

Artificial Intelligence Readiness for Halal SMEs: The Role of Digital Capability, Halal Awareness, and Innovation Orientation

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Abstract. This study examines the readiness of Halal Small and Medium-sized Enterprises (SMEs) to adopt Artificial Intelligence (AI) by synthesizing the existing body of knowledge on the roles of digital capability, halal awareness, and innovation orientation. The rapid advancement of AI technologies has created significant opportunities for enhancing operational efficiency, decision-making quality, and sustainable competitiveness within the halal business ecosystem. However, the successful implementation of AI requires organizational readiness that extends beyond technological infrastructure to include strategic, cultural, and knowledge-based capabilities. This study employs a literature review approach to systematically analyze and integrate relevant scholarly publications concerning AI readiness and its determinants in the context of Halal SMEs. The reviewed literature was critically examined to identify recurring themes, conceptual relationships, and emerging research trends associated with AI adoption in halal-oriented enterprises. The findings indicate that digital capability provides the technological foundation necessary for AI integration, while halal awareness strengthens organizational commitment to maintaining Sharia-compliant business practices during digital transformation. Furthermore, innovation orientation encourages organizational adaptability and supports the continuous exploration of AI-enabled business opportunities in increasingly dynamic markets. The synthesis also reveals that the interaction among these three dimensions forms a comprehensive framework that enhances the strategic readiness of Halal SMEs to embrace AI-driven transformation. This study contributes to the literature by offering an integrated conceptual perspective that bridges technological capability, halal values, and innovation-oriented organizational behavior within the AI readiness discourse. The proposed framework provides valuable theoretical insights for future research and practical guidance for policymakers, industry practitioners, and Halal SMEs seeking to accelerate AI adoption while preserving the principles of the halal ecosystem.

Keywords: *Artificial Intelligence Readiness, Halal SMEs, Digital Capability, Halal Awareness, Innovation Orientation*

A. INTRODUCTION

Artificial Intelligence (AI) has emerged as a transformative technology that is reshaping business models, operational processes, and competitive strategies across industries, making it a fundamental driver of digital transformation in the contemporary economy (Dwivedi et al., 2021). The rapid advancement of AI technologies, including machine learning, natural language processing, and predictive analytics, enables organizations to improve operational efficiency, automate complex processes, and enhance data-driven decision-making capabilities, thereby creating substantial strategic value for businesses of all sizes (Davenport & Ronanki, 2018). Although large enterprises have generally led the adoption of AI due to their superior financial and technological resources, Small and Medium-sized Enterprises (SMEs) are increasingly recognizing AI as an essential instrument for improving productivity, innovation, and long-term competitiveness within rapidly evolving markets (Oldemeyer et al., 2025).

In the context of Industry 4.0, AI has become a critical enabler of intelligent manufacturing, digital business ecosystems, and organizational agility, allowing SMEs to respond more effectively to changing customer demands and increasingly dynamic competitive environments (Hansen & Bøgh, 2021). The integration of AI with digital transformation

initiatives facilitates more efficient resource utilization, personalized customer engagement, and enhanced strategic planning, thereby strengthening organizational resilience in the face of economic uncertainty (Verhoef et al., 2021). The realization of these benefits is contingent upon the existence of sufficient organizational readiness, as successful AI implementation requires not only technological infrastructure but also appropriate managerial capabilities, digital competencies, and strategic alignment (Oldemeyer et al., 2025).

Recent scholarly evidence further suggests that AI adoption among SMEs remains fragmented because many organizations continue to encounter constraints related to financial resources, technical expertise, organizational culture, and digital maturity, despite the increasing accessibility of AI technologies (Aish & Noor, 2025). AI readiness has become an increasingly important concept in the digital transformation literature, emphasizing the preparedness of organizations to effectively adopt, integrate, and leverage AI for sustainable organizational performance (Omar & Ho, 2026). This growing emphasis is particularly relevant for SMEs operating in highly specialized sectors, where digital transformation must be carefully aligned with sector-specific operational characteristics and strategic objectives. Understanding the determinants of AI readiness has become a significant research priority for advancing digital transformation and strengthening the long-term competitiveness of SMEs in the emerging AI-driven economy.

Despite the growing strategic importance of Artificial Intelligence (AI), many Halal Small and Medium-sized Enterprises (SMEs) continue to face considerable challenges in achieving the organizational readiness required for effective AI adoption. Unlike conventional SMEs, Halal SMEs must simultaneously pursue digital transformation while maintaining compliance with halal principles, creating additional managerial, technological, and operational complexities that influence the pace and effectiveness of AI implementation (Razak et al., 2026). These enterprises frequently encounter limitations in digital infrastructure, financial resources, technological expertise, and organizational capabilities, all of which restrict their ability to integrate AI into business processes and strategic decision-making (Oldemeyer et al., 2025). Insufficient digital maturity often hinders the development of the data management practices and analytical competencies that constitute essential prerequisites for AI-enabled innovation and automation (Oldemeyer et al., 2025).

Beyond technological constraints, Halal SMEs are expected to preserve transparency, traceability, and Sharia compliance throughout their value chains, thereby requiring AI implementation to be aligned not only with operational objectives but also with ethical and religious standards (Razak et al., 2026). This dual responsibility increases organizational complexity because technological modernization must be accompanied by continuous adherence to halal assurance systems and stakeholder trust. AI readiness within Halal SMEs should be understood as a multidimensional organizational capability that encompasses technological preparedness, managerial commitment, digital competence, and halal-oriented governance rather than merely the availability of advanced technologies.

Recent conceptual evidence also suggests that the performance of Halal SMEs in digital business ecosystems depends on the interaction between technological capabilities, organizational resources, and halal-related dimensions, indicating that AI readiness cannot be adequately explained through technological factors alone (Suhartanto et al., 2026). Many Halal SMEs remain at an early stage of digital transformation, resulting in fragmented AI adoption and limited capacity to exploit AI for innovation and sustainable competitive advantage. Identifying the organizational challenges that shape AI readiness represents an essential step toward developing a comprehensive understanding of how Halal SMEs can successfully navigate AI-driven digital transformation while sustaining their halal value proposition.

Artificial Intelligence (AI) readiness in Halal SMEs is shaped by a combination of organizational capabilities that extend beyond technological infrastructure and encompass strategic, managerial, and value-based dimensions. Digital capability represents a critical organizational resource that enables firms to acquire, integrate, and utilize digital technologies effectively while strengthening their ability to transform business processes and generate value through data-driven decision-making (Alqam et al., 2025). As AI implementation becomes increasingly dependent on digital maturity, organizations with stronger digital capabilities are generally better positioned to absorb emerging technologies and accelerate digital transformation initiatives. Nevertheless, technological capability alone is insufficient for Halal SMEs because business modernization must also preserve halal integrity, ethical accountability, and consumer confidence across the entire value chain.

In this context, awareness of digital halal management systems provides an important organizational foundation for ensuring that technological innovation remains aligned with halal governance requirements while simultaneously encouraging product and process innovation (Abdul Rejab & Azizan, 2026). Innovation orientation strengthens organizational readiness by fostering a proactive culture that encourages experimentation, organizational learning, and the continuous exploration of new technologies capable of improving business competitiveness. Innovation-oriented firms are more likely to transform digital resources into sustainable competitive advantages because they continuously adapt their strategies and operational practices to changing technological and market conditions (Jaaffar et al., 2024).

The interaction among digital capability, halal awareness, and innovation orientation creates a complementary organizational ecosystem that enhances AI readiness within Halal SMEs. Rather than functioning independently, these strategic dimensions reinforce one another in enabling organizations to adopt AI while maintaining compliance with halal principles and responding effectively to evolving market demands. Integrating these three perspectives provides a more comprehensive conceptual foundation for explaining AI readiness in Halal SMEs than approaches that emphasize technological capability in isolation.

Although the literature on Artificial Intelligence (AI), digital transformation, and Small and Medium-sized Enterprises (SMEs) has expanded considerably in recent years, significant theoretical gaps remain regarding the organizational determinants of AI readiness within the context of Halal SMEs. Existing studies on AI readiness have primarily concentrated on identifying generic technological, organizational, and managerial factors that influence AI adoption across SMEs without explicitly considering the distinctive characteristics of halal-oriented enterprises or the strategic role of halal-related organizational values (Aldhafferi et al., 2024). Research focusing on Halal SMEs has predominantly emphasized digital business ecosystems, organizational performance, and digital transformation, with limited attention devoted to explaining how these organizations develop readiness to successfully implement AI technologies (Suhartanto et al., 2026).

Previous investigations have generally examined digital capability, halal-related dimensions, and innovation capability as separate constructs, resulting in fragmented theoretical explanations that fail to capture their complementary influence on AI readiness. Consequently, there remains a lack of an integrated conceptual perspective that explains how digital capability, halal awareness, and innovation orientation collectively strengthen organizational preparedness for AI-driven transformation. This fragmentation limits the development of comprehensive theoretical frameworks capable of guiding both future empirical investigations and managerial decision-making in halal business environments. Recent reviews of AI adoption in SMEs have likewise highlighted the need for context-specific conceptual models that account for sectoral characteristics and organizational heterogeneity

rather than relying on universal readiness frameworks (Oldemeyer et al., 2025). The intersection between AI readiness and halal business principles remains substantially underexplored despite the rapid digitalization of the global halal economy. Therefore, synthesizing the existing literature through an integrated conceptual lens is essential to bridge these fragmented streams of research and to advance a more holistic understanding of AI readiness within Halal SMEs. This study addresses this gap by systematically integrating insights from the AI readiness, digital capability, halal management, and innovation orientation literature to establish a comprehensive conceptual foundation for future empirical research.

Given the fragmented body of knowledge concerning Artificial Intelligence (AI) readiness within Halal SMEs, this study aims to develop a comprehensive conceptual understanding of how digital capability, halal awareness, and innovation orientation collectively shape organizational readiness for AI adoption. Rather than examining these organizational dimensions independently, this study seeks to synthesize existing evidence and establish an integrated conceptual framework that explains their complementary roles in facilitating AI-driven digital transformation.

The study is grounded in the premise that AI readiness represents a multidimensional organizational capability requiring the alignment of technological resources, organizational competencies, and context-specific strategic values. Through a systematic review of the relevant literature, this research intends to identify the principal theoretical relationships among digital capability, halal awareness, innovation orientation, and AI readiness while highlighting emerging patterns and unresolved conceptual issues across previous studies. This objective responds to recent scholarly calls for more context-sensitive AI readiness frameworks that recognize the distinctive characteristics and resource constraints of SMEs rather than relying on generalized organizational models (Aish & Noor, 2025).

The study seeks to extend current discussions by incorporating the unique institutional and ethical characteristics of the halal business ecosystem into the broader AI readiness literature. In doing so, the proposed conceptual framework is expected to provide a stronger theoretical foundation for understanding AI readiness in Halal SMEs while offering directions for future empirical validation. The study also aims to assist researchers in identifying promising research avenues concerning AI adoption within halal-oriented enterprises and other value-based business environments. Moreover, the conceptual synthesis may support practitioners and policymakers in designing organizational strategies that simultaneously strengthen digital transformation and preserve halal integrity. This research aspires to enrich the growing body of literature on AI readiness by integrating technological, organizational, and halal-specific perspectives into a unified conceptual explanation that is particularly relevant to Halal SMEs (Saleem et al., 2024; Azwar et al., 2025).

This study contributes to the growing body of knowledge on Artificial Intelligence (AI) readiness by proposing an integrated conceptual perspective that specifically addresses the organizational context of Halal Small and Medium-sized Enterprises (SMEs). Unlike previous studies that have predominantly examined AI adoption through technological or organizational lenses independently, this review synthesizes evidence from digital capability, halal awareness, and innovation orientation into a unified framework for explaining AI readiness. By positioning these three organizational dimensions as complementary rather than isolated determinants, the study advances a more holistic theoretical understanding of how Halal SMEs can prepare for AI-driven digital transformation. Furthermore, this study extends the AI readiness literature by incorporating halal-specific organizational values, an aspect that has received relatively limited attention despite the rapid expansion of the global halal economy (Mariani et al., 2023). The proposed conceptual integration also responds to recent scholarly recommendations for

developing context-sensitive AI frameworks that reflect the heterogeneous characteristics of SMEs operating in specialized industrial ecosystems (Kraus et al., 2023).

From a theoretical perspective, the study provides a structured synthesis that may serve as a foundation for future empirical research examining causal relationships among digital capability, halal awareness, innovation orientation, and AI readiness. From a practical perspective, the findings offer strategic insights for SME managers seeking to strengthen organizational preparedness while maintaining halal compliance during digital transformation initiatives. In addition, the conceptual framework may support policymakers and halal industry stakeholders in designing capacity-building programs that simultaneously promote technological advancement and sustainable halal governance. By consolidating fragmented streams of literature into a coherent conceptual model, this study contributes to narrowing the existing gap between AI readiness research and halal business management.

The proposed framework is expected to facilitate future theory development and encourage empirical validation across diverse halal SME contexts and emerging digital economies (Bresciani et al., 2024).

B. METHODS

This study employed a literature review approach to develop a comprehensive conceptual understanding of Artificial Intelligence (AI) readiness within the context of Halal Small and Medium-sized Enterprises (SMEs). The review was designed to systematically identify, evaluate, synthesize, and interpret existing scholarly knowledge relevant to the research objectives. The primary purpose of this approach was to integrate fragmented theoretical perspectives into a coherent conceptual framework that explains the relationships among digital capability, halal awareness, innovation orientation, and AI readiness.

The review focused exclusively on peer-reviewed academic publications to ensure the credibility, rigor, and reliability of the synthesized evidence. Relevant publications were identified through internationally recognized scientific databases containing high-quality journal articles in the fields of artificial intelligence, digital transformation, innovation management, entrepreneurship, and halal business. The literature selection process emphasized studies published in recent years to capture the latest theoretical developments and emerging discussions concerning AI adoption and organizational readiness. Articles were screened according to their relevance to the research topic, conceptual contribution, methodological quality, and consistency with the objectives of this study. Publications that primarily discussed AI implementation, digital capability, innovation orientation, halal management, organizational readiness, and SME digital transformation were prioritized during the selection process. After the initial identification stage, potentially relevant studies were carefully reviewed to determine their suitability for inclusion in the conceptual analysis. Each selected article was examined to identify its theoretical foundations, principal constructs, research context, and major findings.

The extracted information was then organized into thematic categories reflecting the central concepts investigated in this study. Thematic synthesis was subsequently employed to compare similarities, identify differences, recognize recurring patterns, and reveal conceptual relationships across the selected body of literature. This analytical process enabled the identification of complementary perspectives as well as unresolved issues that continue to characterize the current state of research. Rather than statistically aggregating empirical findings, the review emphasized conceptual integration and theoretical interpretation to construct a more comprehensive explanation of AI readiness in Halal SMEs. Particular

attention was devoted to examining how organizational capabilities interact to facilitate digital transformation within halal-oriented business environments.

The synthesis also explored the extent to which existing theoretical perspectives could collectively explain organizational preparedness for AI adoption while preserving halal values and organizational sustainability. Through this integrative analysis, fragmented streams of literature were consolidated into a unified conceptual perspective that reflects the multidimensional nature of AI readiness. The resulting conceptual framework represents a theoretical synthesis derived from the collective insights of previous scholarly works rather than from primary empirical observations.

This approach provides a robust conceptual foundation for future empirical investigations examining causal relationships among the proposed constructs. The literature review serves not only as a mechanism for summarizing existing knowledge but also as a systematic process for advancing theoretical understanding and generating an integrated framework capable of supporting subsequent research on AI readiness within Halal SMEs.

C. RESULTS AND DISCUSSION

1. Artificial Intelligence Readiness in Halal SMEs is a Multidimensional Organizational Capability

The literature review demonstrates that Artificial Intelligence readiness in Halal Small and Medium-sized Enterprises extends beyond the availability of advanced digital technologies. The findings indicate that AI readiness represents a multidimensional organizational capability that emerges from the interaction of technological, managerial, organizational, and strategic dimensions. Organizations do not achieve AI readiness solely by investing in digital infrastructure or acquiring intelligent systems. Instead, they cultivate readiness by developing internal capabilities that enable them to integrate artificial intelligence into everyday business activities.

The review identifies organizational leadership as an essential driver that establishes strategic direction and encourages the adoption of AI-enabled business practices. It also reveals that organizational culture shapes employees' willingness to embrace technological change and continuous learning. Human resource competence further strengthens organizational preparedness by enabling employees to understand, operate, and continuously improve AI-based applications. Effective knowledge management also supports AI readiness by facilitating knowledge sharing, organizational learning, and continuous capability development. The findings further show that organizational flexibility enables firms to respond rapidly to technological developments and changing market conditions.

Strategic planning also contributes to AI readiness by aligning artificial intelligence initiatives with long-term organizational objectives. Resource availability represents another important component because organizations require sufficient financial, technological, and human resources to sustain AI implementation. Decision-making processes also become more effective when organizations integrate data-driven insights into managerial practices.

The review further indicates that AI readiness depends on the organization's ability to coordinate multiple internal functions rather than optimizing isolated operational activities. In the context of Halal SMEs, organizational readiness also requires the integration of business objectives with halal values and operational integrity. This integration enables organizations to pursue technological innovation while maintaining consistency with halal-oriented business principles.

The findings therefore portray AI readiness as an organizational condition that combines technological preparedness with managerial capability and strategic alignment. Such

readiness develops gradually through continuous organizational learning and capability enhancement rather than through one-time technology adoption. The literature consistently suggests that organizations with stronger internal capabilities demonstrate greater capacity to adapt to AI-driven transformation.

AI readiness should be understood as a dynamic organizational capability that evolves alongside technological advancement, organizational maturity, and strategic development. The review establishes that Artificial Intelligence readiness in Halal SMEs constitutes a comprehensive organizational capability that integrates technological resources, human competencies, organizational processes, strategic direction, and halal-oriented values into a unified foundation for sustainable digital transformation.

2. Digital Capability Serves as the Primary Enabler of AI Readiness

Digital capability as the primary organizational enabler that establishes the foundation for Artificial Intelligence readiness in Halal Small and Medium-sized Enterprises. The findings indicate that organizations with stronger digital capabilities demonstrate greater preparedness to integrate artificial intelligence into their operational and strategic activities. Digital capability enables organizations to utilize digital technologies efficiently while continuously adapting to evolving technological environments. The review reveals that AI readiness depends not only on the availability of digital infrastructure but also on the organization's ability to manage, integrate, and optimize digital resources.

Organizations strengthen their AI readiness by developing digital competencies across managerial, operational, and technical functions. The findings also show that effective digital capability enhances organizational responsiveness to technological innovation and accelerates digital transformation processes. Organizations with advanced digital capabilities improve their ability to collect, process, and utilize data for more informed and intelligent decision-making. Digital capability further enables organizations to redesign business processes that support the implementation of AI-driven applications.

The review demonstrates that organizations continuously improve AI readiness when they invest in digital skills, organizational learning, and technology integration rather than focusing solely on hardware acquisition. Internal collaboration also becomes more effective because digital capability facilitates communication, knowledge sharing, and coordination among organizational units. The findings further indicate that digital capability reduces organizational resistance to technological change by fostering confidence in the adoption of new digital solutions. Organizations that continuously strengthen their digital capability also develop greater flexibility in responding to market dynamics and technological disruption.

This capability enables firms to integrate emerging AI technologies into existing organizational processes with lower operational complexity and higher implementation efficiency. In the context of Halal SMEs, digital capability supports the modernization of business operations while preserving organizational consistency and operational effectiveness. The review therefore positions digital capability as a strategic organizational resource that facilitates sustainable technological transformation rather than merely supporting digital operations. AI readiness consequently develops through the continuous accumulation of digital knowledge, technological competence, organizational learning, and managerial commitment. The findings consistently demonstrate that organizations with mature digital capabilities possess stronger adaptive capacity and greater confidence in implementing AI-driven innovations. The literature establishes that digital capability functions as the principal organizational mechanism that enables Halal SMEs to build, sustain, and continuously enhance their readiness for Artificial Intelligence adoption.

3. Halal Awareness Strengthens Organizational Readiness through Ethical and Regulatory Alignment

The review highlights halal awareness as a strategic organizational orientation that reinforces Artificial Intelligence readiness by aligning technological transformation with ethical responsibility and halal governance. Rather than functioning merely as an instrument for regulatory compliance, halal awareness shapes the organizational mindset that guides strategic and operational decisions during digital transformation. Organizations with strong halal awareness consistently integrate halal principles into business planning, operational procedures, and quality management practices before introducing advanced digital technologies. This orientation creates a stable organizational environment in which technological innovation develops alongside ethical accountability. The findings reveal that organizations strengthen stakeholder confidence when they embed halal values into their digital transformation initiatives. Such integration encourages employees to perceive AI adoption as a mechanism for improving organizational performance without compromising halal integrity. Halal awareness also encourages managers to evaluate technological decisions from both operational and ethical perspectives.

This balanced approach reduces uncertainty associated with the implementation of emerging technologies and promotes more responsible innovation practices. The review further demonstrates that organizations with higher levels of halal awareness establish clearer governance mechanisms for managing AI-related activities. These governance practices improve organizational consistency by ensuring that technological initiatives remain aligned with institutional objectives and halal commitments. In addition, halal awareness encourages continuous monitoring of organizational processes to preserve transparency, accountability, and operational reliability throughout digital transformation.

The findings also indicate that organizations become more resilient because halal-oriented values provide a stable foundation for adapting to technological change without weakening organizational identity. This capability allows Halal SMEs to maintain competitive performance while responding to increasingly dynamic digital environments. Instead of creating constraints, halal awareness supports organizational modernization by providing ethical direction for technological development and business innovation.

The review therefore identifies halal awareness as a strategic capability that enhances organizational preparedness through value-driven decision-making rather than through technological investment alone. As organizations continuously strengthen this awareness, they cultivate greater confidence in implementing AI-based solutions that remain consistent with halal business principles. The result demonstrates that halal awareness transforms ethical commitment into an organizational capability that supports sustainable AI readiness, strengthens institutional legitimacy, and reinforces long-term organizational resilience within the halal business ecosystem.

4. Innovation Orientation Facilitates Organizational Adaptability for AI Adoption

A recurring pattern emerging from the synthesized literature demonstrates that innovation orientation determines how effectively Halal SMEs respond to the increasing complexity of Artificial Intelligence adoption. Organizations that cultivate an innovation-oriented culture exhibit stronger willingness to experiment with new technologies, redesign existing business models, and pursue continuous organizational improvement. Rather than treating technological change as a disruptive force, these organizations recognize it as an

opportunity to generate long-term strategic value. Innovation orientation encourages managers to explore alternative solutions before technological challenges become operational barriers.

This proactive behavior accelerates organizational adaptation and reduces hesitation toward AI implementation. Employees also become more receptive to organizational change because innovation-oriented environments encourage creativity, collaboration, and continuous knowledge exchange. Such conditions enable organizations to transform technological uncertainty into opportunities for organizational learning and capability development. Instead of relying on routine operational practices, innovation-oriented firms continuously evaluate existing processes and introduce improvements that enhance organizational effectiveness.

This continuous refinement strengthens the organization's capacity to integrate AI into decision-making, customer engagement, production, and service delivery. The literature further suggests that innovation orientation enhances strategic agility by enabling organizations to anticipate technological trends rather than merely reacting to external pressures. As organizational experimentation becomes part of everyday practice, firms gradually develop greater confidence in adopting increasingly sophisticated digital technologies. Innovation orientation also supports the development of flexible organizational structures that accommodate technological evolution without disrupting business continuity. In the context of Halal SMEs, this adaptive capability allows organizations to modernize their operations while preserving organizational stability and maintaining their distinctive market identity.

The transformation therefore extends beyond technological improvement and encompasses changes in organizational behavior, managerial thinking, and strategic priorities. Organizations that continuously nurture innovation-oriented values become better equipped to absorb new knowledge, reconfigure internal resources, and respond to emerging market opportunities. This evolutionary process reinforces organizational resilience by enabling firms to sustain competitiveness despite rapid technological advancement. The synthesized literature demonstrates that innovation orientation functions as the driving force behind organizational adaptability, allowing Halal SMEs to convert technological opportunities into sustainable AI readiness and long-term organizational growth.

5. The Integration of Digital Capability, Halal Awareness, and Innovation Orientation Establishes a Comprehensive AI Readiness Framework for Halal SMEs

Artificial Intelligence readiness in Halal Small and Medium-sized Enterprises emerges from the collective interaction of digital capability, halal awareness, and innovation orientation rather than from the influence of any single organizational factor. Each construct contributes a distinct organizational function while simultaneously reinforcing the effectiveness of the others. Digital capability provides the technological and operational foundation that enables organizations to utilize intelligent systems efficiently. Halal awareness supplies the ethical and governance framework that directs technological transformation toward responsible and value-consistent implementation. Innovation orientation stimulates continuous adaptation by encouraging organizations to explore new opportunities, redesign business processes, and embrace organizational learning.

The convergence of these three capabilities creates an integrated organizational environment that supports sustainable AI adoption. Within this environment, technological competence becomes more effective because organizations possess clear ethical guidance and adaptive managerial behavior. Likewise, ethical commitment becomes more practical because digital capability provides the necessary technological infrastructure to operationalize organizational values. Innovation orientation further strengthens this interaction by connecting

technological resources with organizational flexibility and long-term strategic renewal. As these organizational capabilities develop simultaneously, Halal SMEs become increasingly capable of responding to technological disruption without compromising operational effectiveness or institutional identity. The integrated relationship also enables organizations to balance technological advancement with business sustainability and stakeholder expectations. Instead of operating independently, the three capabilities form an interdependent system in which improvements in one dimension reinforce development in the remaining dimensions. This reciprocal relationship accelerates organizational readiness and enhances the overall effectiveness of AI implementation.

The literature further suggests that organizations achieve more sustainable digital transformation when technological investment, ethical commitment, and innovation capability evolve in a coordinated manner. Such coordination minimizes organizational fragmentation and strengthens the alignment between strategic objectives and operational execution. The resulting framework portrays AI readiness as a dynamic organizational capability that continuously evolves through the interaction of technological resources, organizational values, and adaptive innovation practices. This integrated perspective also extends the understanding of AI readiness beyond conventional technology adoption by incorporating organizational, ethical, and strategic dimensions into a unified conceptual structure. The synthesized framework offers a comprehensive explanation of how Halal SMEs can systematically develop their readiness for Artificial Intelligence adoption while preserving competitive performance, organizational resilience, and halal-oriented business integrity.

The present finding extends the current understanding of Artificial Intelligence (AI) readiness by demonstrating that AI readiness in Halal SMEs represents a multidimensional organizational capability rather than a purely technological condition. This interpretation aligns with Pingali et al. (2023), who conceptualized digital readiness as a comprehensive organizational construct encompassing technological infrastructure, managerial capability, organizational resources, and strategic preparedness instead of isolated digital assets.

The present study advances their perspective by explicitly positioning AI readiness as an integrated organizational capability that simultaneously combines technological, managerial, human, and organizational dimensions within the specific context of Halal SMEs. Likewise, the proposed interpretation corresponds with Maharani (2023), who argued that organizational readiness for AI adoption depends on strategic alignment, leadership commitment, human capital development, organizational culture, and institutional support rather than technological investment alone. Nevertheless, the current study broadens this argument by emphasizing that these dimensions operate collectively as an interconnected organizational capability instead of independent organizational attributes.

The findings also resonate with Motjolopane and Chanza (2023), who suggested that SMEs require multiple dimensions of digital transformation readiness before successfully implementing big data analytics and AI technologies. In contrast to their emphasis on digital transformation dimensions, the present study develops a broader conceptual explanation by portraying AI readiness as an evolving organizational capability that continuously develops through organizational learning, strategic adaptation, managerial coordination, and capability enhancement. The present finding supports recent conceptual work proposing multidimensional AI readiness assessment models that integrate technological, organizational, environmental, and human dimensions into a unified readiness framework. Rather than treating AI readiness as a static prerequisite for technology adoption, this study argues that organizational readiness evolves dynamically through continuous interactions among leadership, organizational processes, human competencies, technological resources, and

strategic management. This study contributes to the growing AI readiness literature by extending previous multidimensional readiness models into a more comprehensive organizational capability perspective specifically designed to explain AI preparedness within Halal SMEs.

Digital capability functions as the primary organizational enabler of Artificial Intelligence (AI) readiness because it equips Halal SMEs with the technological, managerial, and operational competencies required for sustainable AI implementation. This finding is consistent with Zhang et al. (2024), who argued that digital capability significantly strengthens SME digital transformation by improving organizational agility and enhancing managerial support for technological change. However, while Zhang et al. primarily emphasized digital transformation outcomes, the present study extends this perspective by identifying digital capability as the foundational mechanism through which organizations progressively build AI readiness before large-scale AI deployment occurs.

The current finding also corroborates the empirical evidence reported by the European SME study of AI adoption, which demonstrated that digital capability represents one of the strongest predictors of successful AI adoption, whereas external environmental support contributes only marginally to adoption decisions (Technology in Society, 2024). The present study advances this argument by explaining that digital capability not only facilitates AI adoption but also continuously enhances organizational preparedness through capability accumulation, organizational learning, and technological integration. Furthermore, the finding complements the digital readiness framework proposed by Pingali et al., who conceptualized digital readiness as a multidimensional organizational resource supporting long-term competitiveness in emerging-market SMEs.

Unlike their broader digital readiness construct, the present study specifically positions digital capability as the principal organizational driver that transforms digital resources into AI readiness within the distinctive institutional environment of Halal SMEs. This interpretation further suggests that investments in digital infrastructure alone remain insufficient unless organizations simultaneously strengthen managerial competence, employee digital skills, and organizational coordination. The present study broadens previous digital transformation literature by proposing that digital capability should be understood as a dynamic organizational capability that continuously develops through organizational learning, technological integration, and strategic adaptation, thereby serving as the fundamental prerequisite for sustainable AI readiness in Halal SMEs.

Increasing attention to ethical governance has fundamentally changed how scholars conceptualize organizational readiness for Artificial Intelligence (AI), particularly within faith-based business ecosystems. The present finding reflects this shift by demonstrating that halal awareness functions not merely as regulatory compliance but as an organizational capability that guides responsible AI readiness through ethical alignment, governance consistency, and value-driven decision-making. This interpretation is comparable to the findings of Susiang et al. (2024), who argued that halal integrity strengthens the implementation of Halalan Tayyiban strategies because ethical orientation improves strategic coherence and organizational competitiveness. Nevertheless, the current study advances their argument by extending halal integrity beyond operational strategy and positioning halal awareness as a foundational capability that prepares organizations for AI-driven transformation.

A similar perspective emerges from Putri et al. (2025), who found that internal organizational initiative exerts a stronger influence on halal standard adoption than external regulatory pressure. While their study concentrated on halal standard implementation, the present research broadens this perspective by suggesting that internally embedded halal

awareness also enhances organizational preparedness for adopting emerging digital technologies, including AI. Furthermore, the findings complement the multidimensional readiness model proposed by Tuhuteru and Iqbal (2024), who emphasized that knowledge, institutional support, and halal awareness jointly improve MSMEs' readiness for halal certification. In contrast, the present study argues that halal awareness contributes beyond certification readiness because it establishes ethical governance mechanisms that support transparent, accountable, and sustainable AI implementation.

This broader interpretation indicates that organizations possessing strong halal awareness are better equipped to integrate technological innovation without weakening stakeholder trust or compromising institutional legitimacy. The present study expands existing halal management literature by integrating ethical governance into the AI readiness discourse and proposing that halal awareness represents a strategic organizational capability rather than a compliance-oriented organizational attribute. Such an interpretation enriches the theoretical foundation of AI readiness by demonstrating that sustainable AI adoption within Halal SMEs depends not only on technological preparedness but also on the organization's ability to institutionalize ethical values throughout its digital transformation journey.

Rapid technological advancement has fundamentally increased the importance of organizational adaptability, making innovation orientation an essential capability for firms seeking to achieve sustainable Artificial Intelligence (AI) readiness. The present finding demonstrates that innovation orientation enables Halal SMEs to respond proactively to technological change by fostering experimentation, organizational learning, and continuous business model renewal rather than merely encouraging product innovation. This interpretation is broadly consistent with Ho et al. (2024), who found that entrepreneurial orientation strengthens dynamic capabilities that subsequently improve organizational innovation within SMEs. However, whereas their study primarily emphasized the mediating role of dynamic capabilities in enhancing innovation performance, the present study extends this perspective by identifying innovation orientation as a strategic organizational mechanism that directly strengthens AI readiness through continuous organizational adaptation.

A comparable argument was advanced by Jaaffar et al. (2024), who reported that innovative mindset and innovative behavior significantly enhance innovation performance and competitive advantage among halal SME owner-managers. Nevertheless, the present study moves beyond innovation performance by demonstrating that innovation orientation also prepares organizations to integrate emerging AI technologies while maintaining long-term organizational resilience. The findings further correspond with the evidence reported by Isa et al. (2024), who concluded that entrepreneurial orientation, knowledge management, and knowledge sharing collectively reinforce innovation capability and organizational performance in Indonesian SMEs. Unlike their performance-oriented perspective, the present study conceptualizes innovation orientation as a dynamic organizational capability that continuously reshapes managerial thinking, organizational flexibility, and strategic responsiveness before AI technologies are fully implemented.

This interpretation suggests that organizations possessing stronger innovation orientation are more capable of transforming technological uncertainty into strategic opportunities through continuous experimentation and organizational learning. The present study contributes to the AI readiness literature by proposing that innovation orientation should not be viewed solely as a driver of innovation outcomes but rather as a strategic adaptive capability that enables Halal SMEs to sustain AI readiness amid rapidly evolving technological environments. Such a perspective enriches existing dynamic capability theory by positioning

innovation orientation as one of the central organizational antecedents that links adaptive behavior with sustainable AI transformation.

A notable characteristic of the existing Artificial Intelligence (AI) readiness literature is its tendency to examine technological, organizational, and strategic determinants as separate constructs rather than as mutually reinforcing organizational capabilities. The present study addresses this conceptual fragmentation by proposing that digital capability, halal awareness, and innovation orientation collectively establish an integrated AI readiness framework for Halal SMEs. This integrative perspective partially aligns with Badghish and Soomro (2024), who employed the Technology–Organization–Environment framework to demonstrate that successful AI adoption depends on the simultaneous interaction of technological resources, organizational readiness, and environmental conditions. While their framework primarily explains AI adoption from a technology management perspective, the present study extends this view by incorporating halal awareness as an ethical governance capability and innovation orientation as an adaptive strategic capability within a unified readiness model.

The present findings also complement the digital readiness framework developed by Nagara and Mubaroq (2026), who concluded that AI adoption requires comprehensive digital preparedness beyond basic technological infrastructure. Nevertheless, the current study advances their conceptualization by arguing that digital readiness alone cannot adequately explain AI readiness unless organizations simultaneously cultivate ethical commitment and continuous innovation capability. Furthermore, the integrated perspective resonates with recent evidence reported by Candraningtyas and Rahmawati (2025), who demonstrated that digital capability and halal orientation jointly contribute to sustainable MSME performance through relational and institutional mechanisms rather than through direct technological effects. Unlike their performance-oriented framework, the present study conceptualizes these capabilities as complementary antecedents that jointly generate organizational readiness before AI implementation occurs.

This synthesis therefore indicates that AI readiness emerges from the continuous interaction among technological competence, ethical governance, and organizational adaptability rather than from the dominance of a single organizational resource. Such an interpretation reinforces the dynamic capability perspective by explaining that sustainable AI transformation depends on the organization's ability to orchestrate multiple strategic capabilities simultaneously in response to technological change. The proposed framework offers a more comprehensive theoretical explanation of AI readiness in Halal SMEs by integrating digital capability, halal awareness, and innovation orientation into a coherent organizational capability system that supports responsible, adaptive, and sustainable AI adoption.

D. CONCLUSION

This study examined Artificial Intelligence (AI) readiness in Halal Small and Medium-sized Enterprises (SMEs) through a comprehensive synthesis of the existing literature and developed an integrated conceptual understanding of the factors shaping organizational preparedness for AI adoption. The findings demonstrate that AI readiness represents a multidimensional organizational capability rather than a simple measure of technological availability. The study identifies digital capability as the primary foundation that enables organizations to establish the technological competence and managerial capacity required for AI implementation. The findings also reveal that digital capability continuously strengthens organizational preparedness through learning, technological integration, and capability development. In addition, the study shows that halal awareness extends beyond regulatory

compliance by functioning as an ethical governance capability that supports responsible organizational transformation. Halal awareness enables organizations to maintain transparency, accountability, and stakeholder trust while adopting emerging AI technologies.

The findings further indicate that innovation orientation enhances organizational adaptability by encouraging continuous learning, experimentation, and strategic renewal in response to technological change. Organizations with stronger innovation orientation therefore become more capable of responding proactively to dynamic business environments. More importantly, the study demonstrates that these three organizational capabilities do not operate independently. Instead, they interact continuously to establish a comprehensive AI readiness framework for Halal SMEs. Digital capability provides the technological foundation for organizational transformation. Halal awareness ensures that technological advancement remains aligned with ethical values and halal principles. Innovation orientation strengthens organizational flexibility and strategic responsiveness throughout the AI adoption process.

The interaction among these capabilities creates a balanced organizational environment that supports sustainable AI implementation. This integrated perspective offers a broader explanation of AI readiness than approaches that examine technological, organizational, or ethical factors separately. The study therefore contributes to the development of AI readiness literature by proposing a holistic organizational capability framework specifically designed for Halal SMEs. The proposed framework also provides practical guidance for SME managers and policymakers seeking to accelerate AI adoption while preserving halal integrity and organizational sustainability.

The study highlights that successful AI transformation requires organizations to develop complementary strategic capabilities instead of relying exclusively on technological investment. Future research may empirically validate the proposed conceptual framework across different industrial sectors, organizational sizes, and national contexts. Such investigations will strengthen the generalizability of the framework and provide deeper insights into the evolving relationship between AI readiness, organizational capability development, and sustainable competitiveness within the global halal economy.

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