



Pathways to Sustainable Competitive Advantage for SMEs: A Bibliometric Analysis

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ABSTRACT

This conceptual paper develops a framework for building sustainable competitive advantage (SCA) in SMEs through intangible resources. Drawing on the Resource-Based Theory, the Resource Advantage Theory of Competition, the Dynamic Capabilities middle-range theory, and the Technology-Organization-Environment (TOE) framework, this study identifies three key exogenous variables: Dynamic Capabilities, Entrepreneurial Orientation, and Organizational Agility. Dynamic Capabilities refer to an organization's adaptability and reconfiguration of competencies in response to environmental changes. Entrepreneurial Orientation encompasses innovation, proactiveness, and risk-taking, supporting market opportunity exploitation and competitive edge. Organizational Agility denotes an organization's flexibility and speed in addressing market demands. Together, these variables build a solid foundation for SCA. Digital Transformation and Innovation Capabilities serve as essential mediators to maximize their impact. Digital Transformation enhances operational efficiency, customer interaction, and new business avenues, while Innovation Capabilities enable the development of market-relevant products and services. AA's systematic review methodology followed the PRISMA guidelines in developing this framework. Articles were identified from high-quality databases, including Scopus and ScienceDirect, using specific keywords such as Sustainable Competitive Advantage, SMEs, Dynamic Capabilities, Entrepreneurial Orientation, Organizational Agility, Digital Transformation, and Innovation Capabilities. The inclusion criteria focused on peer-reviewed articles published between 2010–2024, directly addressing the constructs of interest. After screening 1,500 articles for relevance and methodological rigor, 162 were included to inform this conceptual paper. The findings provide strategic insights for SMEs to achieve sustainable competitive advantage through technological adaptation and innovation.

Keywords: *Sustainable Competitive Advantage (SCA), Dynamic Capabilities, Entrepreneurial Orientation, Organization Agility, Digital Transformation, Innovation Capabilities, Technology-Organization-Environment (TOE).*

1. INTRODUCTION

Small and Medium Enterprises (SMEs) are crucial contributors to economic growth and development, often driving innovation, employment, and economic resilience [1], [2], [3]. The eighth goal of the Sustainable Development Goals (SDGs) emphasizes fostering sustained, inclusive, and sustainable economic growth, ensuring full and productive employment, and providing decent work opportunities for everyone [4], [5], [6], [7]. This goal highlights the critical contribution of micro, small, and medium-sized enterprises (MSMEs) to fostering economic growth and generating employment, especially in developing economies. It recognizes the significant contribution of MSMEs to GDP and job creation, particularly in emerging economies, while also addressing the challenges they face, such as limited access to finance and informal employment conditions [1], [8]. These obstacles highlight the need for supportive policies to strengthen their capacity to foster decent work and entrepreneurship [8], [9], [10], [11], [12], [13]. It also acknowledges the obstacles they encounter, including restricted access to financing and the necessity for supportive policies that promote decent work and entrepreneurship. MSMEs contribute significantly to GDP and job creation, particularly in emerging economies, but they often face challenges such as limited access to finance and informal employment conditions, necessitating supportive policies to enhance their capacity to promote decent work and entrepreneurship. However, in an increasingly competitive and dynamic global market, achieving and sustaining competitive advantage has become challenging for these enterprises [1], [14], [15], [16]. To address this, SMEs must focus on developing a sustainable competitive advantage (SCA) [17], [18] by leveraging intangible resources [19], [20], [21] that foster adaptability [22], resilience [23], [24], [25], [26], [27], and innovation [2], [28], [29], [30], [31].

Despite the extensive research on SMEs and their critical role in economic development, gaps remain in understanding how SMEs can achieve sustainability through strategic frameworks that map existing research and

integrate dynamic capabilities, entrepreneurial orientation, organizational agility, digital transformation, and innovation capabilities. While empirical studies have explored individual components such as agility or innovation in SMEs, no comprehensive conceptual paper synthesizes these elements into a unified framework addressing SME sustainability. Moreover, prior research often lacks a focus on how SMEs can strategically leverage intangible resources to overcome the dynamic challenges of global competition. This conceptual paper addresses these gaps by providing a theoretically grounded framework for achieving SCA in SMEs, offering a valuable entry point for further empirical investigation.

This conceptual paper explores a framework for SMEs to build SCA through five core factors: Dynamic Capabilities[10], [28], [32], [33], [34], [35], [36], [37], [38], [39], Entrepreneurial Orientation[40], [41], [42], [43], [44], [45], [46], [47], [48], [49], Organizational Agility[29], [50], [51], [52], [53], [54], Digital Transformation[55], [56], [57], [58], [59], [60], [61], [62], [63], [64], [65], [66], [67], [68], [69], and Innovation Capabilities[28], [34], [38], [70], [71], [72], [73], [74], [75], [76]. These components serve as fundamental drivers in adapting to rapidly changing market conditions. Dynamic Capabilities enable SMEs to reconfigure and align resources as they respond to environmental shifts[28], [32]. Entrepreneurial Orientation supports proactive market positioning by promoting innovation, risk-taking, and opportunity exploitation[40], [42]. Organizational Agility allows SMEs to respond swiftly to market demands [29], [54], while Digital Transformation [55], [77]and Innovation Capabilities [34], [70] serve as critical mediators that optimize operational efficiency and create market-relevant products.

Together, these variables present a strategic approach for SMEs to not only compete effectively but also to thrive sustainably [78], [79], [80], [81], [82]. This paper aims to provide a comprehensive conceptual framework that SMEs can use to strengthen their marketplace position through strategic resource development.

Achieving a Sustainable Competitive Advantage (SCA) involves creating a unique position that competitors find difficult to replicate, enabling long-term success and resilience in the market [83], [84]. For SMEs, SCA is particularly critical, as it supports stability, growth[9], [85], and adaptability in a competitive landscape[18], [22]. This conceptual paper focuses on five key determinants of SCA: Dynamic Capabilities, Entrepreneurial Orientation, Organizational Agility, Digital Transformation, and Innovation Capabilities. Each variable significantly shapes the strategic foundation necessary for SMEs to establish and maintain their competitive edge.

The concept of SCA is rooted in Resource-Based Theory, which posits that a firm's resources must be valuable, rare, inimitable, and non-substitutable (VRIN) to provide a competitive edge[83], [86], [87], [88], [89]. However, as markets evolve rapidly, the framework expands to include the VRIO dimensions—specifically, the importance of organizational resources being dynamic and adaptable[90], [91]. In today's fast-paced environment, where technological advancements and consumer preferences shift rapidly, SMEs must focus on intangible resources that enhance their ability to innovate and respond swiftly to change[20], [21]. This paper emphasizes the critical need for SMEs to cultivate dynamic capabilities, agility, and innovative mindsets to navigate the complexities of digital marketing and leverage emerging technologies. By doing so, SMEs can effectively position themselves to meet market demands and ensure their SCA amidst constant change.

Dynamic Capabilities, defined as the firm's ability to integrate, reconfigure, and adapt both internal and external resources in response to environmental changes, dynamic capabilities are essential for SMEs to remain agile [28], [32], [36]. This capability includes sensing market shifts, seizing new opportunities, and reconfiguring resources, allowing SMEs to respond swiftly and strategically to emerging demands[10], [34], [36].

Entrepreneurial Orientation reflects a firm's commitment to innovation, proactiveness, and risk-taking[40], [41], [43]. For SMEs, this orientation supports the exploration of new markets, development of innovative products, and creation of value-driven solutions[45], [46]. By fostering a proactive mindset, SMEs are better equipped to exploit market opportunities, positioning themselves competitively[47], [48], [49].

Organizational Agility denotes an SME's flexibility and speed in responding to customer needs, technological advances, and competitive pressures[50], [51]. An agile organization can quickly pivot its resources and processes to adapt to evolving market conditions[29], [52]. For SMEs, agility is crucial for enhancing responsiveness, increasing operational efficiency, and achieving customer satisfaction[53], [54].

Digital Transformation in the modern business landscape enables SMEs to harness digital technologies to improve operational efficiency, enhance customer engagement, and explore new business opportunities[55], [56], [57]. As a mediator in the SCA framework, digital transformation is instrumental in driving innovation and sustaining growth, particularly by integrating technology into core business processes[58], [59], [60], [61], [63].

Innovation Capabilities are the firm's capacity to develop new products, services, or processes that meet market demands[38], [74]. For SMEs, innovation is a key differentiator, allowing them to address customer needs uniquely and deliver enhanced value[75], [92], [93]. This capability enables firms to remain competitive by continuously improving and adapting their offerings[17], [94].

By leveraging these five determinants, SMEs can build a robust foundation for SCA, positioning themselves to survive and thrive in competitive markets. This framework provides SMEs with strategic insights to harness their resources effectively, enabling them to strengthen their market position through agility, innovation, and digital integration.

2. LITERATURE REVIEW

2.1. Resource-Based Theory

Resource-based theory (RBT) posits that a firm's resources are critical to achieving competitive advantage. According to Barney (1991), resources must possess four attributes—value, rarity, inimitability, and non-substitutability (VRIN)—to contribute to sustained competitive advantage [86], [95], [96]. RBT emphasizes the importance of leveraging unique resources, particularly intangible assets such as brand reputation, intellectual property, and organizational culture, which are often more difficult for competitors to replicate [87], [88], [89]. Furthermore, as market conditions evolve, the focus shifts from static resource attributes to dynamic capabilities, which enable organizations to adapt and reconfigure resources in response to changing environments [88], [89].

2.2 Resource Advantage Theory

Resource Advantage Theory builds upon RBT by emphasizing the competitive implications of resource differences among firms. Hunt and Morgan (1995) argue that firms can achieve superior performance through the strategic management of resources [83], [90]. This theory highlights the importance of understanding how resources can be leveraged to create customer value and enhance competitive positioning [20], [97]. The dynamic aspect of resources is critical, as organizations must continuously innovate and adapt to sustain their advantage in rapidly changing markets. [90], [98], [99], [100].

2.3 Dynamic Capabilities

Dynamic Capabilities, a prominent middle-range theory, was first conceptualized by Teece, Pisano, and Shuen (1997) to bridge the gap between broad theories of organizational behavior and specific operational models [28], [32], [101]. Middle-range theories, by definition, offer focused frameworks that are neither too broad nor too narrow, allowing them to address complex phenomena more flexibly and practically. Dynamic Capabilities Theory falls within this range, providing a versatile lens through which organizations can view their ability to adapt, innovate, and sustain a competitive edge in fluctuating markets.

Dynamic Capabilities describe an organization's ability to deliberately develop, enhance, or adjust its resource base in response to evolving environmental conditions. Teece et al. identified three key components [10], [101]:

1. Sensing: The ability to identify and assess opportunities and threats in the environment. For SMEs, this includes actively scanning the market for new trends, customer preferences, and emerging technologies, which can shape future strategy and innovation efforts.

2. Seizing: The ability to mobilize resources to capture identified opportunities. This may involve strategic decision-making, reallocating resources, or realigning structures to exploit new market possibilities. In practice, SMEs might leverage their limited resources more effectively by prioritizing initiatives that yield the greatest potential for growth and differentiation.

3. Transforming: The capacity to reconfigure assets and organizational structures to ensure alignment with new strategic directions. Transformation is crucial for long-term adaptation, enabling organizations to reorganize and optimize internal processes to stay competitive. This may involve adopting new digital platforms, restructuring workflows, or enhancing employee skills to support evolving operational needs.

2.3.1. Relevance for SMEs in Achieving SCA

For SMEs, Dynamic Capabilities are particularly valuable in navigating rapidly changing environments where flexibility, speed, and adaptability are key [72], [102]. As smaller firms often operate with limited resources, their competitive advantage lies in agility and the ability to adapt faster than larger firms [18], [28], [38]. Dynamic Capabilities empower SMEs to do this effectively by facilitating strategic adjustments that align with external demands, enhancing their ability to sustain competitive advantage over time [36].

Dynamic Capabilities also play a pivotal role in digital transformation, enabling SMEs to integrate technology into their operations and capitalize on digital innovations [103]. By leveraging sensing, seizing, and transforming capabilities, SMEs can better understand and apply digital tools, thus improving customer engagement, operational efficiency, and market responsiveness [28], [32]. Dynamic Capabilities serve as a critical middle-range theory that provides SMEs with a practical approach to achieving Sustainable Competitive Advantage. This theory equips SMEs with the strategic flexibility to continuously adapt, ensuring resilience and growth in an ever-evolving market landscape [10], [34], [35], [36], [102].

2.3.2 *Dynamic Capabilities*

Dynamic Capabilities refer to a company's capacity to combine, develop, and adapt its internal and external competencies to respond effectively to fast-changing environments [101]. These capabilities are crucial for SMEs in today's rapidly changing business environment. Companies with robust dynamic capabilities can quickly identify market shifts, capitalize on emerging opportunities, and adjust their resource base to maintain a competitive edge. Studies have shown that organizations with robust dynamic capabilities are better positioned to innovate and adapt, leading to improved performance [28], [38], [102], [104].

2.3.3. *Entrepreneurial Orientation*

Entrepreneurial Orientation (EO) encompasses the processes, practices, and decision-making styles that lead to the discovery and exploitation of new opportunities[40], [41], [42]. EO includes three key dimensions: innovation (the pursuit of novel ideas), proactiveness (anticipating and acting on future needs), and risk-taking (willingness to commit resources to uncertain outcomes)[19], [38], [105], [106]. Research indicates that a strong EO positively influences firm performance and competitive advantage by enabling SMEs to respond effectively to market opportunities and challenges[43], [44], [45]. By fostering an entrepreneurial mindset, SMEs can enhance their adaptability and innovation capabilities, essential for achieving SCA[47], [48], [49], [107].

2.3.4. *Organizational Agility*

Organizational Agility refers to an organization's ability to rapidly adapt and respond to market changes and customer demands[50], [51]. Agility is characterized by flexibility, speed, and the capacity to manage change effectively. For SMEs, agility is particularly important in a fast-paced environment, allowing them to pivot strategies and resources as needed[29], [52]. Studies have shown that organizations with high agility can better meet customer needs, improve operational efficiency, and sustain competitive advantage[53], [54]. By cultivating agility, SMEs can enhance their responsiveness and resilience in the face of uncertainty.

2.4. *Technology-Organization-Environment (TOE) Framework*

The Technology-Organization-Environment (TOE) framework, introduced by Tornatzky and Fleischer, offers an extensive model for analyzing the factors that impact the adoption of technological innovations within organizations [108], [109]. The framework categorizes these factors into three main contexts: technological, organizational, and environmental [110].

Technological Context: This dimension encompasses the technologies available to the organization, including their characteristics and the organization's existing technological capabilities. The technological context influences an organization's capacity to adopt new technologies effectively. For SMEs, understanding the technological landscape is crucial, as it affects their ability to innovate and leverage digital tools for operational efficiency and competitive advantage. Studies have shown that SMEs with advanced technological resources are more likely to engage in successful digital transformation and innovation initiatives [104].

Organizational Context: The organizational context refers to the characteristics of the firm itself, including its size, structure, culture, and resources. For SMEs, factors such as leadership support, employee skills, and organizational culture play a significant role in determining their readiness to adopt new technologies[108], [109], [111]. A supportive organizational culture that encourages innovation and flexibility can enhance an SME's ability to respond to market changes and leverage digital transformation for sustainable competitive advantage[112], [113], [114].

Environmental Context: The environmental context includes the external factors that affect an organization, such as market trends, competitive pressures, regulatory frameworks, and technological advancements[115], [116]. For SMEs, understanding the external environment is vital for identifying opportunities and threats. Organizations operating in dynamic environments must continuously adapt their strategies to maintain their competitive edge[117]. Research indicates that SMEs that effectively scan and respond to their external environment are better positioned to innovate and achieve sustainable growth.

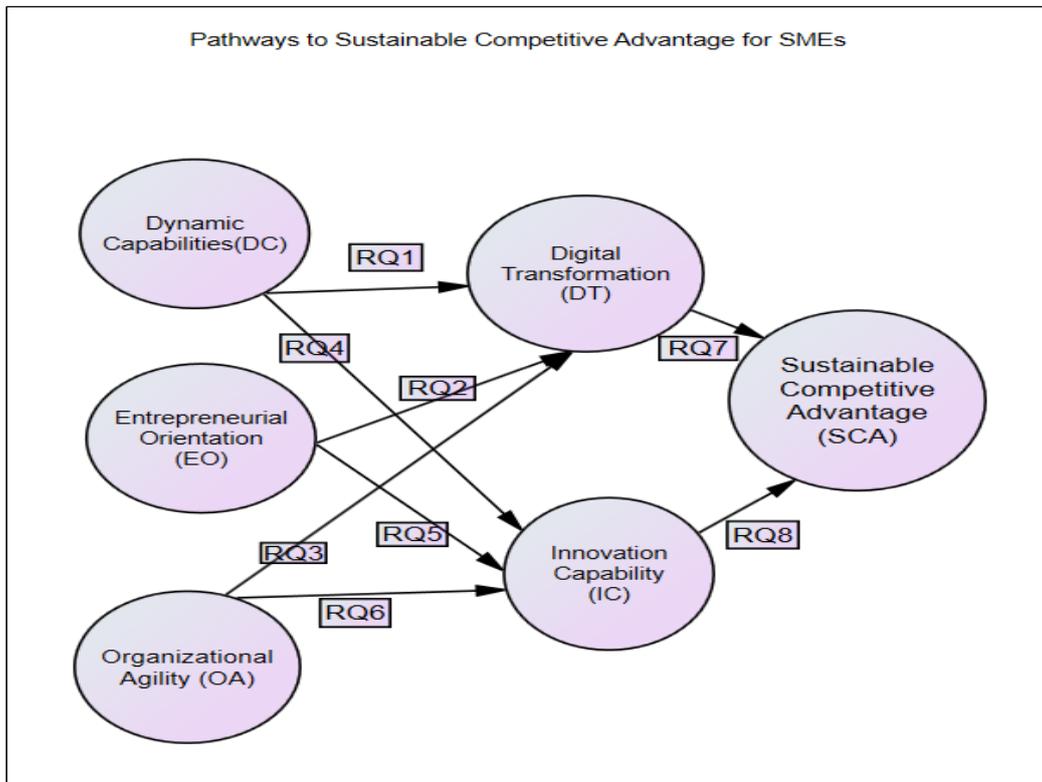


Figure 1. illustrates the proposed relationships between variables in this conceptual model.

The TOE framework emphasizes the interplay between technology, organizational characteristics, and environmental factors in shaping the innovation adoption process [118]. By utilizing this framework, SMEs can identify the key drivers and barriers to digital transformation, thereby facilitating the development of strategies that enhance their innovation capabilities and overall competitive advantage.

2.4.1. Digital Transformation

Digital Transformation involves integrating digital technologies into all aspects of an organization, fundamentally changing how businesses operate and deliver value to customers [59], [117]. It enhances operational efficiency, improves customer engagement, and creates new business models [61], [62]. Research indicates that SMEs embracing digital transformation are better equipped to adapt to market shifts and leverage technological advancements for innovation [119]. By fostering a culture of digital innovation, SMEs can enhance their competitive positioning and responsiveness in an increasingly digital marketplace [104].

2.4.2. Innovation Capabilities

Innovation Capabilities refer to an organization's ability to develop new products, services, and processes that meet evolving customer needs [70], [71]. These capabilities are crucial for SMEs seeking to differentiate themselves in competitive markets [74], [75]. Research has shown that firms with strong innovation capabilities can achieve higher levels of performance and sustainability [75], [94], [120]. By fostering a culture of innovation, SMEs can enhance their responsiveness to market demands and create value through unique offerings.

3. RESEARCH QUESTION

Dynamic Capabilities refer to an organization's ability to proactively adapt, integrate, and reconfigure resources and competencies in response to environmental changes. In the context of Digital Transformation, Dynamic Capabilities enable firms to recognize technological potential, allocate resources swiftly, and re-engineer internal processes to support digitalization [103], [121], [122]. This raises the research question **RQ1: How do Dynamic Capabilities influence Digital Transformation in SMEs?**

Entrepreneurial Orientation (EO), encompassing innovativeness, proactivity, and risk-taking, drives firms to adopt and leverage digital technology as a strategic advantage. A strong EO empowers firms to implement new technologies with confidence and exploit digital opportunities to enhance products, services, and customer interactions, thereby accelerating digital transformation [47], [48], [107]. Therefore, the research question is **RQ2: How does Entrepreneurial Orientation impact Digital Transformation in SMEs?**

Organizational Agility, the ability to respond to changes swiftly and effectively, allows firms to adapt to new technological demands and integrate them into operations with flexibility [51], [123], [124]. The higher the firm's agility, the more capable it is of effectively utilizing digital technology, suggesting that Organizational Agility significantly contributes to Digital Transformation [29], [53], [123], [125], [126]. This prompts the research question **RQ3: How does Organizational Agility contribute to Digital Transformation in SMEs?**

Dynamic Capabilities enhance Innovation Capabilities by equipping firms with the ability to identify and respond to emerging opportunities and innovate in the face of environmental changes [34]. Through sensing, seizing, and transforming capabilities, Dynamic Capabilities enable firms to create new products, services, or processes, empowering continuous innovation [35], [38], [127]. Thus, the research question is **RQ4: How do Dynamic Capabilities influence Innovation Capabilities in SMEs?**

Entrepreneurial Orientation, including attributes like innovativeness and proactiveness, significantly fosters Innovation Capabilities by driving firms to explore and develop novel ideas and embrace risks in generating innovative solutions [42], [128], [129]. This leads to the research question **RQ5: How does Entrepreneurial Orientation shape Innovation Capabilities in SMEs?**

Organizational Agility, enabling rapid response to environmental changes, creates a conducive environment for developing Innovation Capabilities. Agility accelerates the organization's ability to test and implement innovations efficiently, strengthening the firm's capacity for continuous innovation [29], [51], [125], [130]. Therefore, the research question is **RQ6: How does Organizational Agility affect Innovation Capabilities in SMEs?**

Digital Transformation contributes to a Sustainable Competitive Advantage by enhancing operational efficiency, extending market reach, and improving customer service through the use of digital technology [131], [132], [133], [134], [135], [136], [137]. This transformation enables firms to be more adaptive and responsive to market changes, reinforcing a competitive advantage [59], [64], [69], [77], [121], [138], [139], [140], [141], [142], [143], [144], [145], [146]. Hence, the research question is **RQ7: How does Digital Transformation drive Sustainable Competitive Advantage for SMEs?**

Innovation Capabilities, the capacity of an organization to develop new products, services, or processes that outperform competitors, contribute significantly to a Sustainable Competitive Advantage by creating unique value that is challenging for competitors to replicate [17], [38], [70], [73], [93], [120]. This leads to the research question **RQ8: How do Innovation Capabilities influence Sustainable Competitive Advantage in SMEs?**

This comprehensive set of research questions aligns with the proposed model (**Figure 1.**), emphasizing how critical constructs—Dynamic Capabilities, Entrepreneurial Orientation, and Organizational Agility—facilitate Digital Transformation and Innovation Capabilities, which collectively drive Sustainable Competitive Advantage for SMEs.

3. METHODS

We conducted a systematic literature review using a two-step approach to develop this conceptual model. First, we performed a keyword search using "SCA in SMEs" in Scopus, resulting in 1,500 articles published between 2010 and 2024. These articles were analyzed using VoS Viewer, which helped identify key themes and frequently occurring keywords. The analysis revealed five dominant variables—Dynamic Capabilities, Entrepreneurial Orientation, Organizational Agility, Digital Transformation, and Innovation Capabilities—as significant determinants of SMEs' Sustainable Competitive Advantage (SCA).

Building on these findings, we applied the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to screen and select relevant studies from the dataset systematically. This process ensured that only the most relevant and high-quality studies were included in our review, forming the foundation for the proposed conceptual model.

This conceptual paper adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method [147] to ensure a rigorous and transparent review of existing literature related to sustainable competitive advantage (SCA) in SMEs (**Figure 2.**). The PRISMA framework was employed to systematically identify, select, and analyze relevant studies to construct the conceptual framework [148].

3.1. Identification

A systematic search was conducted across reputable databases to identify studies examining sustainable competitive advantage (SCA) in small and medium-sized enterprises (SMEs) through dynamic capabilities, entrepreneurial

orientation, organizational agility, digital transformation, and innovation capabilities. Databases such as Scopus and ScienceDirect were utilized, ensuring access to high-quality, peer-reviewed literature. Keywords including “sustainable competitive advantage,” “SMEs,” “dynamic capabilities,” “entrepreneurial orientation,” “organizational agility,” “digital transformation,” and “innovation capabilities” were strategically combined using Boolean operators (AND, OR) to refine the search. Inclusion criteria were limited to peer-reviewed journal articles published in English between 2010 and 2024. This comprehensive search strategy yielded 1,500 records.

Records underwent an initial screening for duplicates and other irrelevant entries following retrieval. Three hundred duplicate records were removed, and 280 were excluded for irrelevance to the research scope or improper indexing. This step reduced the dataset to 1,200 unique records eligible for further review.

3.2. Screening

The 1,200 remaining records were screened based on their titles and abstracts to evaluate their relevance to the study's objectives. Studies that did not directly focus on SMEs or lacked clear connections to the core constructs of interest—dynamic capabilities, entrepreneurial orientation, organizational agility, digital transformation, and innovation capabilities—were excluded. As a result, 800 records were deemed irrelevant, leaving 400 articles for full-text review.

3.3. Eligibility

The full texts of the 400 articles were meticulously reviewed to determine their eligibility for inclusion based on predefined criteria. Eligible studies were required to focus on SMEs explicitly, address at least one of the key constructs under investigation, and provide either empirical evidence or theoretical discussions relevant to sustainable competitive advantage (SCA) or related business sustainability outcomes. Studies that solely concentrated on large enterprises (95 articles) or lacked robust theoretical grounding or empirical rigor (163 articles) were excluded from the review. Following this rigorous screening process, 142 studies were deemed suitable for synthesis.

3.4. Inclusion

A final set of 142 studies was included in the systematic review of the eligible articles. These articles were selected based on their theoretical contributions, methodological rigor, and relevance to the study's objectives. Additionally, 20 supplementary reports linked to these articles were included, ensuring a comprehensive analysis. This body of literature was analyzed and synthesized to develop a conceptual framework illustrating how dynamic capabilities, entrepreneurial orientation, and organizational agility drive digital transformation and innovation capabilities, ultimately influencing SCA in SMEs.

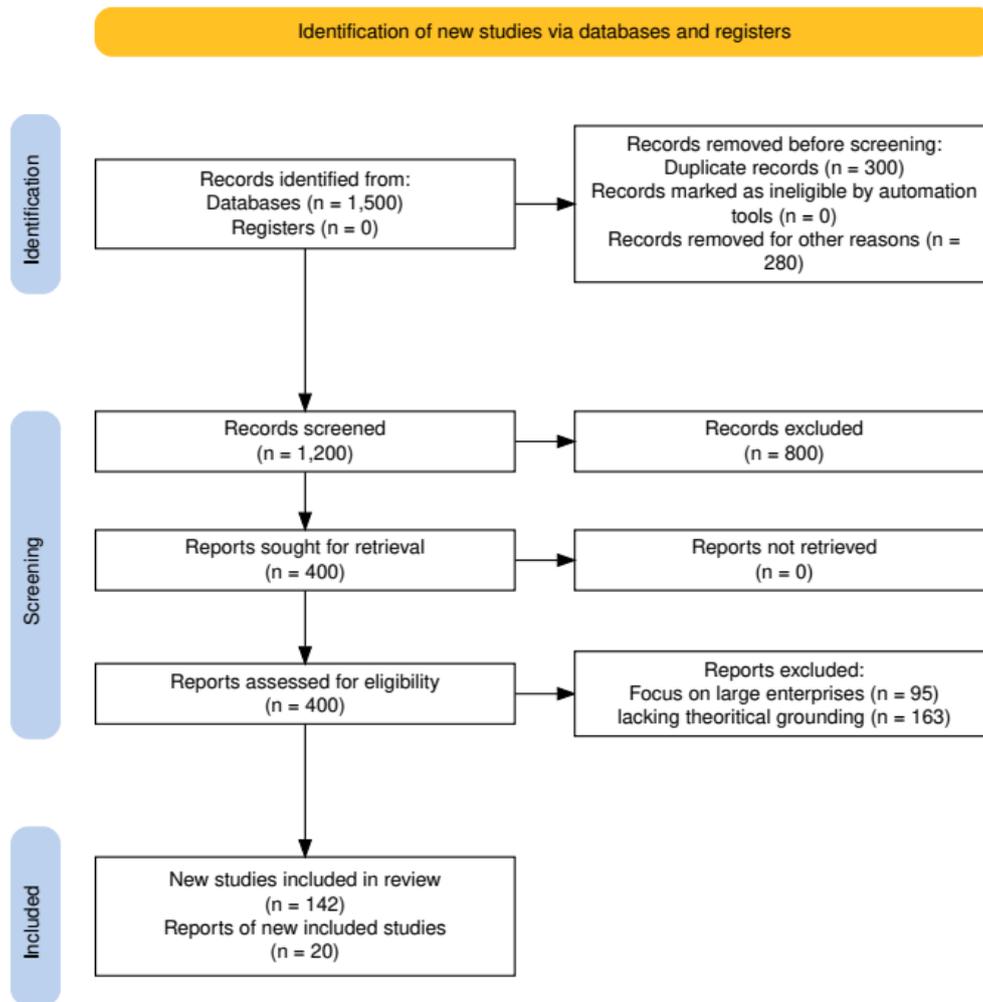


Figure 1. PRISMA Flow Diagram: Article Selection Process for Developing the Conceptual Framework

4. Results of the PRISMA Method

The systematic review, conducted using the PRISMA framework, provided a comprehensive understanding of the interplay between the identified constructs and their role in building Sustainable Competitive Advantage (SCA) for SMEs. The methodical identification, screening, and inclusion process ensured that the proposed conceptual framework was grounded in robust, diverse, high-quality literature. This process addressed critical gaps in the existing research and offered a holistic perspective on the sustainability of SMEs.

The systematic review revealed substantial theoretical and empirical evidence from prior studies that support the proposed conceptual framework. Key insights from the reviewed literature are summarized below to illustrate how the identified constructs—dynamic Capabilities, Organizational Agility, Entrepreneurial Orientation, Digital Transformation, and Innovation Capabilities—are interconnected and aligned with established theories.

1. Dynamic Capabilities, Digital Transformation, and Innovation Capabilities

Studies highlight the role of Dynamic Capabilities in enabling organizations to adapt and reconfigure their resources to leverage digital technologies and innovation effectively [66], [101], [103], [104], [121], [122]. These capabilities support SMEs in recognizing technological opportunities and transforming their processes to remain competitive in dynamic markets.

2. Entrepreneurial Orientation, Digital Transformation, and Innovation Capabilities

Empirical research underscores that SMEs with high levels of Entrepreneurial Orientation—characterized by innovativeness, proactiveness, and risk-taking—are more likely to develop robust digital transformation and Innovation Capabilities [38], [42], [105], [106], [128], [129], [130], [149], [150], [151]. This fosters the creation of new products and services, enabling SMEs to differentiate themselves and achieve sustainable competitive advantage (SCA).

3. **Organizational Agility, Digital Transformation, and Innovation Capabilities**

Organizational Agility facilitates the swift adoption and integration of digital solutions, as evidenced by studies that link agility to improved digital transformation and innovation outcomes [22], [29], [53], [123], [124], [125], [126], [130], [152], [153], [154], [155]. Agile SMEs can better respond to technological changes and market demands, ensuring their operations remain efficient and customer-focused.

4. **Digital Transformation as a Driver of SCA**

Research shows that digital transformation enhances operational efficiency, customer engagement, and market reach, all of which contribute to building SCA [75], [138], [144], [156], [157], [158], [159], [160], [161]. SMEs leveraging digital tools can create unique value propositions that are difficult for competitors to replicate.

5. **Innovation Capabilities and SCA**

The literature consistently demonstrates that Innovation Capabilities are critical for achieving SCA. SMEs with strong innovation capabilities are better equipped to respond to market changes, develop unique offerings, and maintain their competitive position [7], [75], [82], [92], [94], [144], [162], [163], [164], [165], [166], [167], [168], [169], [170], [171], [172], [173], [174], [175].

6. **Integration of Constructs**

The proposed framework aligns with Resource-Based Theory (Barney, 1991), which emphasizes the importance of intangible resources [19], [20], [21], [176], and Dynamic Capabilities Theory (Teece et al., 1997) [10], [34], [35], [101], which highlights adaptability in turbulent environments. Additionally, the Technology-Organization-Environment (TOE) framework [108], [109], [110], [111], [177] reinforces the role of digital transformation and innovation as mediating factors between organizational capabilities and SCA.

These insights reinforce the validity of the proposed conceptual model by anchoring it in established theoretical frameworks and empirical research. The model offers a comprehensive perspective on how SMEs can strategically leverage their resources and capabilities to attain long-term sustainability and maintain a competitive edge.

5. CONCLUSION

This conceptual model highlights the intricate interdependencies among Dynamic Capabilities, Organizational Agility, Entrepreneurial Orientation, Digital Transformation, and Innovation Capabilities, emphasizing their collective role in achieving Sustainable Competitive Advantage (SCA) for SMEs. The proposed framework suggests that organizations with strong dynamic capabilities can effectively integrate digital technologies, adapt swiftly to market changes, and foster a culture of innovation. Similarly, organizations with high agility are better positioned to implement digital transformations and capitalize on innovation opportunities, while an entrepreneurial orientation promotes proactivity and risk-taking, both essential for navigating the complexities of modern markets. By integrating these elements, this conceptual model provides a comprehensive theoretical foundation for understanding how SMEs can enhance their competitive advantage and thrive in an increasingly dynamic business environment.

6. LIMITATIONS

While this conceptual model provides valuable insights, it is essential to acknowledge certain limitations. First, the reliance on a systematic literature review may introduce biases based on the selected articles, potentially overlooking emerging perspectives or variables not captured within the established framework. Second, the dynamic nature of the variables may require continuous adaptation of the model to remain relevant in a rapidly evolving technological environment. Lastly, the model's applicability may vary across different sectors and geographical contexts, necessitating further empirical validation to enhance its generalizability.

7. FUTURE RESEARCH DIRECTIONS

Future research could explore several avenues to build upon this conceptual model. Empirical studies are warranted to validate the relationships posited within the model, particularly through longitudinal studies that assess how these dynamics evolve in response to changing market conditions. Additionally, investigations into the specific mechanisms through which these variables interact could provide deeper insights into their contributions to SCA. Researchers could also examine the role of external factors, such as market trends and regulatory environments, in influencing the effectiveness of dynamic capabilities, organizational agility, and entrepreneurial orientation. Furthermore, exploring the implications of varying cultural contexts on adopting and integrating digital transformation and innovation capabilities may yield significant insights for SMEs operating in diverse environments.

AUTHORS' CONTRIBUTIONS

CC led the conceptual framework development and manuscript drafting, and SS designed the research methodology and refined the model. At the same time, AM conducted data analysis and provided critical feedback, with all authors approving the final manuscript.

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