions in the meeting have stressed the digital economic integration, investment facilitation, and the inclusion of micro-businesses in regional value chains. The regional integration initiatives might have progressed, but many ASEAN countries still struggle with persistent gaps in formalisation, innovation capacity, cross-border participation, and alignment with environmental sustainability standards (OECD, 2024). While improving visibility and connections, these forums alone do not address the structural barriers SME face, which depend on domestic execution. The situation is further exacerbated by the findings from the Asia SME Monitor, which reveal inconsistencies in policy enforcement and fragmented access to financial resources, thereby impeding SME' ability to expand and maintain competitiveness (Asian Development Bank, 2024). Thence, SME continue to operate amid chronic constraints, particularly in financing, technological capability, and vulnerability to economic shocks. These limitations raise critical questions about the long-term durability and competitiveness of the sector.

In Nusantara, SME play a vital role in Indonesia's economy by generating employment, contributing to GDP growth, and fostering innovation at the local level (Feldens & Jacinto, 2024; Watson et al., 2023). SME are essential for revitalising the local economy and providing financial support to many households, particularly in rural areas. Ministry of Cooperatives and SME (2023) stated that SME contribute approximately 61% to Indonesia's GDP and absorb 97% of the total

workforce, supporting the nation's economic resilience. Micro, Small, and Medium Enterprises (MSMES) account for over 90% of job possibilities and employ nearly 90% of women and youth in the labour force (Hermawan & Nugraha, 2022). Recent years have witnessed a notable increase in publications about the sustainability of small businesses, reflecting a growing awareness and recognition of the importance of sustainability for SME (Durst et al., 2024; Martins et al., 2022).

Research has been conducted on various topics related to sustainability, including innovation, supply chains, sustainable entrepreneurship, stakeholder engagement, challenges, and advantages for the sustainability of SME (Martins et al., 2022). OECD (2024) shows that SME comprise nearly the entire formal business landscape across the region, yet their performance remains mixed, with productivity levels often lagging behind those of larger enterprises. With more than 64 million MSMEs, the country relies heavily on this segment for employment and domestic economic activity (Ministry of Cooperatives and SME, 2024). The sector demonstrated considerable adaptability during and after the pandemic period, with many firms rapidly transitioning to digital channels, including online marketplaces, digital payments, and social media-based marketing. Government initiatives and public-private collaborations such as Go Digital SME and the Strive Indonesia programme have contributed to expanding digital literacy and adoption among smaller enterprises (United Nations Development Programme, 2024).

Nevertheless, the sustainability of Indonesian SME is shaped by several long-standing structural conditions. Low productivity and persistent informality continue to undermine SME' competitiveness by limiting their capacity for technological upgrading and reducing their ability to participate in export markets, while the cost and complexity of meeting sustainability requirements including environmental compliance, energy-efficiency measures, and ESG-related standards further constrain their long-term viability (OECD, 2024; Asian Development Bank, 2024). The disastrous pandemic in 2020 made these structural weaknesses even more visible. Numerous MSMEs faced sharp drops in revenue, disruptions to their supply chains, and periods of forced closure at the peak of COVID-19 (Maulana et al., 2024).

Recovery was uneven; firms that moved quickly into digital platforms, broadened their product or service mix, or secured emergency support demonstrated noticeably better post-pandemic performance (Supari and Anton, 2022). These suggest that resilience and sustainability are strongly linked to digital readiness, liquidity support, and effective policy assistance. Yet, most of existing research on this issue focuses on specific regions or countries, making it difficult to compare and generalise findings across different contexts (Sakib & Rahman, 2024). Consequently, additional research is necessary to thoroughly understand the global adoption of sustainable practices for SME (Álvarez Jaramillo et al., 2019; Xie & Hanafiah, 2023).

The lack of entrepreneurial ability is viewed as a major hindrance to MSMEs' growth (Tehseen & Ramayah, 2015; Yoshino & Taghizadeh Hesary, 2016). SME frequently fall short in understanding the essence of innovation and its spread for a variety of strategic economic, social, and environmental reasons, making SME' sustainability a critical topic for research prospects (Hameed & Irfan, 2019). SME are unprepared to deal with economic shocks, and the global need for sustainable business has resulted in poor ESG (Environmental, Social, Governance) practices and training (Ghazouani, 2022).

Management knowledge is essential to improve operational efficiency, promote ethical business behavior, and provide positive social and economic outcomes that benefit surrounding communities (Ibrahim Abdelhalim Ibrahim, 2022). With this knowledge, SME' managers can identify and capitalize on favorable conditions to thrive, foster innovation, and cultivate a sustainable culture of continuous learning within their organization, resulting in increased efficiency and resiliency in an ever-changing industry. When SME have proper knowledge management capabilities, they are better able to make informed decisions, use resources efficiently, and implement initiatives that promote social, ecological, and environmental sustainability (Appiah-Kubi, 2024).

Knowledge management involves the creation, collection, preservation, retrieval, and application of knowledge to secure a competitive edge and improve organisational performance. This process is intended to support organisational learning, innovation, decision-making, and competitive advantage (Tece, 2009). It involves the administration of knowledge assets, including employees' skills, expertise, and experiences, as well as organisational processes and structures

that facilitate the dissemination and utilisation of information (Xue, 2017). Knowledge management for organisational sustainability increasingly relies on artificial intelligence-driven systems, where machine learning enables intelligent knowledge bases to autonomously categorise, recommend, and generate knowledge content. The circular knowledge economy is a new approach linking knowledge management to organisational sustainability.

It treats knowledge as a renewable resource and uses a system where unused or outdated knowledge is reduced by reusing, updating, and sharing it instead of letting it be wasted (Kirchherr et al., 2017). Knowledge management can also refer to the process of developing, acquiring, storing, retrieving, and utilising knowledge to achieve a competitive advantage and improve organisational performance (Idrees et al., 2023). The future of knowledge management necessitates a balance between technological progress and ethical, ecological, and societal considerations. While prevailing human resource practices are effective for large, established organisations, they are often inadequate for small and medium-sized enterprises (SME), highlighting the need for further discussion on dynamic innovation and collaboration competencies for sustainability-focused SME and entrepreneurs.

Dynamic capability is a collection of competencies and capabilities that empower enterprises to develop novel processes and products while adapting to market fluctuations (Teece et al., 1997). It also refers to a firm's ability to integrate, develop, and reorganise internal and external competencies to effectively respond to changing conditions (Teece, 2009). It can also be defined as the organisational ability to deliberately create, augment, or alter its resource base. This contrasts with operational capabilities or ordinary capabilities, which relate to the organisation's real operations (Helfat, 2007). Dynamic capabilities are a crucial factor that allows firms to adapt and respond to swift changes in the business environment.

Despite variations in dynamic capabilities among firms, significant parallels exist in the fundamental characteristics that render these capabilities effective (Eisenhardt & Martin, 2000). The concept of dynamic capabilities elucidates how enterprises might leverage these skills to formulate resource configurations that yield competitive advantages more swiftly and intelligently than rivals (Cavusgil et al., 2007). Managers are expected to undertake entrepreneurial and leadership roles, encompassing identifying opportunities, formulating effective business models, enhancing their abilities, and reforming the firm. The entrepreneurial management duties comprise the organisation's competencies (Teece, 2016).

Dynamic capabilities have significantly improved, enabling managers' understanding to implement strategic transformations within organisations (Gonzalez-Samaniego et al., 2023). Moreover, these capabilities can enhance the resilience and adaptability of microbusinesses operating in volatile and uncertain markets (Shiferaw & Amentie Kero, 2024; Cavusgil & Deligonul, 2024).

Organisational sustainability is regarded as a crucial variable of interest in management research across various domains (Richard et al., 2009). It emphasised the significance of performance measurement in assisting the organisation to establish objectives, analyse and assess performance, and prepare for future actions (Al-Weshah et al., 2019). Organisational Sustainability is a prevalent idea frequently addressed in academic literature. The function of an organisation serves as the catalyst for the advancement of developing nations (Gavrea et al., 2011). The concept of organisational sustainability has been defined since the 1950s and continues to evolve in response to increasingly complex organisational objectives (Lebans & Euske, 2006). Georgopoulos & Tannenbaum (1957) defined organisational sustainability as the degree to which organisations, regarded as a social system, achieved their objectives. It can also be defined as the organisation's ability to exploit its environment for the procurement and utilisation of limited resources (Yuchtman & Seashore, 1967).

In the 2000s, organisational sustainability was defined by two components: financial and non-financial variables. The evaluation of an enterprise's environmental, social, and economic effects is an essential aspect of modern business practices, referred to as sustainable performance assessment. Assessing sustainability performance is essential for securing long-term corporate success and achieving sustainable development goals, as highlighted in the literature (Farchi et al., 2021). Sustainability performance evaluation methods must be more equitable by incorporating

diverse criteria and their interrelationships to address subjectivity and ambiguity. The study advocates for the integration of analytical evaluation and innovative research concepts to develop practical sustainability performance assessment frameworks (Farchi et al., 2021).

The impact of digital organisational culture and organisational learning culture on long-term business performance, particularly in local sectors, is significant (Aprilia et al., 2023). The effectiveness of sustainability significantly impacts corporate performance, which is affected by factors such as leverage, institutional ownership, and managerial ownership (Tristante et al., 2023). Knowledge management is essential for improving organisational sustainability by enabling organisations to adapt, innovate, and maintain a competitive advantage in changing contexts. The incorporation of knowledge management strategies enables companies to efficiently collect, disseminate, and utilise knowledge, resulting in enhanced environmental consciousness, the adoption of eco-friendly technology, and sustainable innovation. (Shebaib, 2023). Table 1 presents the study variables and the corresponding prior studies.

Table 1: Study Variables and Relevant Past Studies

Articles on knowledge measurement and performance	Author(s)
Knowledge measurement and performance	Asiaei et al. (2021); Cardoni et al. (2020); Farooq (2023); Henttonen et al. (2016); Lee and Wong (2015); Lee et al. (2005); Oufkir and Kassou (2019); Tseng (2008).
Knowledge management strategies	Dodla and Jones (2023); Earl (2001); Ferreira et al. (2020); Kamara et al. (2002); Merindol and Venkitachalam (2025).
Knowledge management capabilities	Amiri et al. (2023); Asiaei et al. (2021); Chen et al. (2025); Chuang (2004); Idrees et al. (2022); Lee et al. (2020); Mao et al. (2016); Rafi et al. (2022).
Knowledge Management Literature reviews	Durst et al. (2023); Durst et al. (2024); Durst and Runar Edvardsson (2012); Edwards and Lönnqvist (2023); Edwards (2022); Farooq (2024); Hafeez et al. (2025); Hujala and Laihonen (2021); Idrees et al. (2023); Kassa and Ning (2025).

RESEARCH METHOD

This study adopts a qualitative conceptual research design aimed at developing a framework based on theories that connect Knowledge Management (KM), Dynamic Capabilities (DC), and sustainability performance in SMEs. This research uses a systematic literature-based approach to synthesize knowledge management and build a new conceptual model. The research design follows the Knowledge-Based View (KBV), Dynamic Capability Theory (DCT), and Sustainability Theory (Triple Bottom Line) approaches. This approach is suitable for conceptual research aimed at extending existing theories and proposing new relationships among constructs. The aim is to identify key variables, explain the relationships between these variables, and develop a comprehensive framework that can be applied in the context of SMEs. Data collection methods thru an extensive literature review of journal articles that have undergone peer review, reports, and relevant academic sources. The selection of literature is focused on three main domains: Knowledge Management, Dynamic Capabilities (detecting, capturing, reconfiguring), and Organizational Sustainability.

The literature is sourced from reputable journals such as Scopus and Web of Science, ensuring the inclusion of high-quality and relevant studies. Priority is given to recent publications (the last 5–10 years) and includes works (Teece, 2007; Grant, 1996) to build the theoretical foundations. The analysis was conducted using a thematic synthesis approach, which involved the following steps: Identification of Key Constructs: Extracting recurring variables such as KM processes, KM drivers, dynamic capabilities, and sustainability outcomes. Categorization and Mapping: Grouping constructs into coherent categories (e.g., KM drivers, KM capabilities, sustainability performance). Theoretical Integration: Aligning the identified constructs with the DCT dimensions (sensing, seizing, reconfiguring) to establish causal relationships. Framework Development: Structuring these relationships into a conceptual model that explains how KM functions as a dynamic capability driving the sustainability of SMEs.

Knowledge management plays a crucial role in supporting organisational sustainability, as it enables firms to pursue long-term viability by balancing economic goals with environmental and social obligations (Beamer et al., 2021). By organising and utilising knowledge systematically, organisations can strengthen their decision-making processes, foster innovation, and enhance operational effectiveness, all of which contribute to sustainable outcomes (Damaševičius & Maskeliūnas, 2025). The importance of cultivating appropriate knowledge and competencies is also evident in the development of halal tourism, particularly within the halal tourism villages of Batang Regency (Pratiwi et al., 2024). The research paradigm posits that organisational sustainability in SME firms reflects the correlation between knowledge management and organisational performance.

The concept of entrepreneurial resilience, combined with digital transformation, enhances the literature through a multi-tiered framework that encompasses individual, organisational, and regional levels. Digital transformation is not merely an auxiliary instrument, but the essence of entrepreneurial resiliency. The amalgamation of digital technology, information management, and suitable legislation can enhance the sustainability of SME (Audretsch et al., 2024). The interplay among digital capacity, culture, and human capital within the talent-tolerance-technology framework facilitates the net influx of new enterprises; however, the synergy between technical capacity and human capital diminishes high-growth employment opportunities (Belitski et al., 2023). Knowledge management improves an organisation's capacity for effective innovation by promoting the production, sharing, and use of knowledge (Jorfi & Heidari, 2017). The research framework can be established through a review of the literature, prior studies, and the formulation of the hypothesis, as seen in the accompanying image.

Successful knowledge management practices encourage workers to share information, experiences, and knowledge, increasing collective intelligence. This synergy is crucial for strategic planning and corporate decision-making (Wulf & Butel, 2017). A synergistic framework that integrates current research on digital transformation with the domains of business and management, facilitating the development of an evolutionary approach (Kraus et al., 2022). These correspond to the sensing–seizing–transforming framework:

DCT Dimension	KM Capability	Description
Sensing	Knowledge Acquisition & Sharing	Identifying new knowledge, monitoring environmental changes, engaging with stakeholders, and sharing insights internally.
Seizing	Knowledge Application & Utilisation	Turning knowledge into innovative processes, products, or sustainable practices.
Reconfiguring	Knowledge Retention & Transformation	Embedding knowledge into routines, updating practices, learning from past actions, and institutionalising sustainability know-how.

Together, these KM processes constitute the dynamic capability that allows SME to remain adaptive and competitive in achieving sustainability. Knowledge management is an enabler (an antecedent of dynamic capabilities); these are organisational conditions that foster KM as a dynamic capability: leadership commitment, managerial vision for sustainability, and knowledge culture. Organisational learning culture (openness, collaboration, and continuous improvement). Technology infrastructure (digital tools enabling knowledge sharing and analytics). Human capital, employees’ skills, creativity, and absorptive capacity. Stakeholder engagement, collaboration with customers, suppliers, and communities. These enablers create the fertile ground from which dynamic knowledge management capabilities can emerge.

Sustainability Performance (Outcomes), Guided by the Triple Bottom Line (TBL): Economic: Productivity, innovation, competitive advantage, financial growth. Environmental: Eco-efficiency, waste reduction, sustainable resource use. Social: Employee well-being, community development, stakeholder trust. Knowledge management-based dynamic capabilities enable SME to integrate sustainability into their strategy and operations not as a constraint, but as a competitive resource.

Contextual Moderators, Since SME are resource-constrained and structurally flexible, several contextual factors moderate how KM translates into sustainability: Firm size and maturity, Industry dynamics, Regulatory environment, Organisational structure (formal vs informal), Cultural context (e.g., collectivism in Indonesian SME)

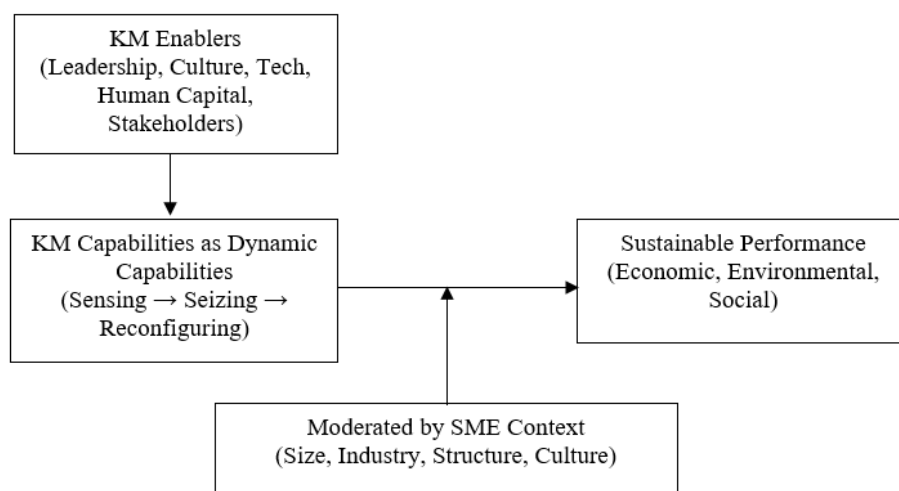


Figure 1: Conceptual Model Diagram

Figure 1 explains that the sustainability of SME not only depends on the resources they possess, but also on their dynamic capabilities in managing knowledge, namely, how organisations continuously acquire, utilise, and adapt knowledge to create economic, social, and environmental value.

The proposed model is based on Dynamic Capability Theory (DCT) (Teece, 2007) and the Knowledge-Based View (KBV) (Grant, 1996). This model explains that the ability of SME to achieve sustainability depends not only on the resources they possess, but also on their dynamic capability to manage knowledge, from acquiring and utilising it to adapting it to environmental changes. The proposed model positions Knowledge Management as a core mechanism for building Dynamic Capabilities in SME. Through sensing, seizing, and reconfiguring capabilities, SME can adapt to environmental changes and achieve sustainable performance. However, the effectiveness of this relationship is highly dependent on the organisational context – the more adaptive, open, and collaborative the SME structure, the stronger the influence of KM on economic, social, and environmental sustainability.

DISCUSSION

This research develops a conceptual framework that explains how Knowledge Management (KM) acts as a Dynamic Capability (DC) to achieve sustainability performance in Small and Medium Enterprises (SME). The proposed model integrates three main theoretical foundations: (1) Knowledge-Based View (KBV)-positions knowledge as the primary strategic resource; (2) Dynamic Capability Theory (DCT)-explains how organisations reconfigure resources to adapt to environmental changes; (3) Sustainability Theory / Triple Bottom Line (TBL)-assesses organisational success from economic, social, and environmental perspectives. The results of the conceptualisation show that KM functions not only as an administrative process, but as a dynamic mechanism that helps SME detect (sense) opportunities, leverage (seize) knowledge resources, and reconfigure capabilities to maintain sustainability.

In this model, KM Enablers (leadership, culture, technology, human resources, and stakeholder engagement) → build KM Capabilities as Dynamic Capabilities (sensing, seizing, reconfiguring) → improve Sustainable Performance; this influence is moderated by the SME context (size, industry, structure, culture). The foundation of DCT asserts that sensing, seizing, and reconfiguring rest on organisational micro-foundations that are difficult to imitate. This study contributes to the extension of Dynamic Capability Theory (DCT) through the contextualisation of it within SME sustainability and the explicit identification of Knowledge Management (KM) as a core enabling mechanism of dynamic capabilities. DCT highlights the capabilities of firms to sense, seize and reconfigure resources. However, the application of DCT in SMEs is underdeveloped, especially regarding sustainability outcomes. This research contributes to the theory by showing that KM processes (knowledge acquisition, sharing, integration and application) are important micro-foundations that operationalise these dynamic capabilities in resource-constrained environments.

CONCLUSION

This conceptual research aims to develop a theoretical framework that explains how Knowledge Management (KM) functions as a Dynamic Capability (DC) in improving sustainability performance in Small and Medium Enterprises (SME). Based on the synthesis of theory and literature, several key conclusions were obtained as follows:

Knowledge Management (KM) is not merely an administrative process for managing information, but a strategic and dynamic capability that helps SME detect opportunities (sensing), leverage knowledge resources (seizing), and adapt business structures and processes (reconfiguring) to align with sustainability demands. KM Enablers – such as visionary leadership, an open organisational culture, technological infrastructure, human resource competencies, and stakeholder engagement – serve as the main foundation for building KM Capabilities. These factors foster a learning environment that is innovation- and sustainability-oriented. KM Capabilities, acting as Dynamic Capabilities, have proven to be a key mechanism in improving the sustainable performance of SME, encompassing economic, social, and environmental dimensions. In other words, effective knowledge management can strengthen innovation, resource efficiency, and corporate social responsibility.

The relationship between KM capabilities and sustainable performance is influenced by the context of SME (moderating variable), such as company size, industry type, organisational structure, and work culture. This context determines how strongly KM can be implemented and transformed into sustainable performance.

Overall, the proposed model suggests that KM serves as a strategic bridge between knowledge resources and organisational sustainability, particularly in the dynamic and uncertain context of SME.

ACKNOWLEDGMENT

The authors acknowledge the funding received from Universitas Wahid Hasyim, which supported this research through the 2025 International Collaboration Research Grant Program. This funding significantly impacted the research outcomes and contributed to the successful completion of the project.

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