

THE ROLE OF OPERATIONS STRATEGY IN BUILDING SUSTAINABLE COMPETITIVE ADVANTAGE: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Background: Increasingly dynamic business competition compels firms to seek sources of competitive advantage that are difficult for rivals to imitate and can be sustained over the long term. The operations function is critical to this effort, although its strategic role is often underappreciated.

Aims: This study synthesizes the literature on the role of operations strategy in building sustainable competitive advantage and develops an integrated conceptual framework linking operational resources and capabilities to long-term competitive outcomes.

Research Method: A systematic literature review guided by the PRISMA 2020 statement was conducted. Scopus, Web of Science, ScienceDirect, and Google Scholar were searched using combinations of the terms “operations strategy,” “competitive advantage,” and “sustainable competitive advantage.” Eligible studies were analyzed thematically through the lenses of the Resource-Based View and Dynamic Capabilities Theory.

Results and Conclusion: Operations strategy acts as a bridging mechanism between a firm's internal resources and capabilities and sustainable competitive advantage through five principal pathways: lean and agile practices, total quality management, the integration of sustainability into operational decisions, digital transformation and Industry 4.0, and alignment with the local institutional context. Operations-based advantage is more difficult to imitate when it arises from valuable, rare, inimitable, and non-substitutable resources supported by dynamic capabilities that enable continuous adaptation.

Contribution: The study offers an integrated conceptual framework for academics and practitioners designing operations strategies for long-term competitive advantage and identifies future research priorities, particularly for small and medium-sized enterprises in developing countries.

Keywords: dynamic capabilities; operations strategy; resource-based view; sustainable competitive advantage; systematic literature review

Introduction

Contemporary global business competition unfolds in a volatile, uncertain, complex, and ambiguous (VUCA) environment characterized by technological disruption, supply-chain interruptions, and continuously changing consumer demands. Under these conditions, firms can no longer rely solely on temporary competitive advantages; instead, they must build sustainable competitive advantage, namely a competitive position that continues to deliver superior customer value over the long term and is not easily imitated by competitors (Barney, 1991; Porter, 1985).

For several decades, competitive strategy has tended to be viewed as the domain of marketing and top management, while operations has often been positioned as a technical and reactive support function (Hayes & Wheelwright, 1984). Yet Hayes and Wheelwright (1984) established that operations can progress from a merely internally neutral role to one that externally supports corporate competitive strategy and may ultimately become a primary source of competitive advantage. Slack and Lewis (2011) further developed this idea through an operations-strategy framework that emphasizes alignment between operations performance objectives, market requirements, and the firm's operational resources.

The strategic-management literature has extensively examined the sources of sustainable competitive advantage through two major theoretical perspectives. First, the Resource-Based View (RBV), developed by Barney (1991), explains that sustainable competitive advantage stems from resources that are valuable, rare, imperfectly imitable, and non-substitutable (the VRIN framework). Second, Dynamic Capabilities Theory, developed by Teece, Pisano, and Shuen (1997), stresses the firm's ability to integrate, build, and reconfigure internal and external competencies in response to rapidly changing environments. Both perspectives have frequently served as theoretical foundations for systematic studies of sustainable competitive advantage, including studies specifically addressing how operations management creates organizational value.

Recent systematic reviews both challenge and reinforce these theoretical ideas. For example, a systematic review of Lean Supply Chain Management found that the resulting competitive advantage is strongly shaped by internal factors, including customer focus, flexibility, and cost efficiency, as well as external factors such as collaboration and innovation (Khawka et al., 2024). A systematic review of digital transformation in small and medium-sized enterprises found that strengthening dynamic capabilities through digital technologies helps smaller firms overcome resource constraints while responding more rapidly to market changes (Lu & Shaharudin, 2024). Although these findings provide important insights into operational policies and practices, most existing reviews examine individual practices—such as lean, quality, or digitalization—in isolation rather than integrating them into a comprehensive operations-strategy framework.

To the authors' knowledge, relatively few studies have specifically synthesized the range of operations-strategy practices—from lean and agile systems and total quality management to sustainability and digital transformation—within a single conceptual framework explaining how operations strategy as a whole links organizational resources and capabilities to sustainable competitive advantage. This gap is increasingly relevant because empirical research on operations strategy and competitive advantage remains dominated by developed-country or large-firm contexts. Research in developing countries, including

Indonesia, remains comparatively limited, although it is growing, as illustrated by studies of Indonesian special economic zones (Yudoko, 2024) and village credit institutions (Winata, 2019). This research gap motivates the present systematic synthesis of the role of operations strategy in building sustainable competitive advantage.

Accordingly, this article addresses three research questions: (1) What theoretical foundations explain the relationship between operations strategy and sustainable competitive advantage? (2) Which operations-strategy practices are identified in the literature as sources of sustainable competitive advantage? and (3) What conceptual framework can integrate these practices into a coherent model? The study aims to synthesize the literature on the role of operations strategy in building sustainable competitive advantage through a systematic literature review, while formulating an integrated conceptual framework and directions for future research.

Literature Review

Competitive Advantage and Sustainable Competitive Advantage

Porter (1985) defines competitive advantage as a firm's ability to create value for buyers that exceeds the cost incurred to create that value, either through cost leadership or differentiation. Barney (1996) extended this concept through the notion of sustained competitive advantage, which occurs when a firm's value-creating strategy cannot simultaneously be duplicated by current or potential competitors and the benefits of that strategy therefore cannot be replicated for a particular period.

Resource-Based View (RBV)

Barney (1991) proposed the VRIN framework, which states that a firm resource may become a source of sustainable competitive advantage when it is valuable, rare, imperfectly imitable, and non-substitutable. The RBV views firms as bundles of heterogeneous resources and capabilities; consequently, differences in resources across firms can explain why some organizations sustain superior performance over time. In operations strategy, the RBV helps explain how operational resources—such as process technologies, employees' tacit knowledge, a culture of continuous improvement, and long-term supplier relationships—can create advantages that are difficult to imitate.

Dynamic Capabilities Theory

Teece, Pisano, and Shuen (1997) developed the concept of dynamic capabilities as an extension of the RBV to explain how firms create and sustain wealth in rapidly changing environments. Dynamic capabilities are defined as a firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments.

Within an operations-strategy framework, dynamic capabilities explain how a firm's capacity to continuously adjust its production processes, supply chain, and technologies becomes an essential condition for preventing an established competitive advantage from eroding over time.

Concept and Scope of Operations Strategy

Hayes and Wheelwright (1984) identified four stages in the strategic role of operations, progressing from an internally neutral role to an externally supportive role in which operations becomes a principal source of competitive advantage. Slack and Lewis (2011) subsequently defined operations strategy as the overall pattern of decisions that shapes an operation's long-term capabilities and its contribution to overall strategy by reconciling market requirements with operational resources.

This framework generally divides operations strategy into two main dimensions: content, comprising structural and infrastructural operational decisions, and process, concerning how operations strategy is formulated and implemented. Common operations performance objectives include quality, speed, dependability, flexibility, and cost; these objectives have more recently been expanded to include sustainability.

Conceptual Framework: Operations Strategy as a Bridge to Sustainable Competitive Advantage

Drawing on the RBV, dynamic capabilities, and the concept of operations strategy, this article proposes that operations strategy functions as a bridging mechanism that translates a firm's internal resources and capabilities into competitive advantages perceived by customers in the marketplace. When VRIN operational resources are combined with dynamic capabilities for continuous adaptation, they produce distinctive operating practices—for example lean, agile, TQM, and sustainable operations—that in turn generate competitive advantages that are relatively difficult to imitate and can be sustained over the long term. This framework guides the thematic analysis presented in the Results and Discussion section.

Research Method

Research Design

This study employed a systematic literature review (SLR) approach guided by the PRISMA 2020 principles (Page et al., 2021), which provide a transparent and replicable reporting framework for systematic reviews. The SLR approach was selected because it enables researchers to systematically identify, assess, and synthesize evidence from prior studies in order to answer the formulated research questions.

Research Questions

As stated in the Introduction, the review addressed three research questions (RQs): RQ1 concerned the theoretical foundations of operations strategy and sustainable competitive advantage; RQ2 examined operations-strategy practices identified as sources of competitive advantage; and RQ3 concerned the integrative conceptual framework that can be formulated from the existing literature.

Search Strategy and Data Sources

The literature search covered the principal academic databases Scopus, Web of Science, and ScienceDirect, supplemented by Google Scholar to capture relevant national publications. Search strings combined the terms “operations strategy,” “operations management,”

“competitive advantage,” and “sustainable competitive advantage,” together with their Indonesian equivalents (“strategi operasi” and “keunggulan bersaing berkelanjutan”), using the Boolean operators AND and OR.

The search focused on indexed journal articles and other relevant scholarly publications, with emphasis on work published during the previous ten years, while retaining seminal theoretical contributions in strategic management and operations management that form the theoretical foundation of this review.

Inclusion and Exclusion Criteria

Studies were included when they met the following criteria: (a) explicitly examined the relationship between operations strategy or operations management and competitive advantage or sustainable competitive advantage; (b) were scholarly journal articles, books, or book chapters; (c) were available in English or Indonesian; and (d) had accessible full text or a substantive abstract.

Studies were excluded when they (a) addressed competitive advantage without linking it to the operations function; (b) were popular opinion pieces lacking a clear academic foundation; or (c) duplicated studies already included in the review.

Study Selection and Data Analysis

The selection process proceeded in stages, beginning with title and abstract screening and followed by full-text review of potentially relevant articles, as recommended by the PRISMA framework (Page et al., 2021). Eligible studies were then analyzed through thematic synthesis. Findings from each study were grouped into major themes according to the operations-strategy practices examined and subsequently linked back to the RBV and dynamic capabilities foundations. This review is narrative and thematic, emphasizing the depth of conceptual synthesis rather than large-scale quantitative bibliometric analysis. The studies discussed in detail were therefore purposively selected from the most relevant and frequently cited works within each theme.

Results and Discussion

Overview of Themes

The selection process identified five major themes concerning the role of operations strategy in building sustainable competitive advantage: (1) lean and agile practices in supply chains, (2) total quality management, (3) sustainability-oriented operations strategy, (4) digital transformation and Industry 4.0, and (5) operations strategy in the local institutional context. These themes are discussed sequentially below.

Lean and Agile Practices as Sources of Competitive Advantage

Khawka et al.’s (2024) systematic review of Lean Supply Chain Management (LSCM) found that lean principles contribute to competitive advantage through internal factors—including customer orientation, flexibility, cost efficiency, and speed to market—and external factors such as interorganizational collaboration and innovation. These findings align with Hayes and Wheelwright’s (1984) proposition that operational advantage can arise from

superior management of production processes rather than solely from product or marketing advantages. Whereas lean emphasizes efficiency and waste reduction, agile operations emphasize the capacity to respond rapidly to uncertain changes in market demand. The combination of the two approaches indicates that optimal competitive advantage often comes not from the exclusive use of one approach but from a firm's ability to calibrate its degree of leanness and agility to the characteristics of its markets and products.

Total Quality Management and Competitive Advantage

Through a literature review and empirical study, Powell (1995) found that Total Quality Management (TQM) does not automatically generate competitive advantage; its effect depends on tacit elements of implementation, including top-management commitment, organizational openness, and employee empowerment, which are considerably more difficult to imitate than the technical adoption of quality tools and techniques. This finding reinforces the RBV argument that resources capable of producing sustainable competitive advantage are often intangible and embedded in organizational routines. Similarly, Baker and Lemak's (2007) meta-analysis of empirical TQM studies showed that TQM components—leadership commitment, teamwork, organizational culture, training, and process efficiency—are consistently associated with competitive advantage, although the strength of these relationships varies across studies. Operations strategies that integrate TQM must therefore address cultural and leadership dimensions rather than focusing exclusively on technical quality control.

Sustainability-Oriented Operations Strategy

Growing environmental and social pressures have encouraged firms to integrate sustainability principles into operations-strategy decisions. Yudoko (2024) developed a theoretical framework for sustainable operations strategy and tested it through a case study of an Indonesian special economic zone. The study found that conventional operations-strategy frameworks must be enriched with good corporate governance and local values to be applied effectively in developing-country contexts. This finding confirms that sustainable operations strategy extends beyond compliance with environmental regulation and can serve as a distinct source of differentiation and competitive advantage. A literature review of sustainable operations management in the energy sector similarly confirmed the increasing integration of environmental, social, and governance indicators into firms' core operating practices (Losada-Agudelo & Souyris, 2024). Operational sustainability can therefore be viewed as an extension of the traditional operations performance dimensions—cost, quality, speed, dependability, and flexibility—identified by Slack and Lewis (2011).

Digital Transformation and Dynamic Capabilities in Operations Strategy

Lu and Shaharudin's (2024) systematic review of digital transformation in small and medium-sized enterprises (SMEs) found that digital technologies—including big data, artificial intelligence, and digital platforms—strengthen SMEs' innovation and dynamic capabilities, helping smaller firms overcome resource constraints and respond more rapidly to market changes. This finding directly links Teece et al.'s (1997) concept of dynamic capabilities to contemporary digital-transformation practices in operations strategy. In a sustainability-related context, Wu, Cheng, and Yang (2024) also demonstrated that digital transformation can strengthen SMEs' green competitive advantage by enhancing green innovation, although its effectiveness is also influenced by government regulation. These findings confirm that, in the

digital era, operations strategy can no longer be separated from information-technology investment decisions and firms' digital capabilities.

Local Institutional Context: Lessons from Indonesia

In Indonesia, Winata's (2019) study of Village Credit Institutions (Lembaga Perkreditasi Desa, LPDs) in Buleleng Regency found that an organizational culture grounded in local values significantly influences operations strategy and performance, which ultimately contribute to the institutions' sustainable competitive advantage. This provides empirical evidence that operations strategy cannot be separated from the sociocultural context in which an organization operates, consistent with Yudoko's (2024) framework emphasizing the importance of local values in sustainable operations strategy in Indonesia. At a different level, Askolani, Ciptagustia, and Nugraha's (2018) study of higher education showed that knowledge strategy also contributes to institutions' sustainable competitive advantage, extending the relevance of the RBV and operations strategy to service and education sectors rather than manufacturing alone.

Synthesis: An Integrated Framework for the Role of Operations Strategy in Building Sustainable Competitive Advantage

The five themes indicate that operations strategy acts as a bridging mechanism between organizational resources and capabilities and competitive advantages perceived by customers. A relatively consistent pattern emerges across the themes: valuable and difficult-to-imitate operational resources are combined with dynamic capabilities for continuous adaptation, producing distinctive operations practices that, in turn, create advantages that competitors find difficult to replicate. Table 1 summarizes the relationship among the themes, theoretical foundations, and principal findings of this literature review.

Table 1. Summary of Themes, Key Studies, Theoretical Foundations, and Principal Findings

Theme	Key Studies	Main Theoretical Foundation	Principal Finding
Lean and agile supply chains	Khawka et al. (2024)	Resource-Based View; operations strategy (Hayes & Wheelwright, 1984)	Flexibility, customer focus, and cost efficiency drive competitive advantage.
Total Quality Management	Powell (1995); Baker & Lemak (2007)	Resource-Based View	Tacit elements, particularly leadership and culture, are more decisive than technical quality tools.
Sustainability-oriented operations	Yudoko (2024); Losada-Agudelo & Souyris (2024)	Dynamic Capabilities; local institutional context	Sustainability is a source of differentiation rather than merely regulatory compliance.
Digital transformation	Lu & Shahrudin (2024); Wu et al. (2024)	Dynamic Capabilities	Digital technology strengthens dynamic capabilities and helps SMEs overcome resource constraints.
Local institutional context	Winata (2019); Askolani et al. (2018)	Resource-Based View; organizational culture	Local values and knowledge strategy strengthen competitive advantage in developing countries.

Conclusion

Summary of Findings

This systematic literature review demonstrates that operations strategy plays a strategic—not merely technical—role in building sustainable competitive advantage. Based on the Resource-Based View and Dynamic Capabilities Theory, the review identifies five principal pathways through which operations strategy leads to sustainable competitive advantage: lean and agile practices, total quality management, sustainability-oriented operations, digital transformation, and alignment with the local institutional context.

Theoretical and Practical Contributions

Theoretically, this article integrates research streams that have tended to develop separately into a coherent conceptual framework, thereby enriching understanding of the mechanisms through which operations strategy creates competitive advantage. Practically, the framework can guide operations managers and corporate decision-makers in designing operations strategies that focus not only on short-term efficiency but also on developing long-term capabilities that competitors find difficult to imitate.

Research Limitations

This review has several limitations. First, as a narrative thematic review, it does not conduct a large-scale quantitative bibliometric analysis; consequently, the literature examined in depth was purposively selected and is not fully exhaustive. Second, most empirical studies reviewed originated from particular industries and countries, and the findings should therefore be generalized across sectors and regions with caution.

Directions for Future Research

Future studies should empirically test the conceptual framework proposed in this article, particularly among small and medium-sized enterprises in developing countries, including Indonesia. Longitudinal research could examine how operations-based competitive advantages persist or erode over time. Cross-sector comparative studies encompassing manufacturing, services, and education could also assess the generalizability of the integrated framework.

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