



Entrepreneurial Sustainability through Digital Innovation and Knowledge Capabilities: A Systematic Literature Review

Annisa Retno Utami^{1*} , Saparuddin Mukhtar² 
Suparno Suparno³ 

^{1,2,3} Universitas Negeri Jakarta, Jakarta, Indonesia
annisaretno4@gmail.com

Abstract. This study aims to analyze the relationship between **digital innovation** and **knowledge capabilities** as key drivers of **entrepreneurial sustainability** in the digital era. Using the **Systematic Literature Review (SLR)** approach with bibliometric and qualitative synthesis, this research maps theoretical developments and empirical findings from international studies published between 2018 and 2025. The theoretical foundation draws upon the **Dynamic Capability View (DCV)**, **Resource-Based View (RBV)**, and **Knowledge-Based Theory (KBT)** to explain how innovation and knowledge interact as strategic resources that foster adaptability, competitiveness, and long-term sustainability. The findings reveal that the integration of digital innovation and knowledge capability enhances an organization's ability to create value through technology adoption, continuous learning, and collaborative networks. Bibliometric visualization indicates an increasing research trend towards sustainability-oriented digital transformation, particularly focusing on MSMEs and entrepreneurial ecosystems. The synthesis also highlights that sustainability is no longer defined solely by financial outcomes, but also by digital readiness, knowledge diffusion, and an innovation culture that aligns with social and environmental values. This study contributes to the literature by developing a conceptual framework that links digital innovation and knowledge capability as dual enablers of sustainable entrepreneurship. It further provides implications for researchers, policymakers, and practitioners in designing adaptive and inclusive strategies to strengthen competitiveness in the digital economy.

Keywords: Digital Innovation, Knowledge Capabilities, Entrepreneurial Sustainability, Sustainable Business Model, Digital Transformation.

1. Introduction

The rapid development of digital technology has transformed the face of global entrepreneurship and opened up new opportunities for the creation of more adaptive, innovative, and sustainable business models. In this context, entrepreneurial sustainability is no longer solely measured by the ability to generate economic profits,

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but also by the entrepreneur's capacity to innovate, utilize technology, and manage knowledge to address dynamic changes. In an era of technological disruption and increasing global uncertainty, achieving entrepreneurial sustainability is crucial for both academia and business practice. Today's entrepreneurs are required not only to create economic value but also to maintain long-term competitiveness through innovation, adaptability, and effective knowledge management (1,2).

The emergence of digital innovation, characterized by the integration of technologies such as artificial intelligence (AI), big data analytics, cloud computing, and the Internet of Things (IoT), has transformed the way organizations create, deliver, and capture business value (3). This technology opens up new opportunities for companies to increase organizational agility, cross-sector collaboration, and sustainable development, especially for Micro, Small, and Medium Enterprises (MSMEs), which often face resource constraints (4,5).

Previous research stated that digital transformation is an important catalyst for organizations in redesigning their business strategies through business model innovation and strengthening organizational capabilities (3,6,7). Other research reveals that business success in the digital era depends heavily on the extent to which entrepreneurs are able to develop knowledge capabilities to create sustainable competitive advantages (4,8,9). Furthermore, the synergy between digital innovation and knowledge capabilities is the key to achieving business sustainability in the digital economy era (9–12).

With digital technology-based innovation, the value creation process is faster and more efficient (11,13), while knowledge capabilities play a vital role in facilitating organizational learning and adaptation to changes in the digital environment (2). In addition, the integration between digital innovation and knowledge management contributes significantly to improving the resilience, performance, and sustainability of small and medium enterprises (SMEs) (14,15). However, although empirical evidence suggests a strong relationship between these factors, the existing literature remains fragmented and does not provide a complete understanding of how digital innovation and knowledge capabilities together form the foundation for entrepreneurial sustainability.

Based on previous research, the sustainability of entrepreneurship is greatly influenced by the synergy between digital innovation and knowledge capabilities (2,16). Knowledge capabilities that include the ability to create, share, and utilize knowledge are the basis for organizational innovation and learning to capture digital opportunities in a dynamic market (17). In addition, other research confirms that the integration of digital innovation with knowledge management systems can improve organizational performance, business resilience, and encourage the creation of sustainable entrepreneurship (15,18). However, despite the growing body of research on this topic, the existing literature remains fragmented in explaining how digital innovation and knowledge capabilities jointly contribute to entrepreneurial sustainability in various industrial contexts.

Therefore, this study conducted a Systematic Literature Review (SLR) to synthesize and map previous research addressing the relationship between digital innovation, knowledge capabilities, and entrepreneurial sustainability. By analyzing scientific articles published between 2018 and 2025, this study aims to identify theoretical patterns, research gaps, and current trends in digital sustainability studies. The results of this systematic review are expected to produce a comprehensive conceptual framework explaining how entrepreneurs can leverage digital innovation and knowledge capabilities to maintain innovation-based competitive advantage and create long-term value in the digital era.

The objectives of this study are to 1) Map the development of concepts and theories that form the basis of the relationship between digital innovation and knowledge capabilities by referring to theoretical foundations such as Dynamic Capability View, Resource-Based View, and Knowledge-Based Theory, 2) analyze and synthesize empirical results from various previous studies to identify patterns, trends, and synergistic contributions between digital innovation and knowledge management to increasing competitiveness and sustainable innovation, 3) develop a conceptual framework that describes the relationship between these two factors as the main drivers of achieving entrepreneurial sustainability, so that it can be a reference for further research and a strategic guide for business actors in designing adaptive and sustainable business models in the digital era.

2. Literatur Review

2.1 Entrepreneurial Sustainability in the Digital Era

Entrepreneurial sustainability demands the creation of long-term value that balances economic performance, social impact, and the environment. In the context of the digital economy, this sustainability is increasingly determined by entrepreneurs' ability to integrate technology, organizational learning processes, and collaborative networks to respond to market dynamics (1,12,19). Further research confirms that sustainability is no longer simply a result of "green compliance," but is rooted in an organizational capability architecture that enables sensing opportunities, seizing technology-based solutions, and repeatedly transforming business models (17,20).

2.2 Digital Innovation as a Driver of Sustainable Entrepreneurship

Digital innovation encompasses the adoption of AI, big data, cloud, IoT, and platforms to transform how organizations create, deliver, and capture value (3). At the business model level, digital innovation accelerates value reconfiguration through process automation, service personalization, and ecosystem orchestration, which impacts resource efficiency and market inclusion (15,21). Empirical evidence shows that a mature digital strategy drives the degree of product/process digitalization and strengthens an organization's readiness to innovate continuously (22). In MSMEs, digital innovation often serves as a lever mechanism to address resource limitations, reduce transaction costs, and expand market reach with more measurable socio-environmental impacts (5,14).

2.3 Knowledge Capabilities and Learning Mechanisms

Knowledge capabilities encompass the processes of creating, storing, sharing, and utilizing knowledge, which underpin organizational learning and continuous innovation. The literature shows that effective knowledge management enhances knowledge absorption and integration, thereby improving the quality of data-driven decisions and the speed of innovation (12,16,23). In the digital context, digital knowledge—including data literacy and analytical skills is a critical component that connects technology with sustainable value practices (2). In other words, knowledge capabilities act as a “neural network” that translates digital opportunities into product/service and process innovations that are relevant to entrepreneurial sustainability.

2.4 Dynamic Capability View (DCV)

Dynamic Capability View (DCV) positions sensing–seizing–reconfiguring as the core mechanism for maintaining superiority in dynamic environments (17). Research conducted on MSMEs shows that dynamic capabilities are positively related to digital transformation, business resilience, and sustainable innovation, both directly and through strengthening IT readiness and strategic alignment (24). At the same time, digital capability is a combination of digital skills, infrastructure, data integration, and agility mediating the impact of digital organizational culture on innovation and excellence (4).

2.4 Business Model Innovation (BMI) as the Bridge to Sustainability

Business Model Innovation (BMI) serves as a bridge that translates digital capabilities and knowledge into new and sustainable value creation systems. Empirical evidence shows that DC enhances innovation capabilities, which in turn drives BMI; the effect is amplified in dynamic environmental contexts (6,25,26). Recent research confirms the role of digital capability as a mediator between openness to innovation and BMI, while also highlighting the existence of an optimal point of openness to avoid knowledge leakage (27,28). In practice, DT → (DC & digital capability) → BMI → sustainability forms a value chain that is consistently found in various industrial and country contexts, with the support of digital leadership and stakeholder involvement as reinforcements (3,14).

3. Methods

3.1 Research Design

This study uses a Systematic Literature Review (SLR) approach with the aim of systematically identifying, synthesizing, and analyzing the results of previous studies that discuss the relationship between digital innovation, knowledge capabilities, and entrepreneurial sustainability in the digital era. The SLR approach was chosen because it is comprehensive and able to provide a comprehensive overview of the development of concepts, theories, and research trends in the topic under study. This study follows the PRISMA 2020 guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which include four main stages: identification, screening, eligibility, and inclusion (29).

3.2 Data Collection

The data collection process was carried out through a search for scientific literature from several internationally reputable databases, namely Scopus, Web of Science, and ScienceDirect, with a publication period between 2018 and 2025. The search strategy used a combination of relevant keywords, namely "digital innovation", "knowledge capabilities", "entrepreneurial sustainability", and "SMEs", which were connected using logical operators (AND, OR) to expand the search results. The inclusion criteria used included: (1) scientific articles published in reputable journals Q1–Q4, (2) English-language articles, and (3) empirical and conceptual research relevant to the study topic. Meanwhile, the exclusion criteria included: (1) articles that were editorial in nature, non-systematic reviews, or policy reports, and (2) publications that had no direct relationship to the main research variables. After the search process, all articles found were selected using the PRISMA approach to obtain a final collection of literature for further analysis.

3.3 Data Analysis Technique

The data analysis techniques in this study were descriptive and thematic. Descriptive analysis was used to map publication characteristics, such as the distribution of articles by year, journal, research method, and geographic region, thus providing an overview of research trends on this topic. Meanwhile, thematic analysis was used to identify key themes emerging from the literature, including patterns of relationships between variables, dominant theories (e.g., Dynamic Capability View, Resource-Based View, and Knowledge-Based Theory), and directions for future research development. The analysis process was carried out through three main stages: (1) coding key concepts from each article, (2) clustering to group similar themes, and (3) synthesis to formulate a conceptual pattern linking digital innovation, knowledge capability, and entrepreneurial sustainability. The results of this process were then presented in the form of a conceptual framework that describes the mechanisms of relationships between variables and provides direction for further research in the field of sustainable digital entrepreneurship.

3.4 PRISM Flow Result

As part of the Systematic Literature Review (SLR) process, this study followed the literature selection process based on the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure that the article collection and selection process was carried out transparently, systematically, and measurably. The PRISMA process includes four main steps: identification, screening, eligibility, and inclusion, which describe the literature journey from the initial search stage to the determination of the final articles used in the analysis. The results of this PRISMA process provide a clear picture of the number of articles obtained, screened, excluded, and finally selected as the main material in compiling the systematic review, as follows:

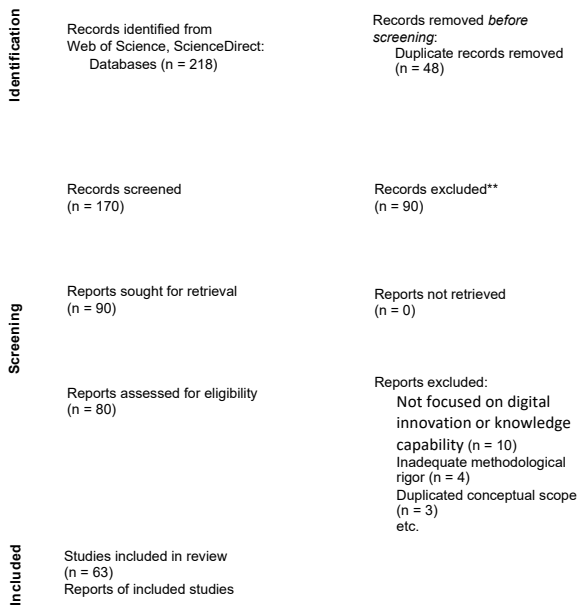


Figure 1. Output Flow Diagram Prisma, 2025

Based on the article selection process used in the identification stage, 218 articles were found through three main databases (Scopus, Web of Science, and ScienceDirect). After removing 48 duplicate articles, 170 articles were left to proceed to the screening stage. The screening stage was conducted by reading the titles and abstracts to ensure relevance to the research topic, resulting in 90 articles being eliminated because they did not align with the focus on digital innovation, knowledge capabilities, and entrepreneurial sustainability. Furthermore, in the eligibility stage, 80 articles were read in full and evaluated based on inclusion and exclusion criteria. Of these, 17 articles were excluded because they did not have adequate contextual or research method compatibility.

Finally, the inclusion stage yielded 63 primary articles that met all criteria and served as the basis for analysis and the development of a conceptual framework. This process ensured that the articles used were relevant, valid, and credible in supporting the research objectives of entrepreneurial sustainability through digital innovation and knowledge capabilities.

4. Result and Discussion

The results of the bibliometric analysis using VOSviewer 1.6.19 show a keyword co-occurrence map of the 63 articles used in this systematic review. The visualization map shows that research on entrepreneurial sustainability through digital innovation and knowledge capabilities is divided into five main clusters, each of which is interconnected in explaining the direction and trends of research in the digital era. These

clusters reflect the close relationship between digital transformation, business model innovation, dynamic capabilities, and organizational sustainability goals. The following is the output from VOSviewer:

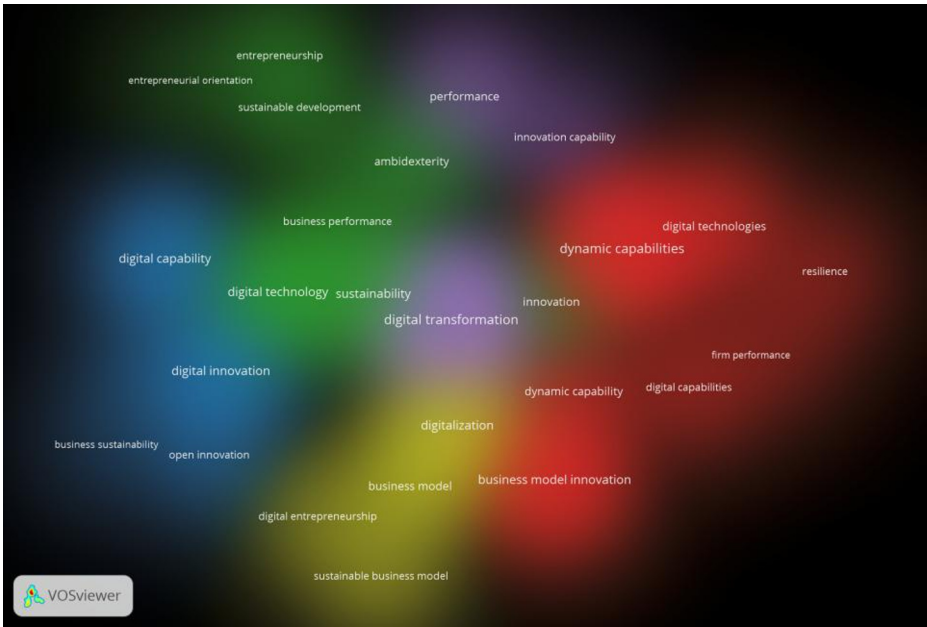


Figure 2. VOSviewers output

Cluster 1 (red) represents the Dynamic Capabilities theme, centered on the terms “dynamic capabilities,” “resilience,” and “firm performance.” This cluster demonstrates that the Dynamic Capability View (DCV) theory (17) serves as an important foundation in explaining how organizations develop sensing, seizing, and reconfiguring capabilities to adapt to digital change. The research findings confirm that dynamic capabilities act as a link between digital transformation and business sustainability performance. This reinforces the research objective of understanding how capabilities become a key mechanism in achieving entrepreneurial sustainability (5,23,30,31).

Cluster 2 (blue) focuses on the theme of Digital Innovation and “digital capability,” which describes the ability of digital technology and data-driven innovation to drive entrepreneurial transformation. This concept is rooted in the Resource-Based View and Knowledge-Based Theory, which emphasize that technology- and knowledge-based resources are strategic assets in creating sustainable competitive advantage (32). These findings suggest that digital capability not only improves business process efficiency but also serves as a catalyst for organizational innovation and learning (4,11,33,34).

Cluster 3 (yellow) highlights the theme of Business Model Innovation (BMI), which relates to “business models,” “digital entrepreneurship,” and “sustainable business

models." This cluster confirms BMI's role as a strategic bridge between digital innovation and achieving entrepreneurial sustainability. Previous research has shown that business model innovation is a critical element in transforming the value created, delivered, and captured by companies (3,27,28). In the context of the Dynamic Capability View theory, BMI emerges as a concrete form of the capabilities reconfiguring process, namely, how companies adapt digital resources to create more resilient and sustainable business models.

Cluster 4 (green) illustrates the relationship between "entrepreneurship," "sustainable development," and "business performance." This cluster emphasizes the sustainability dimension (triple bottom line), where digital transformation not only drives economic performance but also contributes to the social and environmental dimensions (14). This is in accordance with the research framework that positions entrepreneurial sustainability as the end result of the integration between digital innovation and knowledge capabilities.

Cluster 5 (purple) highlights the link between "ambidexterity," "innovation capability," and "performance." This finding suggests that the balance between innovation exploration and exploitation plays a critical role in strengthening an organization's ability to innovate sustainably (35–38). Ambidexterity is a dynamic element that enables companies to manage digital innovation and knowledge simultaneously, thus driving long-term sustainability.

Overall, the VOSviewer results confirm that entrepreneurial sustainability in the digital era is inseparable from the integration of digital innovation, knowledge capabilities, and dynamic capabilities, realized through business model innovation. The visual map shows that "digital transformation" is at the center of connectivity between clusters, indicating its role as a core construct in a sustainable entrepreneurial ecosystem. Thus, these results reinforce the research objective of developing a conceptual framework that explains how the combination of digital innovation and knowledge management can strengthen adaptive capabilities, encourage sustainable innovation, and ensure long-term competitiveness for businesses in the era of digital transformation.

4.1 Mapping the Development of Concepts and Theories

The development of research on the relationship between digital innovation and knowledge capabilities in the context of entrepreneurial sustainability shows a conceptual evolution over the past decade. Previous literature reviews show that the relationship between these two concepts is based on three main theoretical frameworks: the Dynamic Capability View (DCV), the Resource-Based View (RBV), and the Knowledge-Based Theory (KBT), which synergistically explain how organizations can leverage digital resources and knowledge to create sustainable competitive advantage.

Based on the Dynamic Capability View (DCV) perspective, organizations need to develop sensing, seizing, and reconfiguring capabilities to adapt to the dynamics of the digital environment (17). In addition, digital innovation is the main driver of the

formation of dynamic capabilities, where the organization's ability to identify digital opportunities and integrate them into business processes creates long-term resilience and competitiveness (4,11,39). In the context of MSMEs, digital innovation that aligns with the organization's adaptive capabilities encourages the formation of sustainable business models that are able to respond to market changes quickly and efficiently (15).

Furthermore, from the Resource-Based View (RBV) perspective developed by Barney (32), Digital assets and knowledge are considered strategic resources that are valuable, rare, inimitable, and non-substitutable. Previous research shows that organizations with superior digital resources, such as technology infrastructure, data analytics, and employee digital skills, are able to convert these assets into sustainable competitive advantages through technology-based product and service innovation (3,22,40). This is reinforced by previous research that the effective use of digital resources not only increases economic efficiency but also creates positive social and environmental impacts within the framework of sustainable entrepreneurship (18).

Meanwhile, Knowledge-Based Theory (KBT) extends the RBV by emphasizing that knowledge is the most important resource in organizations, especially when combined with digital innovation. Previous research has shown that knowledge capabilities, which encompass the ability to create, share, and utilize knowledge, act as a bridge between digital technology and sustainable value creation (9,12). In the era of digital transformation, knowledge management practices enable companies to increase their absorptive capacity, namely the ability to absorb and integrate external knowledge into relevant internal innovations (2).

The mapping reveals a shift in research focus from simply adopting technology to integrating digital capabilities and knowledge as the foundation for building sustainable business models. Digital innovation is now viewed not merely as an efficiency tool but as an organizational learning system that strengthens the knowledge ecosystem and creates a dynamic fit between technology, human resources, and sustainability strategies. Therefore, the results of this theoretical mapping emphasize that entrepreneurial sustainability in the digital era relies heavily on an organization's ability to adaptively orchestrate digital innovation and knowledge, in line with the research objective of developing a conceptual framework that explains the synergistic relationship between these two factors as the primary drivers of entrepreneurial sustainability.

4.2 Synthesis of Empirical Findings: Patterns, Trends, and Synergistic Contributions

A Systematic Literature Review (SLR) analysis reveals a consistent relationship pattern, a progressive research trend, and a synergistic contribution between digital innovation and knowledge capabilities in supporting entrepreneurial sustainability. Previous literature reviews indicate that these two variables are not independent but complement each other in creating adaptive competitiveness and sustainable innovation amidst the dynamics of global digital transformation.

Relationship Pattern: Digital Innovation–Knowledge Capabilities–Sustainability

The main pattern emerging from various studies describes a value chain that begins with digital transformation as a catalyst, strengthening digital capabilities and knowledge, then driving business model innovation (BMI) as a bridge to business performance and sustainability. Previous research has shown that digital technology integration improves organizational efficiency and adaptive capacity in the face of environmental uncertainty (4). Meanwhile, BMI serves as a transmission mechanism from digital capabilities towards sustainable value creation (15,41,42). In line with previous findings, the combination of technological capabilities and organizational knowledge has been shown to strengthen strategic agility and accelerate the sustainability-oriented innovation process (22).

Research Trends: The Shift from Technology to Knowledge Ecosystem Orchestration

Research developments indicate a shift in focus from digital technology adoption to knowledge-based ecosystem orchestration. Previous research has highlighted the importance of knowledge-driven digital innovation in creating an inclusive and collaborative entrepreneurial system (8,9,16). Another finding shows that knowledge capabilities are an important mediator between digital technology and sustainable innovation, because they enable organizations to absorb, process, and utilize new knowledge effectively (2). Other research indicates that current research trends not only highlight economic efficiency, but also link digital innovation with the triple bottom line goals of economic, social, and environmental value (12,43,44). This trend marks the emergence of a new paradigm that sees sustainability as the result of an adaptive interaction between innovation, knowledge, and digital collaboration.

Synergistic Contribution: Interplay between Digital Innovation and Knowledge Capabilities

The synergistic contribution between digital innovation and knowledge capabilities is evident in their ability to create mechanisms for organizational learning and continuous innovation. Previous research has shown that knowledge sharing accelerates the diffusion of innovation and strengthens an organization's absorptive capacity to utilize digital technology (45). In line with these results, digital capability plays a role in increasing the company's ability to integrate digital information into the strategic decision-making process (5,46). Companies that leverage digital data effectively and manage knowledge systematically are able to transform faster and be more innovative than competitors that don't (3).

Conceptually, the relationship between these two factors is complementary and mutually reinforcing: digital innovation provides the tools, data, and infrastructure to create new value, while knowledge capabilities ensure that this information is transformed into strategic insights that drive learning and sustainability. The collaboration between technology and knowledge forms a continuous loop—where

digital innovation enriches knowledge, and accumulated knowledge generates innovations. These findings emphasize that entrepreneurial sustainability is not simply a result of technology adoption, but rather the entrepreneur's ability to build adaptive, knowledge-based digital learning systems. Thus, this discussion reinforces the research objective of analyzing and synthesizing patterns, trends, and synergistic contributions between digital innovation and knowledge capabilities, which together play a crucial role in shaping sustainable business strategies and adaptive entrepreneurial models in the digital era.

4.3 Conceptual Framework Development

The synthesis of previous literature studies indicates that the development of the conceptual framework in this study stems from the close relationship between digital innovation and knowledge capabilities as key drivers of entrepreneurial sustainability in the digital era. Several previous studies have shown that these two elements do not operate separately but rather reinforce each other in shaping organizational adaptive capabilities, business model innovation, and sustainable value creation.

Previous research confirms that digital transformation is a catalytic factor that strengthens an organization's ability to adopt new technologies and change its business model to be more efficient and competitive (4). In addition, Dynamic Capabilities, which include sensing, seizing, and reconfiguring capabilities, are an important mechanism that connects digital innovation with organizational performance (23,31). These findings reinforce the fact that integrating digital innovation with dynamic capabilities can improve the resilience and sustainability performance of SMEs through business model innovation that is responsive to changes in the digital environment (15,47).

From the knowledge capability side, it shows that the organization's ability to manage and integrate knowledge, both from internal and external sources, plays an important role in creating sustainable innovation (12,44,48). Knowledge capabilities not only support organizational learning processes but also strengthen adaptability and creativity in facing digital challenges. Meanwhile, absorptive capacity—the ability to absorb, assimilate, and apply new knowledge serves as a link between digital innovation and sustainable value creation (2).

These studies consistently emphasize the importance of synergy between digital innovation and knowledge capabilities in strengthening entrepreneurial competitiveness. In theory, this relationship is reinforced by three main approaches: the Resource-Based View, which emphasizes the strategic value of digital resources and knowledge; the Knowledge-Based Theory, which views knowledge as a core resource for building competitive advantage; and the Dynamic Capability View, which explains how organizations can adapt to environmental changes through innovation and continuous learning.

Based on the synthesis results, the conceptual framework developed in this study positions digital innovation and knowledge capabilities as key factors strengthening dynamic capabilities and digital capabilities. Both capabilities play a role in driving business model innovation oriented toward sustainable value creation, encompassing economic, social, and environmental value. Thus, digital innovation provides the infrastructure and tools for transformation, while knowledge capabilities serve as a mechanism for managing and translating information into relevant innovations. The combination of the two forms the foundation for achieving this, if the integration of technology and knowledge is key to organizational success in maintaining competitive advantage in the digital economy era. The following is a picture of the Conceptual Framework from the analysis results:

Conceptual Framework: Entrepreneurial Sustainability through Digital Innovation and Knowledge Capabilities



Figure 3. Conceptual Framework from the analysis results
Source: synthesized from (2,4,14,15)

5. Conclusion and Suggestions

The findings of this systematic literature review highlight that entrepreneurial sustainability in the digital era is inseparable from the synergistic relationship between digital innovation and knowledge capabilities. Drawing upon the theoretical underpinnings of the Dynamic Capability View (DCV), Resource-Based View (RBV), and Knowledge-Based Theory (KBT), this study concludes that these two capabilities serve as strategic pillars that enable entrepreneurs, especially MSMEs, to adapt, transform, and sustain their competitiveness amid rapid technological change. Digital innovation allows firms to remain agile and responsive to market shifts, while knowledge capability strengthens their ability to learn, absorb, and utilize information

to create new value. When these dimensions are aligned, they collectively drive sustainable business performance and long-term resilience.

The bibliometric analysis revealed a growing scholarly interest in sustainability-oriented digital transformation, particularly between 2018 and 2025, reflecting how innovation and knowledge integration have become central to achieving entrepreneurial sustainability. Studies across contexts show that organizations capable of combining technological adaptation with knowledge sharing are more likely to innovate continuously, engage in collaborative networks, and build sustainable ecosystems. This implies that sustainability today extends beyond economic success—it requires intellectual readiness, adaptive learning, and an innovation-driven culture that supports environmental and social responsibility.

In light of these insights, several strategic recommendations can be made. For academics and researchers, future work should deepen empirical investigations by adopting longitudinal and mixed-method approaches to explore how digital innovation and knowledge capabilities evolve over time and across different entrepreneurial ecosystems. For practitioners and MSMEs, developing digital literacy, fostering a knowledge-sharing culture, and embedding innovation into everyday business processes are essential steps to ensure competitiveness in an increasingly digitized market. Meanwhile, policymakers should prioritize inclusive programs that provide infrastructure, incentives, and training to accelerate digital adoption and knowledge diffusion, especially for small and medium enterprises in developing regions.

Ultimately, this study offers a conceptual foundation that integrates digital innovation and knowledge capability as key enablers of entrepreneurial sustainability. Strengthening these two dimensions will not only enhance firms' adaptive capacity but also promote more inclusive and resilient economic growth. Future research should further refine this conceptual framework into measurable models to guide both academic inquiry and practical implementation, ensuring that entrepreneurship in the digital era contributes meaningfully to sustainable development goals.

Disclosure of Interests. The authors declare that there is no conflict of interest regarding the publication of this article. The research was conducted independently, and no financial, commercial, or personal relationships were involved that could be construed as a potential conflict of interest. All authors have read and approved the final version of the manuscript and agree to be accountable for the accuracy and integrity of the work.

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