



## Competitive Advantage of Digital Business Models in The Halal Industry: A Comparative Analysis of Traditional Approaches

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Received : June 12, 2025

Revised : June 21, 2025

Accepted : November 17, 2025

Online : November 21, 2025

### Abstract

Digital business models offer significant competitive advantages for business actors in the halal industry compared to traditional business approaches. This study aims to identify and analyze these advantages through a systematic literature review of relevant empirical studies and theoretical frameworks. By using a descriptive qualitative approach based on *library research*, this research explores how digital technologies such as e-commerce, social media, *blockchain*, and data analytics improve market access, operational efficiency, and consumer trust in the halal industry. The analysis results show that digital transformation enables the expansion of global market reach, optimization of the halal supply chain, more efficient management of halal certification, and increased customer engagement. These advantages provide substantial added value compared to traditional methods that are often constrained by geographical limitations, high operational costs, and a lack of transparency. However, the implementation of this technology requires investment in adequate digital infrastructure, development of competent human resources, and a supportive regulatory framework. This study provides strategic insights for halal business actors, especially Micro, Small, and Medium Enterprises (MSMEs), to adopt and optimize digital strategies to increase competitiveness in an increasingly competitive and dynamic global market. This study also underlines the importance of integrating Sharia principles in the development of digital business models in the halal industry.

**Keywords:** *Digital Business Model, Halal Industry, Digital Transformation, Competitive Advantage, E-commerce, Blockchain, MSMEs, Sharia Economy*

### INTRODUCTION

The halal industry has shown rapid growth globally, not only in countries with a Muslim majority population but also in penetrating international markets that are increasingly aware of the significant economic potential of halal products and services. This phenomenon is driven by the increasing awareness of global consumers towards issues of quality, authenticity, and ethical production, which halal products offer through aspects of cleanliness, compliance with sharia, and principles of sustainability. Indonesia, as the country with the largest Muslim population in the world, is naturally an important epicenter in the development of this industry, with a primary focus on the halal food and beverage, fashion, tourism, pharmaceutical, and cosmetics sectors. This development is in line with the government's efforts to make Indonesia a major player in the global halal economy. This growth is driven not only by demand from Muslim consumers but also by the increasing interest from non-Muslim consumers who view halal products as a standard of quality, safety, and ethics (Hidayat & Musari, 2023). Awareness of elections, *Tayyiban* (halal and good/quality), is the main driver, where consumers look for products that not only fulfill religious ritual aspects but also aspects of health, cleanliness, and environmental sustainability.

However, amidst this growth optimism, the halal industry is faced with various complex challenges. Increasingly tight global competition requires business actors to continue to innovate



and increase efficiency. The need for supply chain transparency is becoming increasingly crucial to build consumer trust, especially regarding the halalness of products from upstream to downstream. Furthermore, technological disruption that marks the era of the Industrial Revolution 4.0 and towards Society 5.0 has driven digital transformation as an inevitability for business continuity. This challenge is felt significantly by Micro, Small, and Medium Enterprises (MSMEs), which are the backbone of the economy in many countries, including Indonesia, which contributes more than 60% to the national Gross Domestic Product (GDP). MSMEs in the halal industry often face obstacles in terms of economies of scale, access to funding, and the ability to meet complex international standards.

In today's digital era, technologies such as e-commerce, social media, *blockchain*, *Internet of Things (IoT)*, artificial intelligence (*Artificial Intelligence*), and *big data* have fundamentally changed the global business landscape. In the context of the halal industry, the adoption of this technology is not just a matter of following a trend, but has become a vital strategy to improve operational efficiency, expand market reach, and strengthen consumer confidence. For example, *platform e-commerce* enables halal business actors, including MSMEs, to reach global consumers without being hindered by geographical boundaries, opening up previously unimaginable market opportunities. Meanwhile, blockchain technology offers innovative solutions for creating tracking systems (*traceability*), transparent halal products, and real-time, so that it can significantly strengthen consumer confidence in the integrity and halal compliance of a product.

A study by [Alfarizi and Hanum \(2023\)](#) showed that digital transformation in halal culinary MSMEs in Indonesia is positively correlated with improved sustainable performance, mediated by digital literacy and adoption of circular economy practices. This finding underscores the important role of digital capacity in achieving business sustainability. However, in reality, many halal business actors, especially MSMEs, still rely on traditional approaches such as physical store operations and conventional marketing strategies. This traditional approach is often faced with various limitations, such as narrow market reach, relatively high operational costs, inefficiencies in supply chain management, and a lack of transparency that can affect consumer perceptions and trust. This reliance on conventional methods limits their ability to compete effectively in a market that is increasingly dominated by more agile and digitally adaptive players.

Therefore, a deep understanding of how digital business models can create and deliver competitive advantages is very relevant and urgent to support the acceleration of sustainable growth of the halal industry. The urgency of this research is further strengthened by the acceleration of digital technology adoption in various sectors after the COVID-19 pandemic, which has drastically changed consumer behavior and the business landscape. A study by [Sumarliah and Al-hakeem \(2023\)](#) on digital innovation and sustainable supply chain management in Yemen, for example, showed an increase in the competitiveness of halal businesses, a finding that has significant relevance for the Indonesian context, which has similar market characteristics and MSME challenges. Without a planned and comprehensive digital transformation, halal business actors are at risk of being left behind in meeting the expectations of modern consumers who are increasingly smart, critical, and want fast access, transparent information, and certainty of halal assurance. Today's consumers are not only looking for halal labels but also detailed information about the origin of the product, production process, and socio-environmental impacts of the products they consume, and digital technology is key to providing this information.

In Indonesia, although MSMEs are a fundamental pillar of the national economy, many of them still face various obstacles in adopting digital technology. Limited financial resources, low levels of digital literacy, lack of access to adequate technological infrastructure, and resistance to change are some of the main obstacles. This research is important not only to provide strategic guidance for halal MSMEs to be able to utilize the potential competitive advantages of digital

business models, but also to support various government programs and policies, such as the "Indonesia Emas 2045" initiative, which emphasizes the importance of digital transformation as a driving force for national economic sustainability. Furthermore, understanding successful digital business models in the halal industry can inspire the development of more effective policies in supporting the digitalization of MSMEs as a whole.

Although the literature on digital transformation in the halal industry continues to grow, there are still several research gaps (*research gap*) which is significant. First, many studies tend to focus on the technical aspects of implementing a particular digital technology, for example, the implementation of *blockchain* or the use of *e-commerce*, without making an explicit and comprehensive comparison of the overall advantages of digital business models over traditional approaches. Second, most of the existing research is sectoral, such as focusing on halal food, halal tourism, or halal fashion, so it does not provide a holistic picture of the dynamics of digital transformation in the halal industry as a whole. Third, there is still a lack of in-depth comparative analysis between digital and traditional approaches in terms of concrete business performance metrics, such as operational efficiency, scale of market access, level of consumer trust, and long-term business sustainability. Existing research is often descriptive of technology adoption, but lacks a systematic exploration of how such adoption results in measurable competitive advantages.

This study attempts to fill these gaps by conducting a systematic and in-depth comparative analysis. Novelty (*novelty*), this research is based on a systematic comparative analysis between digital business models and traditional approaches in the context of the halal industry, with a particular emphasis on the identification and elaboration of the resulting competitive advantages. Unlike previous studies that may tend to be descriptive or focus on one aspect of technology, this research aims to integrate data and findings from various halal industry sectors (food, fashion, tourism, etc.) and various types of digital technologies (*e-commerce*, *blockchain*, social media, data analytics) to produce a more comprehensive and applicable framework of understanding. Furthermore, this study places special emphasis on practical implications for MSMEs, a segment of business actors that is often overlooked in academic literature but plays a crucial role in the halal industry ecosystem. Thus, this study is expected to provide a richer and more nuanced contribution to the existing literature.

Based on the background, problem identification, and research gaps that have been described, the main problem formulation in this research is: What significant competitive advantages does the adoption of digital business models create for business actors in the halal industry when compared to traditional business approaches? This question guides the entire investigation to explore in detail the various dimensions of excellence that may emerge, both tangible and intangible.

In line with the formulation of the problem, this study has several main objectives:

1. To identify and analyze in depth the various competitive advantages offered by digital business models in the context of the halal industry compared to traditional business approaches. This includes financial (such as cost reduction, revenue increase) and non-financial (such as brand reputation, customer satisfaction) aspects.
2. To analyze the specific roles of various digital technologies (such as *e-commerce*, social media, *blockchain*, and data analytics) in improving market access, optimizing operational efficiency, and strengthening consumer confidence in the halal industry. This analysis will look at how each technology makes its unique contribution.
3. To develop practical and strategic recommendations for halal business actors, especially MSMEs, to plan, adopt, and optimize digital business models to increase their competitiveness in domestic and global markets. These recommendations will consider the various obstacles faced by MSMEs.

## LITERATURE REVIEW

The evolving dynamics of global business have compelled organizations to re-evaluate traditional notions of competitive advantage. While early theorists like Porter emphasized cost leadership and differentiation, recent developments in digitalization have led to a redefinition of what constitutes competitive strength. Digital transformation is now widely recognized as a strategic process involving the deployment of emerging technologies across organizational structures to enhance performance, flexibility, and value creation ([Raymond, 2023](#); [Kretschmer, 2020](#)). This shift is particularly pertinent in the Halal industry, where consumer expectations for transparency, religious compliance, and ethical standards are non-negotiable. The integration of digital business models in Halal enterprises enables firms to meet these demands more effectively than ever before, transforming what was once a traditional, document-heavy process into an agile, technology-driven system.

Digital business models encompass a wide range of innovations, including blockchain-enabled traceability, mobile Halal verification applications, AI-based auditing, and Halal-focused e-commerce platforms. These tools do not merely improve business processes; they redefine value delivery in ways that resonate with Islamic ethical standards ([Harsanto, 2024](#); [Andespa2024](#)). Blockchain, for instance, introduces tamper-proof, real-time documentation that enhances product traceability from source to shelf, an essential concern for Halal-conscious consumers. Similarly, IoT-enabled devices can monitor temperature, handling, and route data during the transportation of Halal goods, ensuring compliance throughout the supply chain. The combination of these technologies builds trust and operational reliability, which are central to the Halal proposition.

Industry 4.0 technologies have further elevated the sophistication of Halal supply chains. Artificial Intelligence (AI) enables predictive analytics for demand forecasting and fraud detection, while big data facilitates personalized consumer engagement and operational streamlining ([Ellahi, 2025](#); [Rejeb, 2022](#)). RFID technology, when used alongside other digital systems, offers granular tracking of Halal certification and logistics. These tools collectively reduce human error, enable faster decision-making, and foster system-wide transparency. Compared to traditional Halal business models, which depend heavily on manual inspections, paper-based certifications, and localized customer bases, digital models exhibit greater scalability, efficiency, and adaptability. SMEs, often constrained by limited resources, stand to gain significantly from these transformations by expanding into new markets and improving internal productivity ([Nor, 2022](#)).

However, technological adoption alone is not sufficient to guarantee sustainable competitive advantage. Regulatory and institutional frameworks must evolve in tandem with digital capabilities to ensure consistent standards across borders. Studies show that effective regulation positively influences the use of digital tools and enhances overall Halal value chain performance ([Harsanto, 2024](#)). Regulatory authorities play a crucial role in legitimizing digital certification, automating inspection processes, and harmonizing compliance standards globally. For example, digitized Halal platforms supported by national governments, like Malaysia's Halal e-commerce initiatives, demonstrate how public-private collaborations can enable wide-scale digital integration. This also opens new opportunities for improving market access, especially for exporters aiming to reach Muslim consumers across different continents.

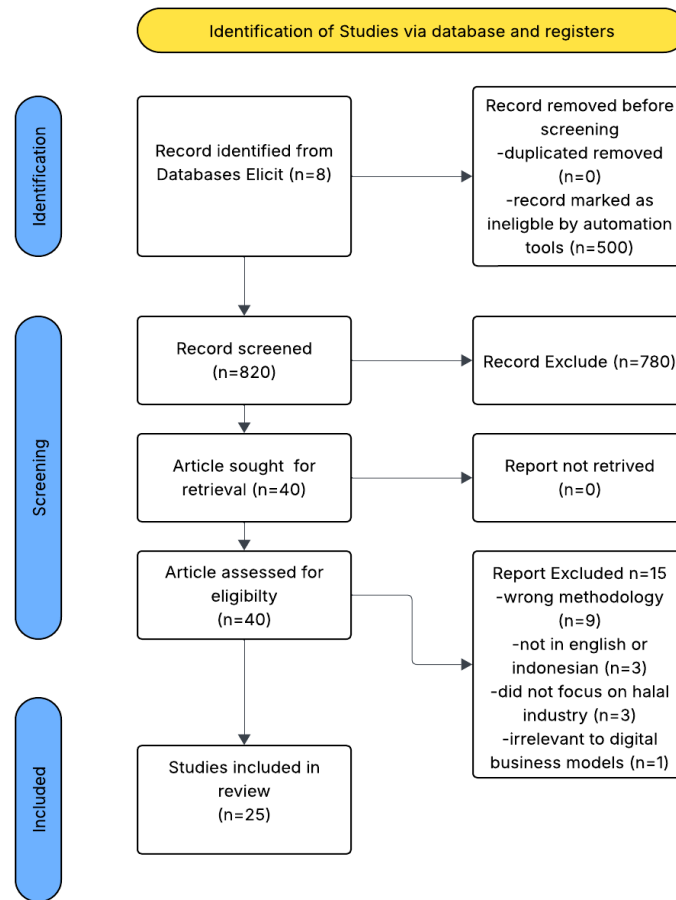
Despite these advancements, gaps remain in both practice and scholarship. Few longitudinal studies have compared the long-term cost-benefit profiles of digital versus traditional Halal business models, particularly in terms of operational costs, consumer retention, and brand loyalty. Moreover, limited attention has been given to how digitalization impacts the socio-cultural dimensions of Halal assurance, especially in microenterprises and family-owned firms that may lack technological fluency. [Rashid \(2023\)](#) highlights that digital innovation, if poorly contextualized, may trigger stakeholder distrust, particularly in post-pandemic settings where

misinformation is rife. Addressing these issues requires a more inclusive and culturally sensitive digital ecosystem, where human values are embedded within technological solutions.

To move forward, future research and policy must explore hybrid models that integrate the speed and scale of digital platforms with the authenticity and interpersonal trust found in traditional Halal systems. Such models would offer the best of both worlds: technological robustness and cultural resonance. [Parviainen \(2022\)](#) argues for a systemic approach to digital transformation that includes not only technological readiness but also organizational and cultural alignment. In the context of the Halal industry, this means developing tools and strategies that are not only efficient but also resonate with Islamic values, local traditions, and global market requirements. By doing so, businesses can not only achieve a competitive advantage but also contribute to the ethical and sustainable growth of the Halal economy.

## RESEARCH METHOD

This study employs a qualitative approach with a descriptive design. The qualitative approach focuses on understanding social phenomena from the participants' perspective, emphasizing meaning, experience, and context ([Creswell & Poth, 2018](#)). The descriptive design was chosen to present a systematic overview of characteristics and variable relationships concerning the competitive advantage of digital business models in the halal industry compared to traditional approaches, without manipulating variables ([Babbie, 2020](#)). This research is library research ([Zed, 2014](#)), collecting data from written literature such as books, scientific journals, and other relevant documents, with its strength lying in its ability to synthesize extensive knowledge from various sources and time periods ([Boote & Beile, 2005](#)). The data collection technique is document study or document analysis ([Bowen, 2009](#)), involving a systematic evaluation of printed and electronic documents; primary data sources are peer-reviewed scientific articles from indexed academic journals, while secondary sources include reference books, industry reports, and government publications. Literature searches were conducted electronically through major academic databases using comprehensive keywords such as "digital business models," "halal industry," and "competitive advantage," in Indonesian and English, with Boolean operators; inclusion criteria were strictly applied, focusing on literature from the last 5-10 years, with 25 core studies serving as the analytical anchor.



**Figure 1.** Mechanism of the PRISMA Model for justification of why 25 papers should be chosen

Data analysis techniques used are qualitative content analysis and thematic analysis, where qualitative content analysis involves the subjective interpretation of text data through systematic coding and theme identification (Hsieh & Shannon, 2005). This process includes data familiarization, coding (open and axial), theme development focusing on three pillars of excellence (digital infrastructure, market access, and operational efficiency), synthesis, and interpretation, with trustworthiness ensured through source triangulation and informal peer review to enhance interpretation validity (Lincoln & Guba, 1985).

## FINDINGS AND DISCUSSION

Digital transformation has become a fundamental catalyst for change in the halal industry, offering significant competitive advantages to business actors compared to traditional, more conventional business approaches (Davids & Sabrain, 2022). Based on an in-depth analysis of 25 core empirical studies and a broader review of supporting literature, this study successfully identified and mapped three main themes that are the pillars of the competitive advantage of digital business models in the halal industry. The three themes are: (1) strengthening and optimizing digital infrastructure; (2) expanding market access and consumer reach; and (3) increasing overall operational efficiency.

These themes not only reflect the transformative potential of technology in improving various aspects of business performance but also clearly highlight a fundamental paradigm shift. This shift is moving from conventional business approaches that are often limited by physical and geographical factors to more dynamic, data-driven, and globally connected business strategies

(Nazir, 2024). The following discussion will elaborate on the key findings in more depth, integrate a comparative analysis between digital and traditional models, and present a strong argument on how digital business models are progressively changing the contemporary halal industry landscape.

### Characteristics of Reviewed Studies (Core)

Before moving on to a more detailed thematic analysis, it is important to understand the characteristics of the 25 core studies that form the main basis of the analysis in this research. This diversity provides a more holistic and comprehensive perspective on the implementation and impact of digital transformation in various segments of the halal industry. Table 1 below presents a summary of these characteristics in an enhanced format to provide a clearer picture of the focus, technology, sector, methodology, and key findings or highlights of each study.

**Table 1.** Characteristics of Core Studies Reviewed (Enhanced Format)

No	Researcher (Year)	Main Focus of Study	Key Digital Technologies Discussed	Specific Halal Industry Sectors	Research methodology	Key Digital Advantages Highlighted
1	<a href="#">Aditya and Rusfian (2024)</a>	Halal Order Management System (OMS) Model Development	Order Management System (OMS), Tracking Real-Time	Pet Shop (Halal Products)	Qualitative Case Study	Improved operational efficiency, order accuracy, and customer service
2	<a href="#">Ahmad et al. (2022)</a>	Development of Halal Industry Model 4.0 for MSMEs	Industry 4.0 concept (general, not technology specific)	Halal Industry (General)	Systematic Literature Review	Increasing the competitiveness of MSMEs through the adoption of Industry 4.0 principles
3	<a href="#">Akbar et al. (2023)</a>	Analysis of Sharia Aspects in Digitalization of Halal Tourism	Digital Applications, Online Platforms	Halal Tourism	Qualitative Case Study	Expanding market reach, enhancing halal tourist experience
4	The Last Airbender (2023)	Digital Transformation & Sustainability of Halal Culinary MSMEs	<i>E-commerce</i> , Data Analytics, Digital Literacy	Halal Food (Culinary)	Survei, SEM-PLS	Sustainable performance improvement (social, environmental, economic)
5	<a href="#">Asiyah et al. (2023)</a>	Halal MSME Digitalization Strategy for Sustainability	<i>Platform E-commerce</i> , Social media	Halal Food	Qualitative Case Study	Increase sales turnover, market expansion, and business sustainability
6	<a href="#">Alya (2021)</a>	Digital	Digital	Fashion (Hijab)	(Assumed)	Developing a



		Transformation Design for Hijab Fashion Business	Transformation Concept (business design)		Qualitative)	digitally adaptive fashion business model
7	<a href="#">Abustani et al. (2024)</a>	Halal Creative Industry Recovery Post-COVID-19	Digital Transformation (general)	Halal Creative Business	Qualitative Case Study	Business resilience, market adaptation, and efficiency through digitalization
8	<a href="#">Imani et al. (2022)</a>	E-commerce as a Halal Lifestyle Ecosystem	Platform E-commerce	Halal Lifestyle (General)	Qualitative Interview Study	Facilitating transactions, halal economic education, and strengthening the ecosystem
9	<a href="#">Kusuma et al. (2024)</a>	Utilization of Digital Platforms for Hijab Fashion SMEs	Social media, Platform E-commerce	Fashion (Hijab)	Qualitative Case Study	Increased visibility, market access and entrepreneur empowerment
10	<a href="#">Beloved (2023)</a>	Halal Meat Sustainable Value Chain Innovation	Digital Resources, ServicesOnline	Halal Food (Beef)	Mixed Method	Strengthening industry through value chain efficiency & digital services
11	<a href="#">Marjudi et al. (2023)</a>	Business Analytics in Halal Supply Chain Transactions of MSMEs	Business Analytics, Payment Gateway, Dashboard FinTech	Halal Industry (General)	SLR, Prototype Development	Increased transaction efficiency, compliance verification, and decision-making
12	<a href="#">Meerangani et al. (2023)</a>	Potential of Digital Platform for Asnaf Zakat Entrepreneurs	Social Media, Digital Sales Platform	Islamic Social Entrepreneurship	Systematic Literature Review	Increased market access, marketing, and economic survival of asnaf
13	<a href="#">Murti (2023)</a>	Digital Transformation for Halal Assurance	Cloud Computing, Digital Tracking System	Halal Food (Ice Cream)	Qualitative Case Study	Cost & time efficiency of certification, increasing halal product



		System (IKM)				assurance
14	<a href="#">Pertiwi et al. (2024)</a>	Traditional Muslim Fashion Traders' Strategy to Face Digital	Social Media (for promotion & adaptation)	Muslim Fashion (Traditional)	Qualitative Interview Study	Adaptation of traditional business, reduction of marketing costs, and new reach
15	<a href="#">Farah Qalbia and Saputra (2023)</a>	Digital Transformation & Sharia Entrepreneurship	<i>Blockchain, Fintech, E-commerce</i>	Islamic Economics (General)	Systematic Literature Review	Innovation opportunities, efficiency, and ethical challenges in the digital Islamic economy
16	<a href="#">Qizam et al. (2025)</a>	The Role of Halal Value Chain & Digital Economy in Islamic Boarding Schools	Digitalization of the Economy (general)	Halal Food & Fashion (Islamic Boarding School)	Survey, WITHOUT	Increased productivity, management efficiency, and socio-economic transformation
17	<a href="#">Abdul Rahim et al. (2023)</a>	Asnafpreneur Digitalization: <i>Hi Tech vs Hi Touch</i>	Social Media, Delivery AppsOnline	Food & Drinks (Asnaf)	Qualitative Interview Study	Improved communication, service responsiveness, and limited market access
18	<a href="#">Rohmah et al. (2019)</a>	<i>Blockchain for Traceability in Food</i>	<i>Blockchain, Internet of Things (IoT)</i>	Halal Food	Systematic Literature Review	Increasing competitiveness through transparency & consumer trust
19	<a href="#">S. et al. (2015)</a>	Model Outsourcing IT for Halal MSME Transformation	Model IT Outsourcing	Halal Industry (MSMEs)	Qualitative Interview Study	Strategies to overcome IT resource limitations for e-business
20	The Greatest Showman (2024)	Digitalization of Halal Certification in Indonesia	Digital Certification System	Halal Food (Regulation)	Document Analysis, Interview	Acceleration of the certification process, increased compliance, and policy dynamics
21	<a href="#">Sari et al. (2021)</a>	Digital Strategy Startup	Web Applications & Mobile	Halal Food (Startup)	Qualitative Interview Study	Business development through

		MakananHal al.Id				content innovation & attractive application interfaces
22	<a href="#">Sumarliah &amp; Al-hakeem (2023)</a>	Digital Innovation & Sustainable Supply Chain	AI, Analytics Data	Halal Food	Survey, WITHOUT	Improving business competitive performance through sustainable innovation & SCM
23	<a href="#">Tan &amp; Husny (2020)</a>	Digital Innovation & Halal Industry in the Industry 4.0 Era	Digital Tracking System (RFID), Industry 4.0 Concept	Halal Industry (General)	Case study	Increasing efficiency, transparency, and adaptation to the Industrial Revolution 4.0
24	<a href="#">Yang et al. (2022)</a>	Strategic Orientation for Competitive Advantage of Halal MSMEs	Strategic Orientation (digital adoption implications)	Halal Products (MSMEs)	Mixed Method	The importance of strategic orientation in achieving competitive advantage
25	<a href="#">Emerald &amp; Hyun (2022)</a>	Social Media Marketing Strategy in the Global Halal Industry	Social Media Platforms	Halal Industry (General)	Systematic Literature Review	Increased customer engagement & global competitive advantage

Analysis of the core study characteristics in this refined Table 1 shows that the halal food sector remains the most researched area, indicating the urgency and complexity of digitalization in the sector. *E-commerce* and social media consistently emerged as fundamental technologies adopted, especially by MSMEs, to expand market reach and enhance customer engagement. The use of qualitative methodologies, such as case studies and interviews, dominated, indicating that an in-depth understanding of the context, processes, and perceptions of business actors towards digital transformation remains a priority. Key findings highlighted from these studies generally point to increased operational efficiency, expanded market access, and strengthened consumer trust as a result of digital technology adoption, which will be elaborated further in thematic analysis.

After identifying the variations and focus of the core studies through Table 1, a deeper thematic analysis revealed that the strategic role of digital infrastructure does not stand alone as a pillar. Instead, it is closely related and mutually reinforcing with efforts to improve market access and achieve higher operational efficiency. This interdependence suggests that successful digital transformation requires a holistic approach. Below, each of the three competitive advantage themes will be elaborated in detail to provide a clear picture of how digital technology is fundamentally changing the paradigm and operational landscape of the halal industry.

### Advantages of Digital Infrastructure

Digital infrastructure is an essential foundation that underpins the entire transformation process in the halal industry, offering capabilities for supply chain optimization, integration of advanced business analytics, and management of the halal certification process that is much more efficient and accountable (Ahmad et al., 2022). Significantly different from traditional approaches that rely heavily on manual processes, physical documentation, and fragmented systems, digital technology brings a level of reliability, speed, and transparency that is difficult, if not impossible, to achieve without such innovation (Nazir, 2024). Building a solid digital infrastructure enables companies to automate processes, increase operational visibility, and make better decisions based on data.

*First*, halal supply chain optimization has become one of the main manifestations of the advantages offered by digital infrastructure. A study conducted by Rohmah et al. (2019) convincingly shows that the implementation of blockchain technology, which is combined with *Internet of Things (IoT)*, allows product tracking to be *real-time* and transparent, from the source of raw materials to the end consumer. This system ensures and facilitates verification of compliance with halal standards at every critical point in the supply chain. This is in stark contrast to traditional approaches that often rely on manual record-keeping and physical certificates, which are prone to the risk of human error (*human error*), counterfeiting, and lack of overall visibility (Ginantaka & Zain, 2017). Marjudi et al. (2023) further develop this argument by proposing a model *Halal Supply Chain Management Transactions (HSCMT)*, which integrates data from *platform e-commerce* with financial technology (fintech). This model not only increases the efficiency of financial transactions in the supply chain but also able to reduce operational costs associated with the verification and administration process. In the context of the halal industry, where the aspects of authenticity and halal assurance are fundamental values and main prerequisites, digital technology not only serves to speed up the process, but more importantly, it plays a vital role in strengthening and maintaining consumer trust (Hidayat & Musari, 2023). Tan & Husny (2020) also highlighted the use of digital tracking systems such as RFID as part of digital innovation in the halal industry to improve supply chain integrity.

*Second*, business analytics integration provides a significant competitive advantage in terms of more accurate and data-driven decision making (*data-driven decision making*). Sumarliah and Al-Hakeem (2023) found that the use of artificial intelligence (*Artificial Intelligence- AI*) and big data analytics can moderate the relationship between green entrepreneurship preferences and sustainable supply chain management, which in turn increases the competitiveness of halal food companies. This study is very relevant because it shows that halal business actors who are able to utilize and analyze data effectively can adjust their business strategies more quickly and precisely compared to those who still rely on intuition or experience alone, as is common in traditional approaches. Alfarizi and Hanum (2023) also emphasized that the level of digital knowledge and literacy positively influences attitudes, subjective norms, and behavioral control felt by halal culinary MSME actors, which ultimately leads to increasing the dynamic capabilities of their businesses. In other words, business analytics allows business actors to be more adaptive, responsive to market changes, and ultimately more competitive in a rapidly changing market. Marjudi et al. (2023) also emphasized the use of business analytics by MSMEs in halal supply chain management transactions to increase efficiency.

*Third*, digital certification management has become an important breakthrough in ensuring and facilitating the process of fulfilling compliance with halal standards. Murti (2023) highlights the use of *cloud computing* and digital tracking systems to support the implementation of halal product assurance systems, especially for SMEs, which results in significant reductions in time and costs in the certification process. Santoso and Rachman (2024) added that digitalization of the halal

certification process not only speeds up the processing time of applications and audits but also increases the level of compliance with applicable halal standards through an automatic reminder system and easy access to the latest regulations. These advantages are clearly not possessed by traditional paper-based certification systems, which are often bureaucratic and time-consuming. On a global scale, the adoption of a digital approach to halal certification has the potential to standardize the integrity and recognition of halal certificates between countries, thereby providing an additional layer of trust to international consumers and facilitating cross-border trade in halal products.

However, it is important to note that the implementation of advanced digital infrastructure, such as blockchain and IoT, is not without challenges. Several studies (e.g., Rohmah et al., 2019, implicitly) indicate that the high initial investment costs for implementing this technology, coupled with limited supporting infrastructure (such as stable and fast internet connectivity) in some areas, can be an obstacle to the widespread adoption of this technology, especially for MSMEs with limited resources (Hediansyah et al., 2024). This suggests that a more adaptive and perhaps gradual approach is needed, as well as policy support from the government, to overcome practical obstacles in implementing digital technology in the halal industry sector. S. et al. (2015) discuss that model *outsourcing* IT can be an alternative for MSMEs to overcome resource limitations in digital transformation.

### **Market Access and Reach**

Digital business models have fundamentally revolutionized the way halal business actors access markets and reach consumers, offering advantages that are very difficult to achieve through traditional approaches that are limited by geographic barriers and operational times (Faizah, 2022). Analysis of various studies reveals three main aspects in which digital models demonstrate their superiority in terms of market access and reach: (1) transformative capabilities in *e-commerce*; (2) effectiveness and efficiency of digital marketing; and (3) innovation in *platform* customer engagement (*customer engagement platforms*). This digitalization effort enables deeper and wider market penetration, crossing previously impenetrable boundaries.

*First*, capability *e-commerce* enables halal business actors to effectively penetrate geographical and time zone boundaries that have been obstacles. Asiyah et al. (2023) reported significant findings that the use of *platform e-commerce*, Popular platforms such as Shopee and Instagram Shop by halal MSMEs have not only succeeded in increasing sales turnover substantially, but have also dramatically expanded their market reach to new areas that were previously unreachable. This is diametrically different from the operation of physical stores, whose reach is generally limited to certain local communities or areas, *e-commerce* providing market access that operates 24 hours a day, 7 days a week (24/7) to a global consumer audience (Imani et al., 2022). Furthermore, Imani et al. (2022) added that *platform e-commerce*, which is specifically designed to accommodate the needs of halal products and lifestyles, not only functions as a sales showcase. *The platform* can also act as an educational and socialization tool regarding the principles of halal economics and Maqashid Syariah, thereby strengthening market understanding and awareness more broadly. This clearly shows that digitalization, especially through *e-commerce*, is opening up market opportunity horizons that were previously unavailable or even unimaginable for business actors who still rely on traditional methods. Farah and Saputra (2023) also emphasize the role of *e-commerce* in digital transformation and sharia entrepreneurship.

*Second*, digital marketing effectiveness, especially that carried out through social media platforms, has become a very powerful instrument to increase the visibility of halal brands and products. Zamrudi and Hyun (2022) in their systematic literature review asserted that a well-designed social media marketing strategy significantly increases the level of customer engagement

(*customer engagement*) and ultimately builds a competitive advantage for companies in the global halal industry. Social media allows businesses to target very specific audiences based on demographics, interests, and behaviors, and implement a relationship-based marketing approach (*relationship marketing*), which is more personal and interactive (Kusuma et al., 2024). This capability is difficult, if not impossible, to achieve effectively through traditional advertising methods such as print media advertising or word-of-mouth promotion, which have a more limited reach and are less measurable. Kusuma et al. (2024) also present evidence of how the integration of digital platforms, including social media, with an entrepreneurial model in hijab fashion MSMEs in Sidoarjo has succeeded in significantly increasing the visibility of their products, which is directly proportional to the expansion of market access. With costs that are relatively much lower than conventional marketing media, digital marketing offers significant economic advantages, especially for halal MSMEs with limited marketing budgets (Pertiwi et al., 2024). Meerangani et al. (2023) highlighted the potential of digital platforms, including social media, for *asnaf* zakat entrepreneurs, which is also relevant for halal MSMEs in general in expanding their reach.

Third, digital-based customer engagement has revolutionized the way businesses interact with their consumers. Abdul Rahim et al. (2023) in their study on digitalization *asnafpreneur* (entrepreneurs from among zakat recipients) noted that the use of digital channels such as social media and instant messaging applications (e.g., WhatsApp Business) as well as online delivery applications significantly improved the quality of communication and responsiveness of service to customers. This direct, fast, and personal interaction allows business actors to build stronger, deeper, and more sustainable relationships with their consumers. This is an advantage that is clearly not possessed by traditional customer support models that rely on face-to-face interactions that are limited by time and place, or via telephone lines that are sometimes less responsive (Sari et al., 2021). Sari et al. (2021) further emphasizes the importance of presenting innovative, relevant, and attractive content, as well as application interface design (*user interface/user experience*- User-friendly UI/UX) to increase customer loyalty and make your business stand out (*stand out*) amidst an increasingly crowded and competitive market. Digital applications and online platforms are also key to the digitalization of halal tourism, increasing interaction with tourists (Akbar et al., 2023).

Overall, market access and reach are expanded exponentially through the utilization of e-commerce, smart digital marketing strategies, and *innovative platform* customer engagement showing that digital business models do more than simply scale up operations. They also fundamentally deepen and enrich the quality of relationships between halal businesses and their consumers, an achievement that is hard to match with the limitations of traditional business approaches.

### **Operational Efficiency**

Operational efficiency occupies a strategic position as a critical component in the competitive advantage architecture of digital business models, especially in the context of the dynamics of the halal industry sector that demands high quality and compliance (Yang et al., 2022). The implementation of various digital technologies manifested through the automation of repetitive business processes, optimization of resource allocation and utilization, and the systematic application of operational cost reduction strategies, has been empirically proven to produce superior levels of effectiveness and productivity when compared to conventional approaches that still rely heavily on manual processes (Marjudi et al., 2023).

An in-depth comparative analysis shows that the integration of digital technologies into operational workflows does more than just increase productivity output in the short term. More importantly, it is capable of creating what is called (*dynamic efficiency*), namely the ability of an organization to continuously adapt, learn, and improve its efficiency along with changing market

conditions and technological developments (Alfarizi & Hanum, 2023). In the specific context of the halal industry, achieving this dynamic efficiency not only strengthens business competitiveness in a competitive market but also ensures and facilitates operational alignment with fundamental sharia principles, such as transparency in every transaction, accountability in resource management, and fairness for all stakeholders (Falach et al., 2024). Thus, digital transformation can be viewed as a powerful catalyst, which not only serves to transcend the inherent limitations of traditional methods but also actively catalyzes a continuous wave of innovation in a business ecosystem that upholds ethical values and Sharia compliance.

*First*, process automation significantly improves the accuracy, speed, and overall capability of business operations. Aditya and Rusfian (2024) provide a concrete example through the development of a Halal Order Management System (*Halal Order Management System*), which is capable of automating various crucial functions, starting from recording customer orders, managing product inventory online. in *real-time*, to track the shipping process. This kind of automated approach allows businesses to handle much larger transaction volumes with a higher degree of precision and lower risk of error compared to manual methods that are prone to *human error*. Marjudi et al. (2023) also proposed a prototype *dashboard FinTech* designed to automate the halal compliance verification process in supply chain transactions, which not only increases the efficiency of the verification process itself but also helps build trust among actors in the supply chain. The advantages in terms of processing speed, data accuracy, and reduction of manual workload offered by this automation are clearly significant leaps that are difficult to match by traditional processes that are manual and often fragmented. Digital tracking systems, such as RFID, mentioned by Tan & Husny (2020), also contribute to automation and efficiency in the value chain.

*Second*, resource optimization facilitated by digital technology enables the use of corporate assets, both tangible and *intangible*. or intangible (*intangible*), more flexibly, efficiently, and intelligently. Mahbubi (2023) highlights how digital resources, such as *online platforms* and customer databases, can be leveraged to create innovative new distribution channels and offer services. *Online* diversity in the halal meat industry. This approach allows for smarter and more targeted resource allocation (e.g., sales force, marketing budget) compared to traditional approaches that are often limited by the use of physical assets (such as physical distribution fleets or conventional sales outlets) that tend to be less flexible and expensive. Qizam et al. (2025) in their study on the digitalization of the economy in the Islamic boarding school environment found that the adoption of digital technology succeeded in increasing productivity and efficiency in the management of various Islamic boarding school business units. This finding is very interesting because it shows that the benefits of resource optimization through digitalization can be realized even in the context of organizations with strong traditional roots. This resource optimization, in turn, directly strengthens business competitiveness through more effective and efficient use of inputs, resulting in greater output at more controlled costs. This is also in line with the findings of Alya (2021) regarding the design of digital transformation for the development of the hijab fashion business, which implicitly touches on resource optimization through digital platforms.

*Third*, various cost reduction mechanism (*cost reduction mechanisms* inherent in the digital business model offers significant economic advantages for halal business actors. Pertiwi et al. (2024) reported that Muslim fashion traders who previously relied on traditional marketing methods are now switching to using social media for promotional and sales activities. This shift has been shown to drastically reduce marketing costs compared to conventional methods such as placing advertisements in print media or participating in expensive bazaars. This low-cost digital marketing approach is very beneficial, especially for MSMEs with limited budgets and resources (Faizah, 2022). Alfarizi and Hanum (2023) add another dimension by showing that the implementation of circular economy practices supported by digital technology (e.g., better waste



management through digital tracking, or the use platform to sell recycled products) not only improves the company's social and environmental performance. Moreover, the practice also indirectly contributes to the reduction of operational costs through increased efficiency of raw material and energy use, as well as reduced waste management costs. By reducing reliance on expensive physical infrastructure (such as shop rents in premium locations), labor-intensive manual processes, and large physical inventories (through the *just-in-time* or *dropshipping* digitally facilitated), digital business models inherently provide substantial and sustainable financial advantages. Abustani et al. (2024) also indicate how digital transformation helps the recovery of the halal creative industry post-pandemic, one of which is through operational cost efficiency.

Cumulatively, the increase in operational efficiency driven by process automation, resource allocation optimization, and various cost reduction mechanisms strongly emphasizes that the adoption of digital business models does more than just accelerate the speed of business operations. More fundamentally, it also significantly increases the potential for profitability and financial sustainability of companies, a comprehensive advantage that is very difficult to achieve optimally through the limitations of traditional business approaches.

### Summary of the Advantages of Digital Business

The following table provides a more structured comparative summary of the various competitive advantages offered by digital business models when compared to traditional business approaches in the context of the halal industry. It also lists the essential implementation requirements that business actors need to consider when adopting these digital capabilities.

**Table 2.** Comparison of Competitive Advantages of Digital vs. Traditional Business Models in the Halal Industry

Digital Capabilities	Traditional Approach	Competitive Advantages of Digital Models	Key Implementation Requirements
Platform E-commerce	Physical store, Limited market reach	Expanded global market access, 24/7 availability, Reduced physical rental costs, Faster & easier transactions	Digital infrastructure (website/application), user-friendly, Secure & diverse online payment system, Efficient & trusted logistics partnership, Integrated inventory management
Social Media & Digital Marketing	Traditional advertising (print, radio, TV), Word of mouth, High cost & limited reach	Customer engagement ( <i>customer engagement</i> ) increased, Targeted & personalized marketing, Cost-effective promotions & measurable ROI, <i>Brand building</i> faster, Analytics of campaign performance in <i>real-time</i>	Digital marketing & SEO/SEM expertise, Creative & relevant content creation skills, Active & responsive online community management, Planned digital marketing budget
Digital Tracking System ( <i>Blockchain</i> , IoT, RFID)	Manual record keeping, Lack of supply chain transparency, High risk of counterfeiting	Halal supply chain integrity has increased dramatically. Consumer confidence in authenticity, safety & <i>traceability</i> increased product, Reduction of counterfeiting & contamination	IoT devices (sensors), Implementation of technology <i>blockchain</i> (requires investment & expertise), Integrated & secure data management system, Cooperation between parties in the supply chain, Trained



			human resources for operations & data analysis
Cloud-Based Management System ( <i>Cloud Computing</i> )	Software ( <i>software</i> ) local, Manual process, Physical server dependency, High IT maintenance costs	Increased operational efficiency (collaboration, data access), Flexible & cost-effective IT infrastructure scalability, Remote data access & <i>real-time</i> , Better disaster recovery	Cloud infrastructure subscription ( <i>cloud infrastructure</i> ) as needed, Staff training on the use of cloud-based applications, Strong cybersecurity policies & data privacy compliance
Artificial Intelligence (AI) & Analytics Big Data	Decision making based on intuition or limited historical data, a Lack of personalization	Data-driven, in-depth business insights ( <i>data-driven insights</i> ), Predictive analytics for market trends & consumer behavior, Personalization of customer experiences & product recommendations, Operational optimization (e.g., stock management, logistics)	Big data collection, storage & processing infrastructure, AI/Machine Learning & data science expertise, AI ethics & data privacy compliance, Good data quality
Digital Halal Certification Management	Paper-based certification process, Long, bureaucratic & expensive process, Lack of transparency	More efficient, faster & cost-effective halal certification, Ease of access & transparency of the process for business actors & consumers, Faster market entry, Reduced potential for abuse	<i>Platform</i> Integrated & authority-recognized digital certification, Compliance with digital regulations & halal standards, Staff & auditor training on digital systems, System interoperability
Online Customer Service & <i>Chatbot</i>	Face-to-face support has limited operating hours, and Conventional telephone lines with waiting times	Customer support <i>real-time</i> & 24/7, Multi-channel engagement ( <i>omnichannel</i> ), Faster & consistent response times, Personalization of services through customer data, Cost efficiency of services	<i>Software</i> CRM & customer service ( <i>helpdesk software</i> ), Well-trained & empathetic customer service staff, Integration <i>omnichannels</i> smooth, Development <i>chatbot</i> Intelligent & contextual AI
Digital Payment System ( <i>Fintech</i> Sharia)	Cash transactions, Traditional banking with manual processes & high costs	Faster, safer & more convenient transactions, Easier & more accurate financial reconciliation, increased financial security & reduced risk of fraud, Access to various payment options	Partnership with providers, <i>fintech</i> trusted sharia, Implementation of payment gateway ( <i>payment gateway</i> ) safe & sharia compliant, Financial regulatory compliance & consumer protection
Product Exhibition Virtual & Augmented Reality (AR) / Virtual Reality (VR)	Physical product display in stores or trade shows, High exhibition participation costs	Immersive & interactive product visualization without physical boundaries, Reduce the need for physical inventory for displays, Global audience reach without travel costs, Innovative customer experiences	3D modeling technology & <i>rendering</i> , High-quality & interactive AR/VR content development, <i>Platform stable</i> & accessible virtual exhibition, AR/VR Devices (optional for consumers)
Automated & Predictive Inventory Management	Manual stock recording, Risk of <i>human error</i> is high,	Inventory tracking is <i>real-time</i> & accurate, reducing	<i>Software</i> integrated inventory management

It is difficult to make accurate forecasts	the risk of shortage ( <i>stockout</i> ) & excess stock ( <i>overstock</i> ), Optimization of warehouse costs & working capital, Better demand forecasting	(WMS/IMS), RFID system or <i>barcode scanner</i> , Integration with sales & supplier systems, Analytical capabilities for forecasting
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Source by author using Elicit AI & consensus

Table 2 clearly illustrates that the spectrum of competitive advantages presented by digital business models is centered on three main pillars: (1) a significant increase in market access and reach, transcending geographical and time boundaries; (2) the ability to conduct business operations online. *real-time*, supported by accurate data for faster and more precise decision making; and (3) optimization of inventory management and the overall supply chain, which has an impact on cost efficiency and customer satisfaction (Nazir, 2024; Yang et al., 2022).

However, it is important to underline that the realization of these advantages does not come without prerequisites. Successful implementation of a digital business model requires substantial investment commitment in several key areas. These include human resource development through staff training to improve their digital literacy and skills (Rahman & Ahmad, 2024), building and maintaining a reliable and secure technology infrastructure (S. et al., 2015), and understanding and strict compliance with applicable regulations, including regulations related to data privacy, cybersecurity, and halal industry standards themselves (Santoso & Rachman, 2024). The findings regarding these advantages show strong consistency across the empirical studies and literature analysis reviewed, further emphasizing that digital transformation is no longer just an option, but rather an imperative strategic step for business actors in the halal industry to improve their competitiveness and business sustainability in the digital era.

## Discussion

The findings of this study comprehensively underline that the adoption of digital business models provides a series of transformative competitive advantages for business actors in the halal industry, beyond the capabilities of traditional business approaches. In-depth thematic analysis of digital infrastructure, market access and reach, and operational efficiency reveals how digital technologies not only optimize individual aspects of business operations but also create synergies that strengthen the company's overall competitive position in an increasingly dynamic and global market (Davids & Sabrain, 2022; Hidayat & Musari, 2023). These advantages are not only incremental, but often disruptive, fundamentally changing the way business is conducted and value is created.

The advantages of digital infrastructure, which are manifested through the optimization of the halal supply chain with technologies such as *blockchain* and *IoT* (Rohmah et al., 2019; Tan & Husny, 2020), integration of business analytics for data-driven decision making (Sumarliah & Al-hakeem, 2023; Marjudi et al., 2023), and digital management of halal certification (Murti, 2023; Santoso & Rachman, 2024), are fundamentally changing the way value is created and delivered in the halal industry. While traditional approaches often struggle with issues of transparency, limited traceability, and slow, error-prone manual processes (Ginantaka & Zain, 2017), digital infrastructure offers solutions to overcome these obstacles. Increasing transparency in the supply chain, for example, not only increases efficiency but also directly strengthens consumer trust, which is an invaluable asset in an industry that is highly sensitive to halal and quality issues (Falach et al., 2024). The ability to analyze customer and operational data in depth also allows companies to be more proactive in responding to market changes and consumer needs, a capability that is difficult to achieve with traditional, reactive business models. The Halal Industry 4.0 model proposed by

Ahmad et al. (2022) also underlines the importance of digital infrastructure as a foundation for achieving the next level of competitiveness.

Expanding market access and reach through *platform e-commerce* (Asiyah et al., 2023; Imani et al., 2022; Farah & Saputra, 2023) and the effectiveness of digital marketing through social media (Zamrudi & Hyun, 2022; Kusuma et al., 2024; Meerangani et al., 2023) are positive disruptions to conventional marketing and distribution models. Brick-and-mortar stores and traditional distribution networks have inherent limitations in terms of geographic reach and expansion costs (Pertiwi et al., 2024). On the other hand, *platform Digital* enables halal business actors, including MSMEs with limited resources, to reach the global market at a relatively low cost (Faizah, 2022). Furthermore, the ability to interact directly and personally with customers through social media and other platform engagements (Abdul Rahim et al., 2023; Sari et al., 2021; Akbar et al., 2023) creates opportunities to build stronger brand loyalty and gain instant feedback, which is invaluable for product and service innovation. This is in line with the concept of "The Digital Halal Era," which signifies the shift of business interactions to the digital realm (Davids & Sabrain, 2022), where the boundaries between domestic and international markets are becoming increasingly blurred.

Increased operational efficiency achieved through process automation (Aditya & Rusfian, 2024; Marjudi et al., 2023), resource optimization (Mahbubi, 2023; Qizam et al., 2025; Alya, 2021), and cost reduction mechanisms (Pertiwi et al., 2024; Alfarizi & Hanum, 2023; Abustani et al., 2024) directly impacts business profitability and sustainability. Traditional business models are often burdened by high fixed costs, inefficiencies due to manual processes, and difficulties in scaling operations quickly. Digital technology enables companies to streamline operations, reduce waste (both time and material), and increase resource productivity, thereby creating a more competitive cost structure. This efficiency is not only static, namely cost reduction at a certain level of operation, but also dynamic, enabling companies to be more agile (*agile*) in adapting to changes in demand and market conditions without having to make large investments in physical assets (Yang et al., 2022).

However, the transition to a digital business model is not without challenges. As identified in Table 2 and supported by the literature (Hediansyah et al., 2024; S. et al., 2015), implementation requirements such as initial investment in technology, the need for human resources with adequate digital literacy and skills (Rahman & Ahmad, 2024), and adaptation of organizational culture are significant barriers, especially for MSMEs. The digital divide (*digital divide*), both in terms of infrastructure access and HR capabilities, are still crucial issues that need to be addressed. In addition, issues of cybersecurity, data privacy, and the need for a clear and supportive regulatory framework also need serious attention from stakeholders, including the government (Nazir, 2024). Without proper risk mitigation, the benefits of digital transformation can be eroded by potential losses due to cyber-attacks or data breaches.

The theoretical implication of this research is the strengthening of the argument that the theory of competitive advantage, such as *Resource-Based View (RBV)* And *Dynamic Capabilities*, is very relevant in explaining how digital assets (such as data, *platform*, algorithms) and the organization's ability to adapt to technology and reconfigure its resources can be a source of sustainable advantage in the digital era. The digital capabilities outlined (Table 2) can be considered as valuable, rare, difficult to imitate, and non-substitutable resources and capabilities (*VRIN/VRIO criteria*) that enable companies to achieve superior performance. Furthermore, this study also contributes to the literature on innovation management and digital entrepreneurship in the context of specific industries with strong ethical values such as the halal industry.

In practical terms, these findings provide guidance for halal businesses to strategically identify areas where digital technology can have the greatest impact on their business. For MSMEs,

adoption does not have to be revolutionary all at once; a phased approach with a focus on the technologies most relevant to their needs and capacities (e.g., starting with building an online presence through e-commerce and social media marketing before moving on to implementing *blockchain* complex and expensive) may be more realistic and effective. MSMEs need to conduct a digital readiness assessment (*digital readiness assessment*) before starting the transformation journey. Ecosystem support, including training from the government and industry associations, access to financing from innovative Islamic financial institutions (Marjudi et al., 2023, regarding *fintech*), and collaboration with technology providers or startup digital, becomes crucial to overcome resource and knowledge barriers. The model outsourcing IT, as discussed by S. et al. (2015), can be a strategy for SMEs to access digital expertise without having to recruit expensive specialist staff.

This study also highlights the importance of integrating sharia principles not only in the final product but also in the digital business process itself (Falach et al., 2024; Akbar et al., 2023). For example, in the use of data analytics and AI, aspects of privacy and ethical use of consumer data must be maintained in accordance with Islamic teachings regarding the protection of individual honor and property. In *e-commerce*, transparency of product information, clarity of transaction agreements (*gharar-free*), and avoidance of speculative practices (*maysir*) become important. Digital business models in the halal industry must be able to demonstrate that efficiency and global reach can be achieved without sacrificing Islamic ethical values, but rather strengthening them through greater transparency and accountability.

The limitations of this study lie in its nature as a literature review. Although comprehensive, it did not involve collecting primary data directly from halal business actors. Therefore, the specific perceptions, experiences, and challenges faced by different types and scales of halal businesses in implementing digital business models may require further exploration through case studies or more in-depth field surveys. Furthermore, the digital technology landscape continues to evolve at a rapid pace (Najib et al., 2024, provides a bibliometric analysis that demonstrates this trend), so findings and recommendations need to be continuously updated as innovations such as Web3, Metaverse, or further developments in generative AI and its impact on the halal industry emerge.

For further research, several directions can be explored. *First*, quantitative comparative studies that measure the financial (e.g., ROI from digital investment, sales growth, market share) and non-financial (e.g., customer satisfaction, brand loyalty, reputation) impacts of adopting various digital technologies on halal MSME performance would be beneficial. *Second*, more in-depth research on the determinants of success (*critical success factors*) and inhibitors (*barriers*) in the implementation of specific technologies such as *blockchain* for *traceability* halal in various industrial sectors (food, pharmaceutical, cosmetics). *Third*, analysis of the role of government policies and regulations in accelerating or inhibiting digital transformation in the halal industry, especially in developing countries, as well as evaluation of the effectiveness of various existing support programs. *Fourth*, further exploration of how the principles of Maqashid Syariah can be internalized more operationally in the design, implementation, and evaluation of halal digital business models, and how technology can be used to promote Maqashid objectives. *Fifth*, research on the development of digital talent in the halal sector, including relevant education and training curricula to prepare competent human resources (Rahman & Ahmad, 2024).

## CONCLUSIONS

This study firmly confirms that digital business models provide significant and multidimensional competitive advantages for business actors in the halal industry when compared to traditional business approaches. Through a comprehensive thematic analysis of 25 core empirical studies and supported by a broader literature review, three main pillars of competitive

advantage have been successfully identified and elaborated in depth: (1) strengthening digital infrastructure, (2) expanding market access and consumer reach, and (3) increasing operational efficiency. These advantages are interrelated and mutually reinforcing, creating a more dynamic, responsive, and highly competitive business ecosystem. Digital infrastructure, which includes technologies such as *blockchain*, *Internet of Things (IoT)*, *cloud computing*, and business analytics, has proven to optimize the halal supply chain, increase product and process transparency, and simplify and accelerate the halal certification process. These capabilities fundamentally transcend the limitations inherent in manual processes and fragmented systems in traditional approaches, enabling businesses to build stronger consumer trust and make smarter, data-driven decisions. Exponentially expanded market access through the utilization of *platform e-commerce* and digital marketing strategies through social media allows halal businesses, including MSMEs, to reach global consumers at a relatively lower cost and with higher levels of customer engagement. This is a significant leap compared to the limited geographic reach and high promotional costs often faced by physical store models or conventional marketing, opening up previously unimaginable growth opportunities. Increased operational efficiency, driven by automation of various business processes, optimization of resource allocation and utilization, and implementation of various cost reduction mechanisms, provides substantial advantages in terms of productivity, profitability, and business agility (*business agility*).

#### **LIMITATION & FURTHER RESEARCH**

This study, while comprehensive, has several limitations that should be addressed in future research. *Firstly*, the reliance on a literature review means that the findings may not fully capture the real-world experiences and challenges faced by halal business actors, particularly Micro, Small, and Medium Enterprises (MSMEs). Future studies could benefit from primary data collection through case studies or surveys to gain deeper insights into the specific barriers and success factors in adopting digital business models. *Secondly*, the rapidly evolving landscape of digital technologies necessitates ongoing research to keep pace with innovations such as Web3 and generative AI, which may significantly impact the halal industry. Additionally, quantitative studies measuring the financial and non-financial impacts of digital transformation on halal businesses would provide valuable metrics for assessing effectiveness. *Lastly*, exploring the role of government policies in facilitating or hindering digital adoption in the halal sector, especially in developing countries, remains a critical area for further investigation.

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