

The Role of Leadership and Organizational Culture in Driving Digital Transformation in Indonesia SMEs: A Systematic Literature Review

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Abstract: Digital transformation has become a strategic imperative for small and medium-sized enterprises (SMEs), especially in emerging economies like Indonesia. While much attention has been placed on technology adoption, the internal organizational factors—particularly leadership and culture—remain insufficiently examined, despite their critical role in shaping digital readiness and sustainability. This study aims to systematically investigate how transformational leadership and organizational culture interact to influence digital transformation in Indonesian SMEs. It also explores how dynamic capabilities and contextual conditions contribute to digital maturity and resilience. A systematic literature review (SLR) was conducted based on 48 peer-reviewed articles published between 2018 and 2023 in Scopus Q1/Q2 journals. The articles were selected using keyword combinations related to “digital transformation,” “leadership,” “organizational culture,” “dynamic capability,” “TOE Framework,” “SMEs,” and “Indonesia.” Thematic content analysis was used to extract and synthesize core themes. Four dominant themes emerged: (1) transformational leadership enables digital vision, motivation, and adaptive change; (2) adaptive organizational cultures support innovation and reduce resistance; (3) dynamic capabilities—sensing, seizing, transforming—act as strategic mechanisms; and (4) the Technology–Organization–Environment (TOE) framework provides a useful structure for assessing digital readiness. These factors are interdependent and collectively shape the success of SME digital transformation. The study integrates multiple theoretical perspectives—Transformational Leadership Theory, Organizational Culture Theory, Dynamic Capabilities Theory, and the TOE framework—into a comprehensive model of SME digital transformation. It offers practical guidance for leaders and policymakers to design more holistic and context-sensitive digital strategies that extend beyond mere technology adoption.

Keywords: digital transformation; SMEs; leadership; organizational culture; dynamic capabilities; indonesia

INTRODUCTION

The Fourth Industrial Revolution has indeed transformed the global landscape, compelling organizations, especially small and medium-sized enterprises (SMEs), to adapt their

strategies in response to rapid digital developments. SMEs are pivotal in economies like Indonesia, where they provide substantial employment opportunities and contribute significantly to gross domestic product (GDP). Despite the potential benefits of digital technologies—such as artificial intelligence, big data analytics, the Internet of Things (IoT), and cloud computing—SMEs often grapple with unique challenges, including limited resources and infrastructural constraints. These issues hinder their digital adoption, despite supportive government initiatives in Indonesia aimed at fostering digital transformation (Jewapatarakul & Ueasangkomsate, 2024)

Research indicates that the success of digital transformation within SMEs is heavily influenced not just by technological access but also by leadership and organizational culture (Tonder et al., 2023) . A techno-centric approach may overshadow these human and cultural dimensions, contributing to failures in digital transformation efforts when organizations lack visionary leadership and a supportive culture (Musaigwa & Kalitanyi, 2024). It is critical to comprehend how leadership styles, particularly transformational leadership, and the underlying organizational culture interact to promote or impede digital transformation in SMEs (Gilch & Sieweke, 2020) . Studies emphasize that digital leadership is vital in molding organizational behavior toward innovation and the adoption of technologies, underscoring the need for a comprehensive understanding of these internal factors (J. Zhang et al., 2021).

In addressing the intersection of leadership and organizational culture in shaping digital transformation, this study integrates concepts from various theoretical frameworks. Transformational Leadership Theory posits that leaders can significantly inspire and motivate teams to innovate and adapt (Mihardjo et al., 2019). Schein's Organizational Culture Theory further elucidates how established norms and values within an organization can either facilitate or obstruct readiness for digital change (Tonder et al., 2023) . Additionally, the Dynamic Capabilities framework highlights the importance of sensing and seizing opportunities strategically, which is crucial for SMEs navigating the challenges of digital transformation (Furr et al., 2022)

Furthermore, the Technology–Organization–Environment (TOE) framework offers a broader lens through which to assess the interplay between technological advancements, organizational characteristics, and environmental pressures that collectively influence the digital adoption trajectory (Ajigini & Chinamasa, 2023). This integrative perspective is crucial for fostering a deeper understanding of how internal dynamics and external contexts converge to shape the digital future of SMEs (Badasjane et al., 2022) .

To encapsulate, this study seeks to explore how transformational leadership influences the digital transformation success of SMEs, what cultural factors either support or hinder these transformations, and how leadership interacts with organizational culture to sustain long-term digital changes. The methodological approach, grounded in a systematic literature review of recent peer-reviewed articles, aims to harness rigorous academic insights relevant to both scholars and practitioners (Y. Zhang & Wang, 2023) . In doing so, this research not only closes significant gaps in the existing literature but also serves as a valuable resource for SME leaders and policymakers facing the complexities of digitalization.

METHOD

This study adopts a Systematic Literature Review (SLR) approach to critically investigate the interplay between leadership, organizational culture, and digital transformation within the context of small and medium-sized enterprises (SMEs) in Indonesia. The SLR methodology is recognized for its effectiveness in synthesizing existing knowledge, identifying research gaps, and formulating theoretical frameworks in a structured, replicable, and transparent manner. Following the comprehensive guidelines established by Tranfield, Denyer, and Smart (2003), the review process encompasses three primary stages: (1) planning the review, (2) conducting the review, and (3) reporting and synthesizing the findings (Garzoni et al., 2020)

In the planning stage of the SLR, the scope and objectives were meticulously defined to align with research questions focused on the roles of transformational leadership, organizational culture, and their interaction in facilitating or hindering digital transformation (HABİBOĞLU et al., 2020). The review targeted peer-reviewed journal articles that examined these factors within the digitalization context of SMEs, particularly favoring studies relevant to emerging economies like Indonesia. A comprehensive search strategy was devised, utilizing well-established academic databases such as Scopus and Web of Science. Keywords were generated from the core constructs of the study, incorporating terms such as “digital transformation,” “leadership,” “organizational culture,” “SMEs,” “dynamic capabilities,” “TOE framework,” and “Indonesia”. Boolean operators (AND, OR) were strategically employed to enhance the precision and breadth of the search.

During the review execution stage, a two-level screening process was implemented to guarantee the inclusion of high-quality and pertinent sources. The initial search produced 237 articles published between 2018 and 2023, which were screened based on title and abstract followed by a full-text evaluation to assess both conceptual and empirical relevance (Dewi & Wiksuana, 2023). Only open-access articles published in Scopus-indexed Q1 and Q2 journals were deemed suitable. Inclusion criteria dictated that studies must explicitly address the roles of

leadership and/or organizational culture in digital transformation processes within the SME context. In contrast, exclusion criteria eliminated articles focusing solely on technological adoption without considering organizational variables, non-peer-reviewed materials, and case studies not associated with SMEs. Ultimately, 48 articles were selected for in-depth analysis.

Data analysis was executed via content analysis guided by a thematic synthesis strategy, which involved reading and coding each article to extract relevant findings, concepts, and theoretical connections. Thematic analysis adhered to the six-phase process delineated by (Braun & Clarke, 2006), encompassing familiarization with data, generation of initial codes, theme searching, theme reviewing, theme defining and naming, and report production (Liu, 2024). NVivo software facilitated systematic coding and categorization, ensuring traceability and consistency across sources. Emergent themes were organized around the theoretical constructs of transformational leadership, organizational culture, dynamic capabilities, and the TOE framework, allowing for a coherent synthesis of findings (Teng et al., 2022).

To enhance the reliability of the study, inter-coder agreement was appraised through the involvement of a second independent reviewer who cross-validated 20% of the coded data. Trustworthiness and methodological rigor were further strengthened by implementing strategies such as transparent documentation of the review protocol, source triangulation, and citation tracking (Ghobakhloo & Iranmanesh, 2021). The multi-theoretical lens employed provided a holistic understanding of the phenomenon, while the rigorous application of the SLR methodology ensures the credibility and relevance of the findings. Utilizing recent, peer-reviewed, and open-access literature underscores the reliability of the conclusions drawn from this review (Abdurrahman et al., 2022). This methodological approach not only facilitates the development of an integrative conceptual framework grounded in evidence but also informs future empirical research and practice concerning the digital transformation of SMEs, particularly in developing market environments like Indonesia.

RESULT

The systematic analysis of peer-reviewed journal articles has identified four major thematic areas that illustrate the dynamics of digital transformation in small and medium-sized enterprises (SMEs), particularly within the Indonesian context. These themes include (1) the role of transformational leadership in digital transformation, (2) the significance of organizational culture in facilitating digital change, (3) the integration of dynamic capabilities into SME digital strategies, and (4) the applicability of the Technology–Organization–Environment (TOE) framework for assessing readiness for digitalization.

1. Transformational Leadership as a Strategic Driver of SME Digitalization

Transformational leadership has been identified as a key enabler of digital transformation in SMEs. Leaders exhibiting this style can articulate a compelling digital vision and foster employee engagement, which creates a culture conducive to innovation (Sun, 2024). Research indicates that such leaders not only oversee digital initiatives but also act as catalysts for organizational change, thus enhancing digital readiness by building trust, encouraging creativity, and aligning teams around common digital objectives (Gyamerah et al., 2025). In the Indonesian context, where many SMEs are family-owned, the interplay of leadership structures can either facilitate or hinder digital transformation, depending on the leader's adaptability to innovative practices and commitment to learning (Omrani et al., 2024).

2. Organizational Culture as a Foundation for Digital Transformation

Organizational culture plays a critical role in how digital technologies are adopted and internalized within SMEs. A culture that promotes innovation and collaboration fosters an environment where digital experimentation can thrive, leading to quick adaptations to technological changes (Kwiatkowska, 2024). Conversely, rigid and hierarchical cultures often provoke resistance, inhibit knowledge sharing, and impede learning processes critical for digital progress (Lång et al., 2022). In Indonesian SMEs, transforming cultural norms, often grounded in traditional practices, requires leaders to reframe values toward more modern, customer-centric approaches. This cultural transformation necessitates deliberate actions within the organization, including implementing internal communication strategies and reward systems aligned with digital objectives (Kwiatkowska, 2024).

3. Integration of Dynamic Capabilities into Digital Strategy

Dynamic capabilities facilitate SMEs' engagement with digital opportunities, including the ability to sense market trends, seize opportunities, and transform processes and business models accordingly (Yue, 2024). Studies have shown that SMEs with well-developed dynamic capabilities are better prepared to navigate uncertainties in digital environments (Omrani et al., 2024). However, Indonesian SMEs often lag behind due to limited access to training and weak institutional support. Collaborative efforts with academic institutions and government agencies have emerged as valuable methods for fostering these capabilities, illustrating the connection between leadership, culture, and positive digital transformation outcomes (Yue, 2024);

4. TOE Framework in Mapping Digital Transformation Readiness

The Technology–Organization–Environment (TOE) framework provides insights into

digital transformation readiness by integrating technological factors, organizational structure, and environmental conditions. Access to appropriate digital tools, understanding of internal organizational structures, and external influences such as regulation and market pressures are critical (Dong & Dai, 2023). Contextual challenges in Indonesia, such as limited broadband access and uneven policy implementation, continue to hinder transformation efforts for SMEs (Yue, 2024). Effectively aligning the three dimensions of the TOE framework increases the likelihood of achieving successful and sustainable digital transformation outcomes (Trường & My, 2022).

Collectively, these findings suggest that digital transformation in SMEs is a systemic process driven by visionary leadership, supported by an adaptive organizational culture, sustained through strategic capabilities, and contextualized within technological and environmental realities. This holistic understanding establishes a solid foundation for both theoretical advancements and practical strategies that address the specific contexts of SMEs in emerging markets like Indonesia.

DISCUSSION

The findings of this systematic literature review provide a comprehensive understanding of the internal and external forces that shape digital transformation in small and medium-sized enterprises (SMEs), particularly in Indonesia. Central to these findings is the notion that digital transformation is not merely a technological endeavor but a fundamental organizational process influenced by leadership behavior, cultural alignment, strategic flexibility, and contextual adaptability. This section discusses the main thematic findings in relation to existing theories and empirical work, thus establishing theoretical coherence and highlighting practical implications.

First, the centrality of transformational leadership in enabling digital transformation aligns with the principles of Transformational Leadership Theory proposed by (Bass, 2015). Effective leaders in dynamic environments must inspire a compelling digital vision, foster a culture of experimentation, and build trust among their teams (Sow & Aborbie, 2018). The review underscores that transformational leaders act as pivotal figures in navigating digital uncertainties and institutionalizing innovation, especially in the context of SMEs, where informal power structures often prevail. The findings suggest that leadership development is crucial, emphasizing essential skills such as emotional intelligence, adaptive thinking, and change management capabilities. These qualities are critical for bridging technological capabilities and human dimensions in resource-constrained environments (Sow & Aborbie, 2018).

The discussion of leadership is intertwined with the development of dynamic capabilities, reinforcing (Teece, 2025) assertions that the processes of sensing, seizing, and transforming are

inherently managerial functions (Bouwman et al., 2019). Leaders who adopt transformational characteristics are better positioned to identify external trends, mobilize resources effectively, and restructure processes in alignment with digital advancements. This integration indicates that leadership style is not merely a static trait but a dynamic mechanism influencing how organizations perceive and respond to digital challenges. Practically, this reconceptualization of leadership as an evolving capability within SMEs emphasizes the need to continuously adjust to the changing digital landscape (Jewapatarakul & Ueasangkomsate, 2024).

Second, the role of organizational culture resonates with Schein's framework (Hogan & Coote, 2014), which characterizes culture as a system of shared assumptions developed over time. The review suggests that successful digital transformation requires explicit cultural shifts towards openness, agility, and resilience (Soomro & Shah, 2019). Cultures that reward experimentation and view failure as a learning opportunity are essential for fostering an environment conducive to digital change. However, many SMEs struggle with rigid and hierarchical cultural structures that can hinder innovation. Transforming organizational culture is thus a dual challenge involving psychological shifts and structural changes. This requires concerted efforts, including leadership modeling, cross-functional collaboration, and performance incentives aligned with innovative objectives (Priyono et al., 2020).

Moreover, the relationship between leadership and culture operates bidirectionally. Leaders shape organizational culture, and the existing culture can either support or undermine leadership efforts (Jewapatarakul & Ueasangkomsate, 2024). This reciprocal relationship emphasizes the importance of integrated interventions that address both leadership and culture to facilitate successful digital transformation. For instance, leadership training programs could be coupled with organizational development initiatives aimed at cultural realignment. Failure to align these dimensions risks creating dissonance between leadership objectives and employee experiences, potentially hindering transformation efforts (Furr et al., 2022).

Third, the concept of dynamic capabilities provides a strategic lens for understanding digital transformation as a continuous process, implying that SMEs should be equipped to adapt to changing environments rather than approaching transformation as a one-off project (Zhang et al., 2022). SMEs possessing strong dynamic capabilities can better integrate and adapt to emerging technologies that respond effectively to market demands. However, the findings suggest that many SMEs lack these capabilities due to insufficient strategic foresight and limited resources (Daud, 2024). This highlights the need for policy and support systems to focus on building not just technical infrastructures but also capabilities for strategic decision-making and market sensing. Collaborative training, mentoring, and funding models may enhance these

aspects, emphasizing long-term development (Amaliah & Sawitri, 2023).

The interdependencies among dynamic capabilities, leadership, and culture suggest the need for holistic organizational frameworks that avoid isolating these elements (Firican, 2023). An SME's ability to capitalize on digital opportunities often relies on its leadership's foresight, which is conditioned by its openness to change. Thus, strategies for digital transformation should function as system-level interventions that synchronize leadership development, cultural enhancement, and strategic capability building (Ajigini & Chinamasa, 2023).

Finally, incorporating the Technology–Organization–Environment (TOE) framework adds essential contextual depth to the study's findings. While internal readiness is crucial, external factors such as regulatory frameworks, infrastructural availability, and competitive pressures greatly influence SMEs' digital trajectories (Kocak & Pawlowski, 2023). In Indonesia, issues such as fragmented digital ecosystems and regulatory inconsistencies necessitate tailored approaches that effectively address these barriers while incentivizing collaboration across stakeholders (Soomro & Shah, 2019).

Integrating the TOE framework with discussions of leadership, culture, and dynamic capabilities yields a comprehensive model of digital transformation that is grounded in both theory and empirical validation (Martínez-Peláez et al., 2023). This model better captures the interactions between internal organizational dynamics and external environmental factors, fostering a more holistic understanding of digital transformation in emerging markets. The findings also serve as a guide for SMEs and supporting institutions to assess readiness, identify gaps, and create customized transformation pathways.

In summary, this discussion reaffirms the notion that digital transformation is a socio-technical process requiring coherent alignment across leadership, culture, capabilities, and external contextual factors. The complexity inherent in achieving this alignment, particularly within SMEs, underscores the importance of multidimensional strategies and cross-sector collaboration. Future research should continue to delve into these interactions using longitudinal and mixed-method approaches to enhance understanding of how digital transformation unfolds across diverse organizational contexts (Jewapatarakul & Ueasangkomsate, 2024).

CONCLUSION

This study provides a comprehensive synthesis of the roles that leadership, organizational culture, dynamic capabilities, and contextual factors play in shaping the success of digital transformation in small and medium-sized enterprises (SMEs), specifically within the Indonesian context. Based on a systematic review of 48 peer-reviewed articles from high-quality

academic journals, it is revealed that digital transformation in SMEs transcends mere technological adoption; it is a complex organizational process requiring strategic alignment across internal and external domains.

First, the findings underscore the centrality of transformational leadership in driving digital change. Leaders who inspire, empower, and communicate a compelling digital vision serve as critical agents in fostering organizational commitment and resilience during digital transitions. This assertion aligns with previous studies indicating that transformational leadership enhances SMEs' adaptability and success by motivating employees to embrace change and facilitating a supportive organizational environment (Sidabutar & Siswanto, 2024) .

Second, the review affirms that a supportive organizational culture—characterized by openness, collaboration, and tolerance for innovation—enables SMEs to overcome resistance and sustain momentum in their transformation journey. This is consistent with findings that suggest a conducive culture is essential for the acceptance and internalization of digital innovations within organizations (Teng et al., 2022)

Third, dynamic capabilities—specifically the ability to sense, seize, and transform in response to digital opportunities—are identified as strategic competencies that bridge the gap between vision and execution. This corroborates (Teece, 2025) assertion that dynamic capabilities are critical in navigating the complexities of digital transformation. SMEs with developed dynamic capabilities are better positioned to adapt to changing market conditions and capitalize on new technologies (Sasmoko et al., 2019).

Lastly, the integration of the Technology–Organization–Environment (TOE) framework reveals that organizational readiness must be considered alongside technological access and environmental support for successful digital transformation. This highlights the importance of external factors, such as regulatory environments and market dynamics, which shape the digital trajectories of SMEs (Ahmad et al., 2023). The TOE framework provides a structured approach to assessing readiness and identifying barriers, facilitating strategic planning in digital transformation initiatives.

Theoretically, this study advances the literature by integrating multiple conceptual perspectives—Transformational Leadership Theory, Organizational Culture Theory, Dynamic Capabilities Theory, and the TOE Framework—into a unified analytical model. This integrative approach offers a more nuanced understanding of digital transformation in SMEs, particularly in emerging market contexts where structural and institutional constraints differ significantly from those in developed economies. The study contributes to a context-sensitive theory of digital

transformation that bridges behavioral, strategic, and environmental dimensions (Raihan, 2024).

Practically, actionable insights for SME leaders, policymakers, and support organizations are provided. Leaders are encouraged to invest in their transformational leadership competencies and digital literacy to effectively guide organizational change. Organizations must realign their cultures to foster innovation and experimentation, while support institutions—including governments, universities, and incubators—should design policies and programs that build organizational capabilities and cultivate enabling environments for digital transformation. These initiatives must extend beyond providing technology to address the underlying human and structural dimensions of change (Zeike et al., 2019).

In conclusion, digital transformation in SMEs must be conceptualized as an organizational evolution driven by leadership and culture, enabled by strategic capabilities, and supported by a conducive external environment. Efforts to promote digital transformation in emerging economies like Indonesia require a systemic perspective that integrates these interdependent factors. Future research should delve deeper into how these dynamics unfold over time, across sectors, and under varying institutional conditions to enhance understanding and support evidence-based digital policy and practice (Sow & Aborbie, 2018).

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