



Sharia Digitalization as a Driver of Financial Inclusion in Remote Areas

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Abstract

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The vacuum in Islamic finance education and poor transportation in outlying rural area will be a real challenge for example, to equalize the economic on ethical basis backed by Islam Digitization, or the internet, is now pushing Islamic finance further and further, with entrepreneurs defining its service to focus on the need that has been articulated as formless but open so that they can skim more through (depth) or across (width) depending entirely on them. This, in turn, provides one way to get around difficulties of geography and topography through fintech development in the form of mobile banking services, Sharia-compliant QRIS-based payment systems, and so on and so forth right down to Islamic law. However, if they can cope with these technical tasks with the plethora of gadgets we already give them, then great, there are some benefits for them where currently there were none. This study specifically aim to explore the effectiveness of Sharia financial inclusion in rural area by examining the role digitalization, digital literacy and infrastructure. Each of Impact and the model (of warmth): relation in a qualitative descriptive analysis study shows how these three effects impact each other to reinforce Shariah Digital Ecosystem lead to above table The first ` is that digitization accelerates access time for people to get Islamic financial services. A useful implication of this research is that financial institutions (FIs), regulators and governments should develop a digital architecture that has maqāṣid al-syarī'ah at the core for the masses to benefit The novelty of this study lies in combining technology, literacy, and infrastructure as means towards achieving sustainable digital transformations among community-based Islamic financiers' population initiatives.

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INTRODUCTION

The digital financial technology progression has utterly changed the scene of the global financial landscape, in particular for Islamic finance in Indonesia. In this type of less favored area, not only can digitalization help make transactions more efficient, but it is also an effective method for solving financial access problems in places that are relatively neglected. According to the Financial Services Authority of the Government of Indonesia (OJK), in 2023, Indonesia's national financial inclusion rate was 85%, while the figure for inclusive Islamic finance remained 13%. This marked difference can tell us most Indonesians, especially in the rural and island areas, are not getting Islamic financial services (Ajijah et al., 2025). Infrastructure lags, inconvenient geography, low digital literacy, and low financial literacy all contribute to the problem. There are a large number of rural or remote areas where people are still living according to the pattern of cash economy with informal financial intermediation. In such a situation there is no need to say that financial exclusion and marginalization will ensue, impeding local economic growth. The welfare gap may even widen further (Asriyana et al. (2025). On the other hand, digitalization has opened up wide prospects for Islamic finance to be accessible equally no matter what form of traditional banking infrastructure it may correspond with—especially through sharia fintech, sharia mobile banking, or payment systems based on sharia QRIS (Wahab & Ihsan, 2025). Consequently, there is a significant opportunity here. But a tangible gap still exists that divides Islamic financial literacy from actually becoming financially inclusive (Vidyaningrum et al., 2023; Wicaksono et al., 2024). People understand the principles of Islamic finance without necessarily being able to get directly at digital services. They are cut off from reaching the internet due to a lack of good networks and low-grade gadgets and do not understand digital data security (Imani et al., 2023; Nugroho, Cetin, et al., 2023; Zakiyah et al., 2022). This only goes to illustrate that digitalization, without infrastructural support and community effort for literacy, has not been entirely effective. Moreover, as Islamic financial services put social justice principles and *maqāsid al-shari'ah* into practice, it is not enough for the sector to simply enhance the quality of people's lives. It must also be helpful in economic empowerment to be able to successfully aid national development. For those with credit accounts, Islamic financial inclusion touts digital technology as a help in distributing government welfare. It is also a boon to the less developed MSME economic sector in laid-off regions. Its importance is shown in a previous paper by Asriyana et al. (2025). Rural fintech can change the consumption habits of rural bank clients from cash to effective digital financial transactions. Nevertheless, they are still confronted by illiteracy and an inability to access communication networks. In a number of prior reports, studies done by Wahab & Ihsan (2025) discovered that when Islamic banking undergoes digital transformation, it is possible for the unbanked to receive microfinance and digital zakat. Corresponding to this, research by Ajijah et al. (2025) also argued that a durable, inclusive digital infrastructure for Islamic banking should be constructed by building partnerships between governments, regulators, and fintech startups. This research uses the Theory of Diffusion of Innovations as its theoretical base. This theory clarifies how innovations, especially related to IT, spread through a society by means of social operations that follow the characteristics of the invention itself, the communication medium, time and the surrounding social environment (Rogers et al., 2014). The importance of this theory lies in learning how Islamic financial technology spreads and is adopted by rural zones.

Influencing the outcomes of successful acceptance are factors such as literacy, trust and infrastructure readiness.

Based on the gap phenomenon, the formulation of the problem (research question) in this study includes:

- How does digitalization expand access to Islamic finance in remote areas?
- How is digital literacy impacting the adoption of Islamic financial services?
- How does infrastructure affect the effectiveness of digitalization of Islamic financial inclusion?

Furthermore, referring to the formulation of the problem, the objectives of this study are as follows:

- Identifying the role of digitalization in expanding access to Islamic finance in remote areas;
- Identify the extent to which the level of digital literacy affects public acceptance of technology-based Islamic financial services; and
- Identifying the influence of infrastructure on the effectiveness of digitalization in realizing sustainable Islamic financial inclusion.

This research yields many implications. It also helps to adjust our understanding of how digital innovation takes root in the world of Islamic finance, to give some emphasis on countryside areas and less developed regions. Its findings may hope to provide directions for both participants in Islamic finance and fintech players in creating digital products with more inclusive attributes and better targeted at rural areas. Furthermore, this research suggests the government and its regulators (OJK and KNEKS) develop Islamic finance digitalization ecosystems through infrastructure, digital literacy, and consumer protection mechanisms that respect the principles of sharia'ah law. Historically, three aspects were the focus of investigation in studies on this topic: digitalization, literacy, and infrastructure. Now for the first time in the literature, we genuinely investigate them together. In practice, the impact of digitalization is to spread access to a value-added Islamic economy. Therein, though, digitalization is more than just new technology for executing different orders. It is a means to import into society itself. This is consistent with the ultimate objectives of Sharī'ah, looking not merely toward the present but also obtaining equal access and further emphasizing distributive justice beyond the individual-type case. Secondly, the rapid development of digital financial innovation in today's Islamic world is comparable to modern economic da'wah in form. That is, Sharia principles constitute core values, and technology (Da'wah) serves as a tool to spread those values in contemporary fashion into all areas of life where they might not otherwise be reached before. Therefore, digitalization is not only a tool but also a medium to drive change for a future society, which will be more self-governing and fairer in its economic system according to Islam's mandate.

LITERATURE REVIEW

As an essential tool for extending financial inclusion in Indonesia, the Islamic financial sector is entering an era of digital transformation. Digitalization provides Islamic financial services with the ability to service those in out-of-reach regions or who were previously prevented due to infrastructure limitations and operational costs of conventional finance organizations. Since the digital era, Islamic finance has seen a reinvigoration. The digital era has opened the sector up at last to the widespread use of innovative financial products and services—a legacy of premodern banking. However, it still hasn't come into its own as an agent for social change. The most suitable framework

for discussing this phenomenon in theory is Diffusion of Innovations Theory (DOI). This suggests that innovations spread at five main stages: knowledge, persuasion, decision, implementation, and confirmation (Rogers et al., 2014). Furthermore, in the context of Islamic finance, DOI explains how people in remote areas begin to know (knowledge) digital technology such as Islamic mobile banking or Islamic fintech, then form a positive perception of its benefits (persuasion), make a decision to use the service (decision), apply it in daily economic activities (implementation), and finally confirm satisfaction and his belief in the digital sharia-based financial system. The relevance of the DOI theory to this topic is evident in how digitalization serves as an innovation that drives socio-economic change in Muslim communities, especially in remote areas. According to Ajijah et al. (2025), digital innovations such as sharia mobile banking, halal fintech, and digital waqf play an important role in expanding the reach of sharia financial services, especially for MSMEs and rural communities. However, the spread of these innovations is highly dependent on public literacy levels and government regulatory support. Meanwhile, research conducted by Wahab & Ihsan (2025) confirms that digital transformation in Indonesian Islamic banking is a strategic pillar in building an inclusive financial ecosystem, where although digitalization improves service efficiency and access for the younger generation, there are still obstacles in the form of infrastructure inequality and low digital literacy in non-urban areas.

In addition, the definition and concept of Islamic finance digitalization are the processes of applying digital technology to the operations of financial institutions based on Sharia principles to improve access, efficiency, and transparency of services. The forms of implementation include sharia fintech, sharia internet banking, halal e-payment, waqf, and digital zakat platforms. According to Fitri et al. (2025), the integration of fintech into Islamic banking, and more broadly, across all financial services, significantly increases financial accessibility for those whom the conventional system has failed. Digital literacy and sharia compliance will require ongoing attention from public policy. More significantly in 2013, Islamic Financial Inclusion became defined as achieving financial participation by all sectors of society, at each level of Islamic financial methodology. Thus, from the point of view of browsers, those who are not involved internationally must go somewhere else for their bellyfuls. To quicken attainment of this goal, everyone should have access to savings, finance, insurance, and Sharia investment products readily in a fashion that is consistent with their religious tenets. Nugroho et al. (2022) explained that the Islamic financial system emphasizes justice, openness, and balance in the distribution of wealth, thereby making broad access to financial services a manifestation of *maqāṣid al-syarī'ah* in the dimension of *hifz al-māl* (property protection). Furthermore, digital literacy is the community's ability to understand, assess, and use digital technology effectively and safely (Sudirman et al., 2020). In the context of Islamic financial inclusion, digital literacy is an important prerequisite for people to access services such as mobile banking and fintech with confidence. Research by Asriyana et al. (2025) shows that low digital literacy is the main obstacle to the adoption of financial technology in rural areas, even though people have shown interest in digital transaction systems. Meanwhile, the definition of infrastructure includes internet networks, digital devices, and cybersecurity systems that support digital financial service operations (Labetubun et al., 2021). Without adequate infrastructure, achieving optimal effectiveness in Islamic finance will be difficult. Furthermore, research by Adipurno

(2025) found that limited technology infrastructure is the main obstacle to implementing the Islamic digital economy, even though sharia fintech has great potential to support MSMEs and local communities.

Furthermore, several previous studies related to this research, such as Safitri & Putri (2025), have shown that sharia fintech provides alternative halal financial services to the public, including contract-based financing, halal investment, and digital zakat. However, low literacy and public trust in digital services are still the main obstacles. In addition, the presence of fintech can shift people's financial behavior from cash to digital transactions in rural areas, even though digital infrastructure and security remain challenges (Asriyana et al., 2025). Meanwhile, according to research by Wahab & Ihsan (2025), the success of digitalization in the Islamic financial sector depends on the support of Sharia regulations and governance standards for digital platforms. Furthermore, the conceptual framework in this study can be illustrated in the image below:

Figure 1. Research Conceptual Framework



Source: Author

As depicted in Figure 1, digitalization is the primary source of innovation that broadens the reach of Islamic finance via web-based technology and digital apps. "Digital literacy plays a mediating role in the acceptance and usage of IF Serv (Islamic financial services) at the community level." And on the other hand, the digital infrastructure provides for an easy execution of financial services in remote locations. These three elements work together towards the Order's ultimate objective of promoting an equitable, sustainable sharia compliance ([[sharia]] financial inclusion in accordance with [[maqāsid al-shari'ah]]).

METHODS

To show how digitalization can improve access to Islamic inclusive finance for poor areas of the world, this research uses a descriptive qualitative methodology. Thus, this approach was chosen not only because it facilitates the seamless understanding of social phenomena in different contexts but also because it attempts to put into language DC's experiences, behavior, meanings, and psychological perceptions. Consequently, Nugroho et al. (2023) state that descriptive qualitative methods are best used to describe naturally occurring phenomena and give the researcher a thorough, in-depth understanding without any interference of experiments. The research is both descriptive and exploratory, with the dream focus exploring the relationship among digitalization, digital literacy and environment phase to increase Islamic financial inclusion Given the nature of this approach, it will allow researchers to explore questions that are "How" in their nature, such as how digitalization widens access to Islamic finance, how digital literacy

influences the adoption of Islamic services and or is teaching infrastructure determines how well financial inclusion functions in remote lands This exploratory approach is also used in (Nugroho, Fachri, et al., 2024; Nugroho & Chowdhury, 2015) where they analyzed the innovation of Islamic financial institutions as a means to accelerate financial inclusion through digitalization and stressed that in so doing, it is essential for innovation, regulation, and literacy to combine closely together. Therefore, this study aims to interpret the information in the context of rural areas and communities with little information technology. In relation to the information employed in this study, the researcher drew upon secondary sources, including scholarly articles, financial institution reports, government policy publications, and previous research. Apart from this, the putting it all together and winnowing made up a number of stages of analysis ore concrete useful that all must be mastered in order to successfully reach conclusions.

RESULT AND DISCUSSION

Digitalization Expands People's Access to Remote Islamic Finance

Fintech in the financial industry is an unstoppable force. The financial technology industry is an opportunity and a challenge for the (Islamic) banking sector that should be adapted to the rapid changes in digital markets. The FinTech revolution, being an innovation, is a new form of business model that provides fast, efficient, and personalized provision of financial service. Nonetheless, the ability of a bank to offer and adopt FinTech such as RPA depends not only on technological capacity but also on how far organizational support develops an innovative environment within the institution that empowers workers and management to accept, introduce, and scale up its application. In this regard, the Diffusion of Innovation (DOI) Theory is considered a significant framework for comprehending technological innovations, such as FinTech, in the banking industry. Rogers et al. (2014) described how the dynamics around innovation are incorporated into each other based upon innovation characteristics, communication channels, time, and social systems to explain whether an innovation is adopted or not. Within the banking institution, this social aspect is shown through inspiring leadership, a working culture of evolving digital learning, and internal policy supporting sustainable utilization of new technologies (Nugroho, Utami, et al., 2024; Syahputra et al., 2024). Organizational support is a social system activator that auspices innovation, and hence it would be adopted successfully (DOI). Employee perceptions of FinTech benefits Mediating effect of digital training, performance incentives and open communication systems within divisions If organizations offer employees opportunities to obtain new knowledge by providing digital training, it can result in increasing their motivation to engage in FinTech. According to Irwansyah et al. (2021) and Nurdany et al. (2024), the success of digitalization in Islamic banking relies very much upon the readiness of an organization to integrate new technology with governance and sharia compliance. Without structural support from the company and training of human capital, digital transformation will often lead to incomplete modernization without operational efficiency.

Consistent with this notion, studies by Ajijah et al. (2025), Fitriansyah & Nugroho (2025) and Sudirman et al. (2020) stress the necessity of creating an organizational climate that finds new technologies particularly beneficial, which can only happen if firms are willing to invest in digital capabilities and internal learning processes. They

discovered that Islamic financial institutions (IFIs) that actively engaged in digitalization—by implementing mobile banking, entering fintech partnerships, and digitizing microfinancial services—recorded greater financial inclusion than those that did not engage. From the perspective of the Diffusion of Innovations (DOI) theory, organizational facilitation is perceived through five stages in the process of adopting a new innovation: knowledge, persuasion, decision, implementation, and confirmation. In the stage of knowledge, organizations should educate employees about the opportunities and also risks of FinTech so that all of them are aware of these consequences. At the stage of persuasion, organizational culture and transformational leadership are useful to shape the belief that FinTech can enhance operation efficiency and business competitiveness. The decision level consists of both managerial decisions and strategic policies to have the technological infrastructure and human capital. Moreover, in the process of realization, companies incorporate FinTech with their operational systems, including API (Application Programming Interface), e.g., integration between an Islamic banking application and an application programming interface or utilizing blockchain for Islamic financing transactions. The third phase, zoning in, is where institutions measure the success of institutionalized use through increased productivity, customer satisfaction, and end-user loyalty.

In the context of banking, organizational support encompasses four key dimensions: digital leadership, innovative culture, strategic policies, and supporting infrastructure (Ghodiva & Nugroho, 2025; Nugroho, 2020, 2022). First, digital leadership helps instill a long-term vision for technological transformation. This kind of leadership requires bank leaders not only to understand technology but also to inspire their teams to dare to innovate. Second, an innovative culture ensures that every member of the organization feels safe to try new approaches without fear of failure. Third, the organization's strategic policies determine how quickly FinTech can be adopted through resource allocation and collaboration with external partners. Finally, supporting infrastructure such as secure IT systems, reliable data centers, and cybersecurity is an important prerequisite for FinTech adoption to run smoothly. In addition, Fitri et al. (2025), Imani et al. (2023), and Soeharjoto et al. (2019) show that integrating FinTech into Islamic banking significantly improves financial accessibility for the community. They emphasized that the success of this integration is not determined solely by technological sophistication but also by organizations' readiness to provide supporting resources and policies that are adaptive to digital change. On the other hand, research by Safitri & Putri (2025) and Najuah et al. (2025) indicates that internal organizational factors, such as employee training, technology awareness, and trust in digital systems, greatly influence the speed of adoption of sharia-based financial innovations. They found that institutions with strong managerial support and a digital, performance-based reward system adopted FinTech more quickly than those that still used conventional hierarchical structures. The correlation between organizational support and FinTech adoption is also evident in the studies by Adipurno (2025) and Fitriansyah & Nugroho (2025), which found that Islamic FinTech can expand financial services to local communities when organizations have managerial flexibility and structures that support cross-unit collaboration. The research emphasizes that without cross-functional support, digitalization initiatives often stall at the pilot project stage and lack operational sustainability. Furthermore, the findings of Asriyana et al. (2025) reinforce the perspective that organizational backing significantly affects the success of FinTech in enhancing financial inclusion. The study's findings indicate that the effective implementation of financial technology in rural regions hinges on the preparedness of

financial institutions to foster collaborative ecosystems, improve digital literacy, and adjust internal policies to align with technological changes.

In practice, organizational support for FinTech adoption can be realized through the establishment of digital transformation units, the provision of research and innovation funds, and cooperation with technology companies. This model has been adopted by several central Islamic banks in Indonesia, such as Bank Syariah Indonesia (BSI), Bank Mega Syariah, and Bank Muamalat Indonesia, which are now developing open banking systems and integrated digital applications. This strategy aligns with the DOI approach, which emphasizes the importance of organizational readiness and communication networks in reinforcing the diffusion of innovation (Rogers et al., 2014). Therefore, conceptually, organizational support acts as a key catalyst, transforming technology from mere tools into transformative forces. When organizations provide space for employees to experiment and collaborate, the rate of FinTech adoption increases significantly. Thus, the organization's role is not only as a provider of resources but also as an agent of change that shapes innovation adoption behavior at the individual and institutional levels. Therefore, within the theoretical framework, it can be seen that the level of FinTech adoption in the banking sector cannot be separated from the organization's social context. Strong support from internal structures, leadership, and work culture determines the sustainability of digital innovation. In contrast, organizations that resist change or fail to build internal readiness tend to lag behind the competition in the digital finance industry. Thus, the DOI theory not only explains the process of spreading innovation but also asserts that innovation cannot thrive without the support of a strong social system within the organization.

Digital Literacy Affects The Adoption Rates of Remote Digital Sharia Finance

The global financial landscape and Islamic finance realms, following advances in digital technology, have been fundamentally reshaped. In the digitalization process, there are major opportunities to improve access to financial services, smooth out geographic imbalances inherent in development, and stimulate individual interests in the economy. However, the digital literacy level among Muslim communities, especially in remote rural areas where access to online resources is limited or even nonexistent, presents a significant challenge that must be met. Although various innovations such as sharia mobile banking, sharia fintech, and sharia QRIS-related payments have occurred, their use is not yet as widespread because the public's knowledge about technology and its data security and sharia financing principles in a digital age is still not sufficient (Choerudin et al., 2023; Nugroho, Putra, et al., 2025). Digital literacy in Islamic finance does not only refer to the ability to use technology. It also covers matters such as Sharia principles, information security in the digital environment, and faith in an Islamic ethics-based digital financial system. All these factors could affect the success or failure of a particular product within a given market.

According to information from the Financial Services Authority (OJK, 2023), Indonesia's national financial inclusion rate is 85 percent, but Islamic finance inclusion figure estimates sit at 13%. This huge discrepancy indicates that the factor of digital literacy plays a crucial part in speeding up or limiting the spread of Islamic finance innovations. Rogers et al. (2014) defined 5 stages in the diffusion of innovation: knowledge, persuasion, decision, implementation, and confirmation. People or communities in the early stage can understand innovation gradually. In the context of

Islamic finance, initial capital for public acceptance of and recognition with Sharia-financial technologies consists in digital literacy. Without proper digital literacy, people are often afraid or skeptical about new products because they do not have a true grasp on their security or whether they live up to Sharia principles (Nugroho, Oktris, et al., 2025; Ridwan et al., 2023; Sholihah & Nugroho, 2025). Communication factors and social networks play a very important role in the dissemination of innovation. People who have high levels of digital literacy learn and absorb information more easily, discuss the merits of a new product, and decide whether to adopt it or remain unshaken. On the flip side, individuals with low levels of technological literacy just use social platforms to convey news about sharia into their consciousness. Hence, the function of digital literacy is not just to enhance technical competences but also to reinforce a variety of social and psychological factors affecting Sharia FinTech adoption.

Research by Minanari et al. (2024) and Nugroho et al. (2020) indicates that the digitalization of Islamic banking offers a significant opportunity to expand people's financial access. However, the success of adoption depends on users' digital literacy. People who understand the benefits and security of technology are quicker to adopt Islamic finance applications than those who still use manual systems. It was also revealed that trust to the digital Islamic financial system will be elevated when they have been increasing their digital literacy through lifelong learning, particularly among rural communities. In the context of user behavior, digital literacy impacts perceived usefulness and perceived ease of use, which are chronicled to be major antecedents of innovation adoption. This view is related to the relative advantage and ease of use concepts, explaining that use of an innovation will be accepted if it is perceived as being truly advantageous relative to its alternatives and being perceived as being easy to use (Adriansah et al., 2025; Kasmoo et al., 2025). In this context, individuals with high digital literacy will be faster to adopt Islamic financial services because they can evaluate their benefits rationally and understand their operational mechanisms. On the other hand, for people with low digital literacy, technological complexity is the main obstacle to the diffusion of innovation. Research (Rachman & Nugroho, 2024; Ramadhani & Nugroho, 2024) stated that digital literacy has a positive correlation with the adoption of sharia FinTech in rural areas, where people with better digital skills tend to trust sharia digital financial platforms more because they can understand their security aspects and their relationship with sharia principles. Meanwhile, Darmaningrum et al. (2023), Fasa et al. (2020), and Nugroho et al. (2019) highlight the role of Islamic financial institutions in improving people's digital literacy. The research confirms that sharia-based digitalization training organized by Islamic banks can increase trust and participation among new customers. They also emphasized that digital literacy serves as a diffusion accelerator—a factor that speeds the spread of innovation within the Islamic social system. Furthermore, Imani et al. (2023) emphasized that digital literacy is not only about technical skills but also encompasses ethical and Shariah awareness. Many people are already familiar with Islamic financial applications but have not understood the procedures for using them safely and in accordance with Islamic principles. This condition creates a gap between awareness and actual adoption behavior. Therefore, comprehensive digital literacy must include aspects of technology education as well as Sharia moral values in the practice of digital transactions. Within the framework of DOI, people's digital literacy levels can determine their position in the adopter category: innovators, early adopters, early majority, late majority, and laggards. Highly literate individuals are generally early adopters who act as agents of social change, introducing

and educating other communities about the benefits of Islamic FinTech. They also often serve as social references for their communities, reinforcing observability and trialability—two important attributes in the process of diffusion of innovation (Moore & Benbasat, 1991; Nugroho, 2021). Research by Ramdani et al. (2024) also supports these findings, showing that digital literacy strengthens public trust in technology-based financial systems. The study explained that increasing digital understanding makes customers more courageous to try new services such as digital zakat, e-mudharabah, and sharia-based peer-to-peer lending. This trust grows as public awareness grows that digital services can support the principles of fairness and transparency that underpin the Islamic financial system. From an organizational perspective, digital literacy also influences the strategies of financial institutions as they expand their service offerings. Islamic banks with a high level of digital literacy will be more adaptable to technological changes and able to develop innovations that are relevant to customer needs. In addition, according to Bairizki et al. (2021), the success of technology adoption in Islamic financial institutions depends heavily on the organization's internal capacity to enhance employees' digital literacy through training, culture transformation, and inclusive digital policies.

In principle, digital literacy served to bolster the relationship between innovation features and adoption decisions. These innovation characteristics, as Rogers et al. (2014) pointed out, affect the speed of acceptance for them: relative advantage, compatibility, complexity, trialability, and observability. In the context of Islamic finance, digital literacy allows for a better appreciation of these five attributes. If digital technology is understood by people, they will find it easier to appraise the relative advantages of Islamic FinTech, adapt it in line with their religious values (compatibility), overcome difficulties in using app technology (complexity), try out features by themselves privately as required (trialability), and witness other successful operations (observability). The results of Ajijah et al.'s (2025) research show that digital literacy positively influences behavioral intentions to adopt Sharia FinTech among Indonesian Muslim millennials. The younger generation with access to high technology shows greater interest in using sharia-based digital financial services than previous generations. This phenomenon reinforces Rogers' view that groups with greater access to information and higher literacy are the main drivers of innovation diffusion in society.

In the context of national economic development, increasing digital literacy also contributes to achieving the goals of *maqāṣid al-syarī'ah*. With the increasing adoption of digital Islamic finance, the community is expected to avoid usury, expand access to halal financing, and strengthen economic welfare grounded in social justice. This aligns with the findings of Hasan et al. (2022) and Nugroho (2021b), who emphasized that digital literacy plays a strategic role in encouraging an inclusive and equitable financial system in Indonesia. At the same time, digital literacy continues to determine the speed of Islamic financial services adoption. The higher the community's digital literacy, the greater its capability in understanding and evaluating technologies that are based on Islamic financial services. On the basis of the theory of DOI, digital literacy speeds up the dissemination of knowledge and persuasion stages in the adoption of innovative technologies. Ultimately this increases the probability that one will buy a sharia-based digital finance system. Broadly speaking, digital literacy has proven a key factor in the success of Sharia FinTech adoption. According to the theory of Diffusion of Innovation, adoption of financial technology depends not only on the innovation but also on the

cognitive readiness, social ethos, and spiritual orientation of a society ready for change. So enhancing everyone's digital literacy is very important to make it equitable and sustainable for Islamic finance organizations as well as the government to participate in the digital revolution with everyone (Labetubun et al., 2021; Widodo et al., 2022).

Infrastructure Determines The Effectiveness of The Digitalization of Islamic Financial Inclusion

During the COVID-19 pandemic, the old digital infrastructure of many African countries failed. Based on their potential economic strength, those countries that had not embraced digitalization and were already lacking efficiency went into a death spiral. The digital technology revolution in all respects has drastically changed pathways of financial service provision. Digitalization is not only a sign of modernization within Islamic economic thinking, but it also represents a strategic approach to promoting financial inclusion. That includes the domain of Islamic finance as well. Digitalization, however, relies heavily upon the accessibility and quality of infrastructure. Ricketty infrastructure systems such as internet networks, electricity, digital data systems, and financial service centers form major obstacles to achieving comprehensive financial inclusion, particularly in outlying areas. As an archipelago nation, Indonesia faces the huge challenge of implementing equitable digital infrastructures. According to a report by Indonesia's Financial Services Authority (OJK, 2023), the national financial inclusion index has reached 85%, while the Islamic financial inclusion index is only 13%. This disparity indicates that while Islamic Financial Technology (Islamic Fintech) is advancing rapidly, suboptimal infrastructure continues to limit people's access to digital Islamic financial services. In the Diffusion of Innovation Theory, the environment for innovation is networked. This serves as a structural framework that dictates the rate and extent of passing on ideas. With the emergence of online communities, the network structure has become very important for spreading and rapid adoption of new innovations. As Rogers et al. (2014) Rogers points out, the distribution of innovation is not only determined by the nature of innovation itself, for instance, how much better an innovation is over the old 'state,' but also a social network and environmental conditions if it help make an adoption more likely. In this set of circumstances, digital infrastructure functions as a catalyst. How can individuals start to experiment and embrace technology-driven Islamic financial services? Research by Vidyaningrum et al. (2023) discovered that low-quality infrastructure in many parts of Indonesia has resulted directly in a digital divide that directly damages levels of Islamic financial inclusion amongst those seeking to live rural lives. The presence of fintech has opened up opportunities for financial access in rural areas, but as Vidyaningrum et al. (2023) point out, its strength is restricted by low levels of digital infrastructure and other traditional factors such as poor internet networks. Residents in remote areas often face these kinds of difficulties making digital transactions safe. Especially if they live in mountainous areas, the signal is weak, and there somehow always seems to be too little support in place for banking agents or financial service centers headquartered there. This limited infrastructure not only slows uptake but also undermines public confidence in digital financial services. That is why, according to the DOI theory, in the persuasion stage—the phase when people form attitudes to innovation—experiences are always more important than evidence. When the infrastructure doesn't provide a smooth user experience, such as when transactions are stuck pending or frequent application failures are experienced, then people will naturally be repelled. This means that the public is hesitant to turn their mind to decision and

implementation in the adoption process of innovation, especially when projects do not proceed overnight. In their opinion, not only technology innovation but infrastructure readiness and regulatory support are basic factors contributing to the success of Islamic banking digitalization. Today's Panorama page reports on work done by Irwansyah et al. (2021) and Nugroho et al. (2024) whose research convinces that mobile banking and digital payment systems can make Islamic banking more efficient and transparent. However, when it comes to customers in rural areas—even those who use it to a lesser extent—network constraints and poor-quality technology services represent significant burdens. In addition to physical factors, infrastructure includes institutional and public policy aspects.

Bank Indonesia and KNEKS (National Committee for Sharia Economics and Finance) have initiated the Sharia Digital Ecosystem strategy, which aims to integrate the Islamic banking system with national digital infrastructure, including interoperability between platforms and the expansion of the digital agent banking network. The program is currently in its initial phase of implementation, with its effectiveness heavily reliant on the collaboration between public and private entities to establish dependable and secure digital infrastructure. Additionally, various prior research efforts have demonstrated that Islamic fintech possesses significant possibilities for enhancing financial inclusion at the community level; however, this potential remains underutilized due to inadequate technological infrastructure in numerous areas. The success of the Islamic digital economy is closely tied to the preparedness of essential support systems, including broadband networks, Islamic data centers, and cybersecurity measures aligned with Islamic ethical principles (Adipurno, 2025; Nugroho, Melzatia, et al., 2024). From the perspective of Diffusion of Innovation Theory, infrastructure can be categorized as part of the contextual variable that affects the speed of diffusion wherein, in a complex social system, the dissemination of innovation cannot take place effectively without the support of adequate communication structures and technological means. This means that in the context of Islamic finance, effective digitalization must be supported by an ecosystem consisting of internet networks, digital security systems, supporting institutions (such as digital BMT), and regulations that are adaptive to innovation. The same phenomenon is also found in research from Safitri & Putri (2025). As a result, issues such as the Islamic financial sectors should be able to play in lifting people out of poverty and financial integration that still faces severe bottlenecks because there is no technologic infrastructure or regulations in place limiting its role. One of three principal elements used lawfully to construct the necessary infrastructure for financial access—home construction, spending approval and this aspect dealt with smokehouses (where in effect, industries lie) The building of infrastructure that will support the expansion of halal financial access in a sustainable and inclusive manner depends not only on industry but also on governments and communities. So infrastructure also carries a vital social dimension. The need to create digital services for all residents must be well coordinated with the expected usage of such services by residents in an area, particularly rural areas. For example, many people in rural areas still rely on the cash economy because of a lack of public utilities, and their telecommunications needs are not met laterally by Islamic finance agents. Surprisingly, nearly all the Finnish original innovators are found on the list of active DOI, while Swedish social efforts yield only a fraction thereof. Societies like this are considered the late majority or even laggards within the framework of DOIs: their adoption processes

are longer due to structural and social barriers so they don't join in with new things at all. Initially the construction of digital infrastructure is not simply a technical matter. It forms part of social innovation and its implementation requires collective efforts and changes in group behavior as well. Increasing internet access, the provision of fintech agent services and combining shariah digital services into government platforms can greatly speed up the spread of new technologies to communities that previously were out-of-reach, writers of inconspicuous yet influential little bits of history.

In addition to network infrastructure, the reliability of digital security systems is an important factor in the effectiveness of sharia-inclusive digitalization. Trust is a key factor in the adoption of innovation, according to the DOI. Without guaranteed data security and privacy protection, users tend to be hesitant to transact digitally. In Islamic finance, trust is closely linked to moral values and adherence to Islamic principles. Therefore, strengthening cybersecurity infrastructure is an important prerequisite for building a sustainable Sharia digital ecosystem. Previous research by Asriyana et al. (2025) shows that in South Sulawesi, digital security risks are among the main reasons people are reluctant to use fintech services, even though these services are more economically efficient. Low digital literacy and weak security infrastructure keep people's reliance on cash transactions high. These findings align with the DOI theory, which holds that perceptions of risk and uncertainty are the main obstacles to persuasion and decision-making. In addition, the effectiveness of digitalizing Sharia inclusion is influenced by the Sharia financial organization's infrastructure capacity. Islamic banks and Islamic microfinance institutions with integrated information technology systems are better able to provide fast, safe, and sharia-compliant digital services. This is supported by the research of Fitri et al. (2025), which confirms that adopting blockchain technology and digital payments accelerates Islamic financial transactions and reduces operational costs.

In a global context, investing in digital infrastructure is increasingly one of the priority strategies for many Muslim nations. Countries like Malaysia and the United Arab Emirates have succeeded in developing the Islamic Digital Economy Framework, where ICT has converged with the Islamic financial sector. Their success demonstrates that a solid infrastructure accelerates the process of innovation dissemination and broadens the penetration of sharia-based financial services into grassroots society. The DOI application in the Indonesian context shows good infrastructure as a stimulator in the diffusion of the innovation process at every stage. On the knowledge level, infrastructure facilitates the public learning about digital Islamic financial products. During the persuasion phase, digital service acceptance and perceived enjoyment grow stronger. During the realization and verification phase, however, a dependable foundation vouches for the continued utilization and strengthens customer retention. In this way, infrastructure itself becomes more than physical hardware but also a sociotechnical basis for the successful digital transformation of the Islamic economy. With good infrastructure growth, digital Islamic finance services, such as online zakat, waqf mobile, and digital halal investment, are more accessible to a wider segment of the population and can support increasing fairness in the distribution of implementation in the Islamic economy. Moreover, in the comparative and literature review analysis, it is pointed out that in the digitalization of sharia access, success is mostly influenced by three dimensions, namely a) physical infrastructure (network facilities, electricity, and devices), b) institutional infrastructure (regulation and policy), and c) social infrastructure (literacy and user behavior). Together, the three constitute an integrated network that explores how innovations in Islamic finance are applied by Indonesian society.

CONCLUSION

Though Islamic finance is a relative newcomer, the age of digital automation has brought many opportunities for the financial industry as a whole. Enterprises in remote areas can conduct transactions without having to rely on the traditional banks or enterprises near them. Currently traditional banks level rates at all, and the use of intermediaries Push up costs to service as well. Our result · of truth Is it right But Sharia QRIS to We can quickly accomplish our tasks in this medium: Payment systems provide fair access for everyone yet also help achieve the goals of economic justice—one objective being to provide rich people with enough profit that they will not starve to death. At a first glance the data suggests that the implementation of financial services which are oriented to Islamic approaches has done digital literacy has had a significant people-oriented effect. The type of people who know both technology and Islamic financial ideas also tend to be more open-minded on new things, and they are able to grasp the complexities of digital security issues. Moreover, this group is consistent in its practice; for example, neither Western nor Chinese law makes any difference, yet their children are still born in our hospitals because we are primary residents here. The person who wrote this book will turn 84 degrees Celsius next week If this literacy is missing, however, there may be a gap between awareness and behavior. This would be a gap identified in a Diffusion of Innovation Theory, both for the knowledge stage and as it moves on to the persuasive communication stage.

The infrastructure is crucial to the effective exertion of digital financial inclusion; it determines how fast new technologies are applied to communities where residents already live. The quality of internet, access to electricity, and a variety of ancillary facilities also have an influence on how quickly any such innovations can be adopted. Poor infrastructure may disrupt the user experience with digital services, affecting the implementation of innovations and negating this stage in the diffusion process. In order to build momentum for diffusion, findings suggest that the digitalization of Islamic financial inclusion relies significantly on cooperation among government entities, regulators, and financial institutions. This can help enhance the Sharia Digital Ecosystem; it ensures fair access to networks and increases cybersecurity in accord with Islamic moral values.

This study, limited by using secondary data and qualitative descriptive methods, does not allow for the measurement of quantitative relations between digitalization literacy levels, infrastructure, or Islamic financial inclusion in various regions Hence, future research employing mixed methods is proposed to further study causal relationships between these variables; focus on the plight of rural communities will be widened as well From the perspective of practical considerations, Islamic financial institutions should strive to realize community-oriented digital literacy through mosques and Islamic public schools, make digital products that are both clear and secure, and protect clients' personal information well Nonetheless, from a policy view, Indonesia has to develop digital infrastructure and cross-industry cooperation in order for digitalization to be a tool promoting fair wealth allocation to all levels of society and sustainable economic growth—though doing it collectively will not be easy.

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