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Digital Transformation in the Islamic Economy: Technological Innovation for Strengthening the Halal Financial Ecosystem in the Society 5.0 Era

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ABSTRACT

Digital transformation has emerged as a global phenomenon that significantly influences various economic sectors, particularly the Islamic economy. Although digitalization offers substantial opportunities for enhancing efficiency and financial inclusion, its implementation within the halal ecosystem continues to face challenges related to compliance with Sharia principles, public digital literacy, and the institutional readiness of economic actors. This study aims to analyze the role of digital technology in strengthening the halal financial ecosystem and to elaborate optimal strategies that align with Sharia values. This research employs a qualitative approach through a literature review, analyzing a range of scholarly articles, books, and publications related to digital innovation and Islamic economic practices. The findings indicate that technologies such as artificial intelligence (AI), the Internet of Things (IoT), blockchain, and various Sharia-compliant fintech platforms can significantly improve efficiency, transparency, and engagement within halal financial services. The integration of technological advancement with the principles of *maqāṣid al-sharī'ah* emerges as a critical factor for success. However, several challenges persist, including the digital divide, limitations in human resources, and regulatory constraints, which must be addressed through coherent and integrated strategies. These findings provide important implications for policymakers, financial institutions, and halal industry stakeholders in designing sustainable, secure, and Sharia-compliant digital innovations. Consequently, the halal economic system is expected to develop more rapidly and enhance its competitiveness in the Society 5.0 era.

Keywords: : *digital transformation; Islamic economy; Society 5.0*

INTRODUCTION

Digital transformation has brought about significant changes in the economic, cultural, and societal paradigms of modern communities (Nur et al., 2024). Beyond generating efficiency and accelerating business processes, advancements in information and communication technology (ICT) have also fostered new forms of interaction among humans, machines, and data. One of the most prominent manifestations of this transformation is the emergence of the concept of *Society 5.0*, a vision of a human-centered smart society that was first introduced by the Japanese government in response to various social and economic challenges in the digital era (Arifin, 2019).

The concept of Society 5.0 represents a continuation of the Industrial Revolution 4.0 (Ahmadi & Ibda, 2019), where the focus extends beyond industrial automation and cyber-physical system integration to emphasize how technology can be utilized to enhance human quality of life comprehensively. Its primary objective is to establish a balance between social welfare and technological advancement, positioning digital development not merely as an instrument of economic efficiency but also as a solution to social issues such as economic inclusion and inequality.

From an economic perspective, digitalization has driven significant structural transformations. Economic systems are increasingly digital-based, emphasizing transparency, transaction speed, and operational efficiency. Phenomena such as fintech, e-commerce, digital banking, and digital currencies reflect fundamental shifts in how society interacts with economic systems. International organizations such as the World Economic Forum (WEF) and the Organisation for Economic Co-operation and Development (OECD) emphasize that digitalization is a key driver of global economic growth in the 21st century and plays a crucial role in fostering more innovative and sustainable economic ecosystems (Wahyuni, 2025).

Thus, the Society 5.0 era does not merely represent technological advancement but also embodies a broader social transformation characterized by the integration of human values and technological progress. In this context, understanding Society 5.0 becomes essential for examining the field of Islamic economics to ensure its adaptability and its capacity to leverage technological innovation in strengthening the halal financial ecosystem.

Islamic economic systems, which emphasize principles of justice, transparency, and sustainability, align closely with the vision of Society 5.0 in creating a balance between social welfare and technological progress (Gatriyani, 2024). Therefore, digitalization functions not only as a tool for economic

efficiency within the Islamic framework but also as a medium for reinforcing Islamic values in global business and financial systems.

Over the past two decades, the Islamic economy has experienced significant global growth, as evidenced by data from the *Global Islamic Economy Report*, which indicates a consistent increase in the value of the halal industry (Saputra et al., 2025). As one of the countries with the largest Muslim population in the world, Indonesia possesses substantial potential to become a global hub for Islamic economic and financial development.

However, the adoption of digital technology in this sector continues to face various challenges. These include low levels of Sharia digital literacy among the public, the persistence of conventional systems within Islamic financial institutions, and a gap between innovation, regulation, and Sharia compliance. These conditions indicate that the integration between Islamic principles and technological development has not yet been fully optimized.

Furthermore, the development of Islamic fintech has opened new opportunities for creating more transparent and efficient financial systems through digital transaction technologies and improved accountability in transaction records. However, the success of such developments is not solely determined by technological capability but also by their alignment with the principles of *maqāṣid al-sharī'ah*, which encompass the protection of religion, life, intellect, lineage, and wealth (Ramadhania, 2025).

Therefore, digitalization in Islamic economics should not be directed solely toward economic efficiency but also toward establishing a just financial system that promotes social welfare. In this sense, digital transformation in the Islamic economic sector represents not only a technological shift but also a value transformation that balances Sharia integrity with technological innovation.

Given the complexity of these issues, research in this area becomes highly relevant and necessary. This study aims to provide a comprehensive understanding of how technological innovation can serve as a driving force in strengthening the halal financial ecosystem, while also formulating appropriate strategies to ensure that digitalization remains aligned with Islamic values in the dynamic Society 5.0 era.

I. Theoretical Framework

Digital transformation in Islamic economics is a multidimensional phenomenon that can be analyzed through various theoretical perspectives, including management, innovation studies, Islamic studies, and economics (Tsakila et al., 2024). This study is grounded in three main theoretical foundations: digital transformation theory, innovation diffusion and

technological innovation theory, and Islamic economic theory with *maqāṣid al-sharī'ah*.

First, digital transformation theory explains fundamental changes in organizational structures, economic systems, and business models driven by digital technologies. According to Vial (2019), digital transformation is not merely the adoption of new technologies but a process that reshapes value creation, capabilities, and operational systems. In the context of Islamic economics, this theory helps explain how financial institutions and halal industry actors adapt to digital paradigms while maintaining Islamic values.

Second, innovation diffusion theory provides a framework for understanding how technology is adopted within the Islamic economic ecosystem. The diffusion process occurs through stages of knowledge, persuasion, decision, implementation, and confirmation (Oktaviana et al., 2024). This theory highlights factors influencing adoption, such as public trust, institutional readiness, and compatibility with Sharia values.

Third, Islamic economic theory and *maqāṣid al-sharī'ah* emphasize that economic activities must aim to achieve justice and social welfare. Classical scholars such as Al-Ghazali emphasize the protection of five essential elements: religion, life, intellect, lineage, and wealth (Ramadhania, 2025). This framework ensures that technological innovation remains aligned with ethical and normative Islamic principles.

These three theoretical foundations intersect to form a comprehensive conceptual framework, integrating technological, ethical, and social dimensions in analyzing digital transformation within Islamic economics.

II. Empirical Review and Research Gap

Empirical studies indicate that digital technologies have strong potential to expand access, enhance transparency, and improve efficiency in Islamic economic activities. Research by Abdullah and Haron (2022) demonstrates that digitalization accelerates financial inclusion through Sharia-compliant fintech and mobile banking. Blockchain technology, for example, enhances transparency and reduces the risk of *gharar* and *riba*.

Similarly, Rahim et al. (2025) highlight that digitalization supports the development of an adaptive, inclusive, and competitive Islamic economic ecosystem, particularly in developing countries. However, Hasan and Hilalludin (2025) emphasize persistent challenges, including digital inequality, human resource limitations, and regulatory constraints.

Furthermore, Nasution (2022) identifies behavioral shifts among Muslim consumers, particularly millennials and Generation Z, who increasingly adopt

Sharia-compliant fintech, halal e-commerce, and Islamic investment platforms. This shift reflects a growing preference for systems that combine technological efficiency with moral and spiritual legitimacy.

These findings reinforce the argument that digital transformation in Islamic economics is both inevitable and strategic, yet must remain guided by *maqāṣid al-sharī'ah* principles.

Despite its potential, digital transformation in Islamic economics faces several structural, normative, and technological challenges. These include slow adoption compared to conventional systems, limited Sharia-based innovation, low digital literacy among MSMEs, and weak collaboration between financial institutions and technology industries.

Based on these challenges, this study addresses the following research questions:

1. How does digital transformation contribute to strengthening the halal financial ecosystem in the Society 5.0 era?
2. Which technologies have the greatest potential to support the development of Islamic economics?
3. What strategies can ensure that digital transformation aligns with Islamic principles while enhancing competitiveness and sustainability?

Accordingly, this study aims to:

1. Analyze the role and impact of digital transformation in strengthening the halal financial ecosystem in the Society 5.0 era, particularly in terms of inclusivity, sustainability, and efficiency.
2. Identify and classify technological developments that align with *maqāṣid al-sharī'ah* to support a competitive Islamic economy.
3. Formulate strategic frameworks for implementing Sharia-compliant digital innovation through collaboration among regulators, Islamic financial institutions, and industry stakeholders.

METHOD

This study employed a **qualitative approach** using a **literature review** as the primary basis of analysis. This method was selected because it is highly relevant for examining theoretical concepts, practical developments in digital transformation within the Islamic economic sector, and the findings of previous studies. Through this approach, the study enables a deeper understanding of both theoretical and empirical dynamics, while also identifying research gaps that require further investigation.

Methodologically, this research was conducted through several systematic stages. The first stage involved the identification of relevant scientific literature

by carrying out an in-depth search of various academic sources, including scholarly journals, academic books, publications, and national policy reports. The literature search focused on issues related to digitalization, halal blockchain, Islamic fintech, and the strengthening of the Islamic economic ecosystem in the Society 5.0 era.

The next stage involved the selection and classification of the literature based on criteria of relevance, recency, and source validity. The selected sources were categorized into four main themes: (1) theories and concepts of digital transformation; (2) principles and models of Islamic economics; (3) the integration of Islamic values into technological development; and (4) the challenges and opportunities of digitalization in the halal financial system. This classification facilitated the conceptual analysis and the identification of relationships across studies.

After the selection and classification process, the literature was analyzed and synthesized using a **content analysis approach** in order to explore meanings, compare findings, and identify patterns of linkage between Islamic economics and digitalization. This synthesis was intended to develop an integrated understanding of the role of digital technology as an instrument for strengthening Islamic economics, as well as the determining factors underlying its successful implementation.

At the final stage, an evaluation was conducted to assess the limitations of the existing literature and to formulate directions for future research, taking into account the Indonesian context as a country with the largest Muslim population in the world. This approach makes the study not only descriptive in nature, but also reflective of emerging needs and opportunities.

Accordingly, the research method in this study functions not merely as a means of gathering information, but also as a conceptual analytical tool for constructing an updated synthesis from various theoretical and empirical perspectives. Ultimately, this study is expected to provide a deeper understanding of the role of digital development in strengthening the halal financial ecosystem in the Society 5.0 era, while also serving as an academic foundation for the development of technological innovation and regulatory frameworks that are aligned with Sharia values.

RESULTS AND DISCUSSION

As widely recognized, digital transformation has become a primary catalyst in strengthening the Islamic economy, particularly in enhancing efficiency, accessibility, and transparency within halal financial services. The findings of this study indicate that digitalization enables Islamic financial institutions to

optimize their operations through integrated technologies across various business aspects, ranging from transaction management to risk management. The use of digital platforms also allows financial service providers to expand their reach, particularly to underserved or underbanked populations (Dz, 2018).

Furthermore, digital technologies contribute significantly to improving accountability and transparency within the halal economic ecosystem. Digital record-keeping systems and real-time transaction monitoring reduce the risk of violations of Sharia principles, such as *riba* (interest) and *gharar* (uncertainty). A notable example is the application of halal blockchain, which enables financial transactions and halal supply chains to be permanently recorded and independently verifiable. This approach not only enhances consumer trust but also strengthens the moral legitimacy of Islamic financial institutions in the public sphere.

The study also reveals that digital transformation supports substantial economic inclusion. Digitalization facilitates access to financial services without geographical constraints (Setyaningrat, 2023), enabling individuals in remote areas to utilize Islamic financial products through mobile applications, e-wallets, and halal peer-to-peer lending platforms. This development directly contributes to the equalization of economic opportunities, improvement of Islamic financial literacy, and empowerment of micro, small, and medium enterprises (MSMEs) operating within halal standards.

However, the impact of digital transformation in Islamic economics is highly contextual, depending on institutional readiness, public digital literacy, and regulatory support (Fadila & Soumena, 2025). Institutions capable of balancing Sharia compliance with technological innovation demonstrate higher effectiveness in strengthening the halal financial ecosystem. Conversely, institutions with limited infrastructure and human resources tend to face reduced competitiveness in an increasingly dynamic global market.

Thus, the contribution of digital transformation in the Islamic economic sector is not merely technical but also strategic and value-driven. Digitalization functions as a tool to enhance operational efficiency, strengthen financial transparency, and expand financial inclusion, while simultaneously ensuring that Sharia principles are upheld in all transactions and services. These findings provide an essential foundation for further discussion regarding appropriate technologies, implementation challenges, and innovation strategies within the Islamic economic ecosystem.

1. Relevant Technologies and Innovations

The findings indicate that the development of digital technologies presents significant opportunities for innovation in Islamic economics, both in halal business sectors and in the broader financial system. Several key technologies have been identified, including artificial intelligence (AI), big data analytics, blockchain, the Internet of Things (IoT), and digital payment systems (Wattimena et al., 2024). Each of these technologies plays a specific role in strengthening the halal financial ecosystem while maintaining adherence to Sharia principles.

First, blockchain plays a crucial role in enhancing accountability and transparency in halal financial transactions. Its decentralized and immutable nature enables real-time transaction recording and independent verification (Aminin, 2024). The implementation of blockchain-based smart contracts supports the automation of Sharia-compliant transactions, such as *murabahah*, *ijarah*, and *mudarabah* contracts (Vidiati et al., 2021). This significantly reduces the risk of *riba* and *gharar*.

Second, artificial intelligence (AI) and big data analytics enable Islamic financial institutions to perform more accurate risk assessments, personalize services, and analyze consumer behavior efficiently (Rahayu & Naja, 2023). AI can be utilized to assess creditworthiness for halal MSMEs, provide Sharia-based investment recommendations, and detect fraudulent activities. Meanwhile, big data analytics supports market trend analysis, financial product development, and consumer demand mapping.

Third, the Internet of Things (IoT) supports monitoring within halal supply chains, including production, storage, and distribution processes for halal food and pharmaceutical products (Wahyudi et al., 2025). This technology facilitates the integration of halal traceability systems, allowing each stage of production to be digitally audited to ensure full compliance with Sharia standards. Consequently, this enhances consumer trust and strengthens the legitimacy of halal product providers.

In addition, technological innovation has led to the emergence of new digital-based business models, such as Sharia crowdfunding, digital zakat platforms, and online halal investment platforms. These innovations not only improve service efficiency but also expand access to financial products and services that were previously limited to specific segments of society.

Overall, the findings emphasize that the successful implementation of technology in Islamic economics depends not only on technological availability but also on the alignment of innovation with Sharia principles, the level of public digital literacy, and institutional readiness. The key to strengthening the halal

financial ecosystem in the Society 5.0 era lies in the balanced integration of technological advancement and Sharia values.

2. Challenges and Barriers to Implementation

Although digital development offers significant opportunities for strengthening the Islamic economy, the findings of this study indicate that its implementation continues to face numerous complex challenges. One of the primary obstacles is the existence of the digital divide across different segments of society (Mulyana et al., 2021), particularly among communities living in areas that remain beyond the reach of technological development. As a result, not all members of society have adequate access to technological infrastructure, internet connectivity, or proper digital devices. This condition significantly affects the unequal adoption of digital Islamic financial services, especially in rural and remote areas where the levels of financial and digital literacy remain relatively low.

On the other hand, institutional readiness and human resources also constitute decisive factors in the successful implementation of digital innovation. Many Islamic financial institutions still face limitations in terms of technical capacity, the availability of qualified experts, and internal capabilities to manage digital systems effectively and optimally. These shortcomings often contribute to the slow pace of technological integration, preventing the expected innovation and development from being realized to their full potential. The literature review shows that institutions that continuously invest in human resource training and internal capacity building tend to be more successful in leveraging the potential of digitalization (Adiguna et al., 2024).

In addition, regulatory challenges and compliance with Sharia principles represent critical aspects that require serious attention. Regulatory frameworks that have not yet fully accommodated Sharia-based digital innovation may lead to legal uncertainty for industry actors. For example, the implementation of smart contracts and Sharia crowdfunding platforms often encounters ambiguity regarding Sharia standards and legal requirements, thereby creating significant risks for both institutions and consumers. This condition underscores the need for collaboration among regulators, Sharia supervisory boards, and industry actors to formulate adaptive policies that remain consistent with Sharia principles.

Beyond these external factors, the level of consumer literacy and trust also constitutes a considerable challenge. The digital transformation of the Islamic economy depends not only on technology itself, but also on the extent to which society understands and accepts new services. Studies indicate that consumer

distrust regarding data security, limited understanding of Sharia compliance, and the complexity of digital technologies can all hinder the adoption of digital services. Therefore, effective communication and educational strategies are essential to encourage public acceptance of digital innovation grounded in Sharia values.

Thus, although these barriers cannot be overlooked, they also provide an opportunity for Islamic financial institutions and halal industry actors to design more mature and effective digital transformation strategies. Synergy among technology, competent human resources, regulation, and Sharia values is the key to success. In this way, digital innovation will not only improve efficiency, but also strengthen moral legitimacy and enhance the competitiveness of the halal economic ecosystem.

3. Analysis of the Impact of Digitalization on the Halal Financial Ecosystem

The findings of this study indicate that digitalization has led to significant changes in the structure and operation of the halal financial ecosystem. From an analytical perspective, digitalization functions not only as a means of improving operational efficiency, but also as a strategic instrument for expanding financial inclusion, strengthening the accountability of Islamic financial institutions, and enhancing transparency. The integration of digital technologies, including Islamic digital banking and Sharia-compliant financial technology, has enabled transactions to become faster, more affordable, and more secure, while simultaneously reducing operational costs that have previously constrained many institutions.

More specifically, digital transformation has enabled Islamic financial institutions to expand their service networks, including to communities that were previously underbanked or financially excluded (Mukharom et al., 2024). Technologies such as halal e-wallets, peer-to-peer lending platforms, and mobile banking have facilitated access to digital financial services, thereby allowing broader participation in halal economic activities. This phenomenon has had a substantial impact on the economic empowerment of the Muslim community, particularly halal-based micro, small, and medium enterprises (MSMEs), which are now able to utilize digital platforms more effectively to obtain business capital, reach consumers, and manage transactions more efficiently.

In addition to improving access and efficiency, digitalization has also had a major impact on the transparency and accountability of Sharia-based transactions. Blockchain technology and halal traceability systems support permanent transaction records that can be independently verified. This not only minimizes the risk of practices such as *riba* and *gharar*, but also strengthens the

legitimacy of Islamic financial institutions in the eyes of the public. These findings are consistent with previous studies emphasizing that digital transparency is a key factor in building consumer trust in halal products and services (Efendi, 2024).

Nevertheless, although the positive impact of digitalization is considerable, this study also shows that its success remains highly contextual. Factors influencing the effectiveness of digital transformation include institutional readiness, regulatory support, and the level of public digital literacy. Institutions that are able to harmoniously integrate technological advancement with Sharia principles tend to demonstrate a greater impact and a higher rate of technological adoption than those that still face technical limitations or insufficient Sharia-related capacity.

Therefore, digitalization within the halal financial ecosystem not only contributes to service expansion and efficiency, but also acts as a catalyst for structural transformation that enhances competitiveness, financial system sustainability, and Sharia-based moral legitimacy. This analysis provides an important basis for understanding how technological innovation can be strategically optimized in accordance with the principles of *maqāṣid al-sharī'ah*, while also generating broader economic benefits for Muslim communities in the Society 5.0 era.

4. Synergy between Technology and Sharia Values

The advancement of digitalization in Islamic economics cannot be separated from Sharia principles, which serve as its normative and ethical foundation (Rahmat et al., 2025). The findings of this study indicate that the success of digital transformation largely depends on the ability of Islamic financial institutions and halal industry actors to integrate technological innovation with Sharia values, particularly the principles of *maqāṣid al-sharī'ah*. This approach emphasizes that every technological development – from Sharia-compliant fintech platforms to blockchain applications – must be directed toward ensuring transparency, justice, and public welfare for all stakeholders involved.

One of the most prominent forms of this synergy is the application of blockchain-based smart contracts in halal financial transactions (Qotrunada, 2025). Through this mechanism, contractual agreements (*akad*) can be automated in accordance with Sharia requirements, thereby minimizing the risk of practices that contradict halal principles. This demonstrates that technology functions not only as an instrument for transactional efficiency but also as a means of reinforcing compliance with Sharia values. Such synergy strengthens the

legitimacy of Islamic financial institutions in the eyes of consumers and enhances trust in Sharia-based digital economic systems.

Moreover, several studies indicate that digitalization facilitates a more flexible and broader implementation of Sharia principles (Hanifah et al., 2025). For instance, digital zakat platforms and waqf applications enable users to distribute charitable contributions—such as *zakat*, *infaq*, and *sadaqah*—in a transparent, measurable, and efficient manner. These technologies integrate the principles of justice and social empowerment with digital convenience and efficiency, thereby expanding both the economic and social benefits of Islamic financial activities.

However, the synergy between technology and Sharia values requires robust regulatory readiness and governance frameworks. Policies that support Sharia-based innovation—including standards for Sharia compliance, digital halal certification, and ethical guidelines for the use of artificial intelligence and big data—are essential to ensure that digital transformation aligns with Islamic principles. Without adequate regulatory support and governance structures, technological advancements may pose risks of value deviation that could ultimately harm consumers (Bahtiar et al., 2021).

In this regard, the integration of technology and Sharia values is not merely a theoretical construct but an implementable strategic approach that optimizes the benefits of digitalization while preserving the moral and ethical integrity of Islamic economics. This perspective underscores that success should not be measured solely by technological efficiency or innovation, but also by the extent to which such technologies contribute to achieving the objectives of *maqāṣid al-sharī'ah* and promoting the overall welfare of the Muslim community.

5. Strategies for Strengthening the Halal Ecosystem

The findings of this study indicate that strengthening the halal economic ecosystem in the digital era requires an integrated strategy that combines technological advancement, human resource development, regulatory support, and adherence to Sharia principles. Such strategies must be designed holistically to ensure that digital innovation not only enhances operational efficiency but also builds public trust and ensures the sustainability of the halal economy.

First, the adoption of adaptive technologies serves as a fundamental pillar. Islamic financial institutions must identify technologies that align with their market characteristics and operational needs, such as artificial intelligence (AI), the Internet of Things (IoT), Sharia-compliant fintech, and blockchain (Qothrunnada et al., 2023). The implementation of these technologies should be gradual and measurable, with a strong emphasis on compliance with the

principles of *maqāṣid al-sharī'ah*. This approach ensures that digital transformation is not merely experimental but delivers tangible impacts on financial inclusion and operational efficiency.

Second, strengthening Sharia governance and regulatory frameworks is equally critical. Adaptive regulations and clear Sharia compliance guidelines can encourage financial institutions to innovate without compromising Islamic values (Aditya & Lestari, 2025). Furthermore, synergy among Sharia supervisory boards, regulators, and halal industry actors is essential to develop digital certification systems and standards that guarantee security, transparency, and adherence to halal principles.

Third, the development of human resource capacity is a key determinant of successful implementation. Islamic financial institutions must implement continuous training and educational programs (Wasito et al., 2025), both for service users and internal professionals. Adequate digital literacy facilitates technological adoption, enhances consumer trust, and reduces risks associated with digital Islamic financial services.

Fourth, ecosystem collaboration and sustainable innovation are crucial for fostering synergy among stakeholders (Sari & Retnaningsih, 2020). Financial institutions, government bodies, consumers, and technology startups must collaborate to create a transparent, inclusive, and sustainable ecosystem. This collaborative model enables knowledge sharing and the dissemination of best practices, thereby strengthening the competitiveness of Islamic economics at both national and global levels.

Through the consistent implementation of these strategies, the halal economic ecosystem can be further strengthened through digitalization—not only in terms of efficiency and accessibility but also in upholding Sharia compliance, community empowerment, and social justice. These strategies underscore that digital transformation aligned with Sharia principles is a fundamental key to the sustainability of the halal economy in the Society 5.0 era, while also providing practical guidance for industry stakeholders and policymakers in designing ethical and sustainable innovations.

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