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Collaboration Between Islamic Banks and FinTech: Ethical and Regulatory Challenges, Human Resource Readiness

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Abstract

Objective: This article aims to analyze the collaboration between Islamic banks and FinTech, with particular emphasis on ethical challenges and human resources (HR) readiness to support the sustainability of the digital Islamic finance ecosystem. The study explores how technological innovation can be aligned with Sharia principles while maintaining institutional integrity and competitiveness.
Method: This study employs a descriptive qualitative approach using a literature review method. Data were collected from Indonesian-language academic journals and scholarly publications related to Islamic banking, FinTech, Islamic business ethics, digital transformation, and human resource development. The collected literature was analyzed thematically to identify major trends, challenges, and opportunities in the integration of Islamic banking and financial technology.
Results: The findings reveal that collaboration between Islamic banks and FinTech contributes significantly to improving service efficiency, accelerating financial inclusion, expanding access to Sharia-compliant financial services, and enhancing customer experience. Nevertheless, several challenges remain, including ethical gaps in digital transactions, potential risks of Sharia non-compliance, inadequate digital literacy, limited technological capabilities, and insufficient understanding of *fiqh muamalah* among human resources involved in digital financial services.
Implication: These findings highlight the need to strengthen Islamic business ethics, improve digital competencies, and provide continuous *fiqh muamalah* training for human resources. Furthermore, Sharia regulation and supervisory mechanisms should be adaptive and responsive to technological developments.
Novelty: This article identifies a gap in previous studies by demonstrating that the success of digital collaboration depends not merely on technological adoption but also on the balanced integration of Islamic ethical values, HR readiness that combines digital literacy and *fiqh muamalah* competencies, and adaptive Sharia governance within the evolving digital financial ecosystem.

Introduction

Financial Technology (FinTech) is a rapidly growing industry, particularly within Indonesia's financial services sector (Gull et al., 2025). Peer-to-peer lending, digital payment systems, online investments, and other innovations brought by FinTech make it easier and more inclusive for the public to access financial services. (Syifa et al., 2024) . Fintech offers a variety of financial services that are more efficient, faster, and more accessible to the public. By leveraging technology, fintech enables financial service providers to offer practical, flexible solutions for their customers. Fintech is regarded as the latest breakthrough in the financial services industry by adopting digital transactions that do not rely on physical cash (cashless) (Rozi et al., n.d.). Fintech can be a key driver of enhanced public access to financial services, particularly for those seeking convenience without geographic or time constraints. Meanwhile, for Fintech operators themselves, Fintech has the potential to improve operational efficiency and daily activities (Sarea et al., 2022).

The development of financial technology (fintech) has brought significant transformation to the global financial services sector, including in Indonesia. As the country with the world's largest Muslim population, Indonesia possesses immense market potential for the development of the Islamic economy. (Triwibowo & Adam, 2023). Sharia fintech, which combines Islamic financial principles with modern technological innovations, has emerged as a solution capable of meeting the financial needs of communities that were previously difficult for conventional banking to reach. The growth of fintech in Indonesia is evident in the significant increase in fintech startups, supported by a rise in middle- and upper-class consumers who are adopting digital financial services. (Mun'im, 2024) .

Sharia fintech in Indonesia has grown rapidly in recent years. According to the Financial Services Authority (OJK), the number of sharia fintech platforms continues to rise alongside growing public demand for halal, sharia-compliant financial products. (Ali et al., 2020). However, this rapid growth also raises questions about how to ensure compliance with Sharia law within a digital ecosystem that is often highly dynamic and difficult to regulate effectively. Legal challenges in implementing Sharia fintech in Indonesia are not limited to regulatory requirements that industry players must meet; they also extend to how the government and regulators can keep pace with technological advancements. Existing regulations are sometimes considered inadequate to accommodate various fintech innovations, particularly Sharia-based fintech, which has unique characteristics. Therefore, there is an urgent need to create a clear and comprehensive legal framework that not only facilitates innovation but also ensures consumer protection and compliance with Sharia principles. (Jannah & Sya'diyah, 2024) .

Sharia fintech offers an efficient, accessible, and Sharia-compliant digital approach. Studies indicate that the use of fintech can increase financial inclusion among SMEs by up to 9%, and, in particular, the cashless society model has proven to have a significant impact on the financial knowledge and attitudes of SME operators. (Zulfa, 2025) . Given this potential, it is necessary to explore further how Sharia fintech can play a strategic role in accelerating sustainable Sharia financial inclusion.

However, it turns out that sound business ethics has not accompanied the development of fintech as a platform for financial transactions among fintech operators. The practices employed by illegal fintech entities in conducting their operations within the financial services industry are far removed from business ethics, which require proper conduct, including in the collection of overdue loans from their customers. Collection practices involving physical and non-physical violence are in stark contrast to the norms and values fostered within the dignified financial services industry. (Thayib & Ajuna, 2022).

Financial inclusion remains a strategic challenge in Indonesia, where segments of the population—particularly in remote areas and economically vulnerable groups—still lack access to formal financial services. On the other hand, the digital revolution and widespread internet penetration have created opportunities for transformation through technology-based financial services (fintech). In the context of Sharia, integrating Islamic financial principles with digital innovation (Sharia fintech) has the potential to address inclusive needs while ensuring ethical and transparent transactions. (Ruhliandini, n.d.)

Innovations in digital services have proven to impact the performance and operational efficiency of Islamic banking positively. The implementation of services such as mobile banking, internet banking, and digital payment systems based on Sharia principles has expanded market reach and strengthened the relationship between banks and customers. Several key factors, including ease of use, trust in security systems, and alignment of services with Sharia principles, influence customers' decisions to use Islamic banks' mobile banking services. These factors play a crucial role in increasing customer interest and loyalty toward Islamic banking digital services. (Sari, 2025) .

In recent years, digital transformation has become a key factor in enhancing the competitiveness of the banking industry, including Islamic banks. The digitalization of Islamic banking not only drives operational efficiency but also expands financial inclusion for communities that previously lacked access to conventional banking services. Digitalization also enables Islamic banks to develop technology-based products and services that align with Sharia principles, thereby providing a better banking experience for customers. Additionally, the adoption of financial technology (fintech) in Islamic banking has contributed to improved efficiency, transparency, and transaction security. This has become highly relevant amid the rapid growth of the digital financial industry and the rising demand for technology-based banking services (Tiara Adelia Putri et al., 2025). However, the digital era also brings significant challenges, including strict regulations, cybersecurity threats, and limited public understanding of Islamic finance.

Given these issues, this article is necessary because collaboration between Islamic banks and FinTech is growing rapidly. At the same time, business ethics, human resource readiness, and Sharia compliance remain weak in many areas of practice. Numerous cases of illegal FinTech demonstrate that technology is not always balanced by proper governance and competent human resources. Regulations often lag behind digital innovation, thereby risking Sharia violations and eroding public trust. Sharia financial inclusion is indeed increasing, but it remains uneven and is not always ethical. Sharia bank personnel still face gaps in digital literacy and understanding of Sharia principles. This article is important for providing a scientific foundation affirming that the success of collaboration between Islamic banks and FinTech depends heavily on strengthening ethics, human resource competencies, and governance in accordance with Sharia principles, thereby ensuring the sustainability of Indonesia's Islamic digital financial ecosystem.

Literature Review

Collaboration between Islamic banks and FinTech is a key strategy for strengthening the Islamic digital financial ecosystem, as FinTech can expand access to services, increase transaction speed, and reduce banks' operational costs. Sharia FinTech helps Islamic banks reach communities not yet served by formal banking services through digital platforms, particularly in microfinance and payment systems (Azmi et al., 2025). The success of this collaboration is heavily determined by the readiness of human resources who master digital technology and fully understand Sharia principles. Research indicates that low levels of Sharia financial literacy may lead to misunderstandings of digital products, necessitating that banks strengthen internal training and customer education (Gull et al., 2025; Tajudin et al., 2024). Robust and adaptive regulations also help ensure compliance with Islamic principles, such as prohibitions on riba, gharar, and maisir, thereby preventing innovations that deviate from Sharia values. Sharia financial literacy must also be enhanced so that users understand Sharia-compliant digital products, not merely their technological features. High literacy reduces the risk of misuse, fraud, or practices inconsistent with Sharia (Zahra & Eko Ribawati, 2025).

Sharia FinTech directly contributes to increased financial inclusion by opening access to financing and digital services for SMEs and communities previously underserved by banks. Digital platforms accelerate the financing application process, reduce transaction costs, and simplify financial record-keeping for small businesses. However, the effectiveness of Sharia FinTech is heavily dependent on the ability of human resources to provide practical, clear, and Sharia-compliant education. (Tajudin et al., 2024). Research indicates that users' limited understanding of contracts, risks, and Sharia obligations can erode trust and undermine service sustainability. Competent human resources can explain contracts such as murabahah, mudharabah, or musyarakah in simple terms so that users understand their rights and obligations. Strong support for Sharia ethics and literacy also prevents the misuse of technology and ensures that services remain consistent with Islamic values. (Muchtar & Zubairin, 2022) .

From an Islamic legal perspective, Sharia FinTech requires a strong understanding of Sharia compliance, particularly the prohibitions against riba, gharar, and maysir, which form the foundation of Islamic financial transactions. (Tajudin et al., 2024) . A lack of understanding among Sharia bank staff of contract concepts, risk mechanisms, and return structures can lead to the development of technically advanced digital services that deviate from Sharia principles. Research indicates that many Sharia compliance violations in FinTech stem from low literacy in fiqh muamalah and insufficient reinforcement of digital ethics within financial institutions. Personnel who do not understand Sharia boundaries may incorrectly apply murabahah, musyarakah, or mudharabah contracts on digital platforms, thereby introducing ambiguity and speculation. Therefore, strengthening Sharia competence and digital ethics is key to ensuring FinTech innovations remain aligned with Islamic law and maintain user trust. (Aziz, 2020)

Digital transformation in Islamic banking poses serious challenges to Sharia compliance, as the shift of services to digital platforms often outpaces the readiness of Sharia oversight and human resources. Digitalization alters contract processes, transaction recording, and risk management, thereby creating the potential for hidden riba, gharar, and maysir due to a lack of transparency in systems. Research indicates that the Sharia Supervisory Board's limited role in the development of digital products increases the risk of Sharia non-compliance. Human resources that lack an understanding of fiqh muamalah and technology tend to focus solely on system efficiency without evaluating the contractual structures employed. This situation erodes customer trust and weakens the legitimacy of Islamic banks in the digital era. Therefore, digital transformation must be accompanied by strengthening Sharia competencies, digital ethics, and integrated oversight mechanisms to ensure that innovations remain compliant with Islamic law (Hidayat, n.d.).

The role of FinTech in enhancing the efficiency of Islamic banking information systems is evident in the acceleration of service processes, including financing, payments, and real-time transaction reporting. Digital technology helps Islamic banks reduce operational costs and recording errors, thereby making services more accurate and transparent for customers. However, the effectiveness of FinTech remains limited if human resources do not understand both the technology and the operational principles of Islamic banking simultaneously. FinTech integration requires personnel capable of managing data, understanding information-system workflows, and ensuring that transactions align with Sharia principles. (Puput Indriyani & Iyan Maulana Utama, 2024).

The digital literacy and competency readiness of human resources are key factors in the successful adoption of FinTech technologies in Islamic financial institutions, as technology is only effective when implemented by competent personnel. Research indicates that the readiness of human resources to address digitalization still varies across job positions, particularly between managerial and operational levels, thereby creating gaps in technology implementation. Digital competencies such as data analysis, understanding of information systems, and cybersecurity are essential for HR to manage risks, safeguard customer data, and support technology-driven decision-making. Without structured digital literacy development, FinTech adoption risks being suboptimal and may focus solely on system use rather than strategic understanding. (Yuli Alam & M Bambang Purwanto, 2025) .

Adaptation strategies and efforts to enhance human resource (HR) competencies in Islamic banking indicate that HR development must focus on continuous training to address digital disruption effectively. HR personnel need to be equipped with digital competencies, including information systems management, data analysis, and an understanding of technological risks, to ensure that bank operations remain efficient and compliant with Sharia principles. The study also confirms that Islamic banks that routinely enhance their HR capacity exhibit more effective technology adoption and lower operational risk. Without a planned HR development strategy, HR readiness risks falling behind the pace of technological innovation. (Ramadani, n.d.).

Sharia FinTech presents significant challenges for literacy and regulation because digital services must comply simultaneously with Sharia and applicable laws. Unprepared human resources risk neglecting consumer protection, contract transparency, and data security. Strong regulations are needed to guide innovation so that it remains compliant with Islamic law and protects customer rights. Studies in Indonesia confirm that strengthening human resource competencies and establishing a clear regulatory framework enhance public trust in Sharia FinTech while reducing legal and operational risks. (Farman, n.d.) .

Sharia FinTech drives the expansion of banking services, including microfinance, digital payments, and e-wallets, thereby facilitating access to finance for SMEs and low-income communities. Digital services accelerate application processes, reduce transaction costs, and enhance financial data transparency. However, research indicates that human resource readiness remains a major challenge, as many digital service providers do not yet understand how to apply Sharia contracts in technology-based systems. This weakness has the potential to lead to contractual errors, a lack of transparency, and violations of the principles of riba, gharar, and maysir. Continuous education and training are essential solutions to ensure that human resources can consistently integrate digital competencies with fiqh muamalah. Studies in Indonesia confirm that enhancing HR capacity directly impacts Sharia compliance and the sustainability of Sharia FinTech services. (Handayani et al., n.d.) .

Studies indicate that strengthening digital skills and Sharia ethics among Sharia bank personnel is a strategic factor in maintaining customer trust and the sustainability of the Sharia financial ecosystem in the digital age. Personnel who understand technology without a foundation in Sharia ethics risk misapplying contracts, neglecting transparency, and weakening customer protection. Sharia banks that invest in digital and Sharia ethics training

Research Methodology

This research employs a literature review to analyze the collaboration between Islamic banks and FinTech, focusing on ethical challenges and human resource readiness. The researcher selected this method because the issues under examination are conceptual, normative, and empirical in nature, and have been extensively discussed in previous research. A literature review allows the researcher to systematically and thoroughly collect, compare, and synthesize various relevant scientific findings. This research is descriptive and qualitative in nature. A qualitative approach was chosen because the research objective is not to measure statistical relationships but to understand the patterns, concepts, and trends in the thinking of previous researchers. The researcher focuses on how the literature explains the forms of collaboration between Islamic banks and FinTech, the ethical risks that arise, and the level of human resource readiness in facing the transformation of Islamic digital finance in Indonesia.

The research data sources are scientific journals that discuss topics such as Islamic banking, FinTech, business ethics, fiqh muamalah, digital transformation, and human resource management. The researcher selected accredited national journals and open-access scientific journals from Islamic universities. The selection of open-access journals aims to ensure source transparency and facilitate data verification by readers.

The data collection process was conducted through searches of online journal databases, including university and national journal portals and academic institutional repositories. The researchers used relevant keywords, such as Islamic banking, Islamic FinTech, Islamic business ethics, human resource readiness, digital literacy, and digital transformation in banking. These keywords were used separately or in combination to obtain literature aligned with the research focus.

The researcher established inclusion criteria for literature selection. The journals used must address the Indonesian context, be written in Indonesian, and be directly relevant to the themes of collaboration between Islamic banks, FinTech, ethics, or human resources. The researcher prioritized articles published within the last ten years to ensure the study's findings reflect the current state of the digital financial industry. Articles without a direct connection to the research focus were excluded.

After the selection process, the researcher grouped the literature based on main themes. These themes include the development of Islamic FinTech, forms of collaboration between Islamic banks and FinTech, ethical challenges in digital financial services, Sharia compliance, HR readiness, digital literacy, regulation, and consumer protection. This grouping helps the researcher construct a structured analysis with interconnected concepts.

The data analysis technique employed was qualitative content analysis. The researcher carefully read each article to identify key ideas, significant findings, and relevant arguments. The researcher then noted similarities and differences in the authors' perspectives. This analysis aimed to identify common patterns regarding ethical challenges and human resource readiness in collaborations between Sharia banks and

FinTech. To ensure data validity, the researcher cross-checked sources. If multiple journals addressed the same issue, the researcher compared their results and conclusions. Consistency of findings across the literature strengthens the validity of the analysis. Differences in perspectives were also noted as discussion points to highlight the complexity of the challenges in collaboration between Islamic banks and FinTech.

The limitations of the literature review method are acknowledged in this study. The research did not involve primary data such as interviews or surveys, so it does not capture the direct experiences of industry practitioners. However, this limitation is offset by the use of credible sources and in-depth analysis. A literature review remains relevant for establishing a strong theoretical and conceptual foundation. Using this method, the study identified existing research gaps. Some literature indicates that the ethical readiness of human resources in addressing advanced technologies such as artificial intelligence and automation is rarely discussed. This finding opens opportunities for further empirical and applied research.

Overall, the literature review method allows researchers to present a comprehensive overview of the collaboration between Islamic banks and FinTech in Indonesia. This method helps explain how ethical challenges and HR readiness determine the success of Islamic digital financial transformation. The results of the analysis are expected to serve as an academic and practical reference for policy development, HR strengthening, and the application of ethics within the Islamic digital financial ecosystem.

Results and Discussion

Results

The findings of this study were obtained through a systematic analysis of Indonesian-language scientific journals on collaboration between Islamic banks and FinTech, with a focus on ethical challenges and human resource readiness. The literature review indicates that collaboration between Islamic banks and FinTech in Indonesia is growing rapidly alongside the increasing digitalization of financial services. Islamic banks leverage FinTech to expand their service reach, enhance operational efficiency, and address customer demand for fast, digital-based services. FinTech serves as a strategic partner in providing payment systems, digital financing, and app-based services.

The study's findings indicate that this collaboration has a positive impact on Islamic financial inclusion. Digital financial services enable communities previously unreached by formal banking to access Sharia-based financial products. SMEs are the group that benefits the most, as the financing process becomes simpler and faster. However, this increased access also raises new challenges related to supervision, ethics, and consumer protection.

From a business ethics perspective, the research findings reveal a gap between the ideal principles of Sharia and on-the-ground practices. Some literature notes that digital financial services still exhibit practices that do not fully reflect the values of justice, transparency, and accountability. Aggressive collection practices, a lack of clarity in digital contracts, and insufficient customer education are common ethical issues. This situation indicates that technological collaboration without strengthened ethical frameworks risks eroding public trust in Sharia financial institutions.

Research findings also indicate that the complexity of digital transactions poses new challenges in maintaining Sharia compliance. Contracts conducted via digital platforms are often simplified for the sake of service speed, thereby risking the obscuring of the substance of Sharia contracts. Several journals emphasize that contract ambiguity and a lack of customer understanding can introduce elements of gharar into transactions. This indicates that the strengthening of ethics and Sharia compliance must proceed hand in hand with technological innovation. In the context of human resource readiness, the research findings indicate that human resources are a key determinant of the success of collaboration between Islamic banks and FinTech. Much of the literature indicates that the human resources of Islamic banks are not yet fully prepared to meet the demands of digital transformation. Limitations in digital literacy, understanding of information technology, and digital risk management capabilities remain major obstacles. These conditions result in suboptimal FinTech implementation and the potential for operational errors.

Beyond technological aspects, HR readiness is also linked to an understanding of Sharia principles and business ethics. Research findings indicate that some HR personnel focus more on technical aspects and efficiency but lack a deep understanding of contemporary fiqh muamalah. In fact, an understanding of fiqh serves as a crucial foundation for designing Sharia-compliant digital financial products and services. This gap increases the risk of violations of Sharia principles in collaboration with FinTech.

The literature also indicates that HR's digital literacy directly affects service quality and customer protection. HR personnel with low digital literacy tend to be less capable of managing data security and transaction systems. Several journals note an increased risk of data breaches and information misuse due to weak internal oversight. This demonstrates that HR readiness affects not only efficiency but also the trust and security aspects of digital financial services. In terms of regulation, the research findings indicate that the existing legal framework is not yet fully adaptive to the evolving collaboration between Islamic banks and FinTech. Regulations often lag behind technological innovations, creating a gray area in the application of Sharia ethics and compliance. This situation requires Islamic bank staff to possess adequate regulatory understanding to align operations with applicable policies.

The research findings also indicate that Sharia oversight faces challenges within the digital ecosystem. Sharia supervisory boards are required to understand FinTech technologies and business models to conduct effective oversight. However, the literature suggests that Sharia oversight capacity remains limited to conventional approaches. This underscores the need to enhance the competencies of Sharia oversight personnel in understanding digital systems and technological risks.

From a management perspective, the research findings indicate that Sharia banks that successfully collaborate with FinTech prioritize human resource development as a strategic priority. Digital training programs, enhanced Sharia literacy, and the strengthening of an ethical culture have proven to support the success of digital transformation. Conversely, banks that neglect human resource aspects tend to face operational and reputational issues. The research findings also reveal that business ethics is inseparable from human resource readiness. Personnel who understand Sharia values and business ethics tend to be more cautious in managing digital services. They pay closer attention to customer protection and information transparency. These findings indicate that strengthening ethics depends not only on regulations but also on the quality of the personnel as service providers.

Overall, the research findings indicate that collaboration between Sharia banks and FinTech has significant potential to drive Sharia financial inclusion and efficiency in Indonesia. However, this potential is accompanied by serious challenges regarding ethics and HR readiness. Without strengthening ethics and enhancing HR competencies, this collaboration risks causing Sharia violations, eroding public trust, and hindering the sustainability of the Sharia digital financial industry. These findings underscore that technology, ethics, and human resources must be viewed as an integrated whole in the development of the digital Islamic financial ecosystem.

Discussion

Collaboration between Sharia banks and FinTech enhances access to digital financial services, particularly in the digital era, which demands speed, convenience, and inclusivity. Sharia FinTech can help expand the reach of Sharia banking services, including for SMEs and communities in remote areas. (Latief et al., 2024; Ruhliandini, n.d.) The study indicates that Sharia FinTech significantly contributes to digital financial inclusion in Indonesia, improving access to Sharia-principle-based financial services. Furthermore, Sharia banks' digital services, integrated with FinTech, strengthen public financial literacy and inclusion as the public becomes increasingly familiar with halal digital payment systems. (Nasir Tajul Aripin et al., 2022) .

However, the adoption of FinTech also raises complex ethical challenges within the Sharia context. The development of financial technology can pose risks of deviating from Sharia values if transaction principles are not properly managed. (Jannah & Sya'diyah, 2024) Highlight that Sharia-compliant FinTech in Indonesia faces legal and ethical challenges related to Sharia compliance, such as prohibitions on riba and gharar, despite the platforms being based on Sharia principles. This study reinforces the finding that FinTech growth must be accompanied by ethical control mechanisms to ensure digital services remain consistent with Islamic principles and uphold consumer protection.

Ethical challenges are closely linked to the need to internalize Islamic business ethics within Sharia-compliant FinTech companies. Research by (Thayib & Ajuna, 2022) emphasizes the importance of internalizing Islamic business ethics in Sharia FinTech services to ensure fair, transparent, and responsible practices. This aligns with research findings indicating that collaboration between Sharia banks and FinTech is not merely about technology adoption but also about fostering a strong ethical culture among industry players managing digital services.

The level of literacy and the readiness of human resources are critical issues in implementing Sharia FinTech services. Research by Chareonvong et al. (2025) and Fadhil et al. indicates that Sharia financial digital literacy influences public interest in adopting digital services, including those utilizing advanced technologies such as AI. This conclusion is consistent with research findings indicating that personnel with low technological literacy and limited understanding of Sharia principles will struggle to ensure digital services remain secure and compliant with Sharia values. Therefore, workforce readiness must encompass mastery of technology, ethics, and Sharia principles.

The role of FinTech in enhancing operational efficiency also impacts the need for technologically competent human resources. (Ath Thahirah & Kasri, 2023; Nguyen et al., 2024; Rofika Rofika et al., 2015) Demonstrate that integrating financial technologies, such as mobile banking and P2P lending, helps Islamic banks improve service accessibility and accelerate transaction processing. However, implementing such technologies requires human resources capable of effectively managing systems and understanding technological risks, such as data security and the compliance of transactions with Sharia principles.

Digital transformation, as observed in Islamic FinTech, also drives Islamic banks to enhance technology-based financial education and literacy programs. Research by Mujtahidah & Yazid indicates that digitalization at Bank Syariah Indonesia (BSI) focuses not only on technological development but also on Islamic financial literacy and inclusion education. (Mujtahidah & Yazid, 2025; Nasir Tajul Aripin et al., 2022; Thayib & Ajuna, 2022). This underscores that human resource readiness must include the ability to educate the public so that users of digital services not only access these services but also understand the values and risks associated with them.

Regulatory issues are an external factor influencing collaboration between Islamic banks and FinTech, as well as human resource readiness to apply Sharia principles. When regulations are not yet fully aligned with Sharia-based digital innovations, human resources often face uncertainty in implementing Sharia principles in digital services. This situation aligns with the literature, which indicates that both regulators and industry players need to enhance coordination to ensure the legal framework supports innovation without compromising Sharia compliance. Collaboration between Islamic banks and FinTech presents significant opportunities for Sharia financial inclusion. Still, the digital literacy gap among the public and HR personnel remains a challenge that must be addressed through comprehensive training programs.

Overall, the research findings indicate that collaboration between Sharia banks and FinTech in Indonesia yields tangible benefits for the accessibility and efficiency of Sharia financial services. However, to realize its potential sustainably, serious attention must be given to the internalization of business ethics, the readiness of human resources in digital literacy and Sharia jurisprudence, as well as adaptive regulatory support for Sharia digital innovation. Human resources play a central role in this transformation because competent personnel are not only capable of managing technology but also of upholding the integrity of Sharia values amidst digital transformation.

Conclusion

This conclusion underscores that collaboration between Islamic banks and FinTech is a critical strategy in addressing the accelerating digitalization of financial services in Indonesia. This collaboration presents significant opportunities to enhance operational efficiency, improve service accessibility, and expand Islamic financial inclusion. FinTech helps Islamic banks reach previously underserved communities, particularly SMEs and the unbanked, through fast and user-friendly digital services.

However, this study indicates that this potential has not yet been fully matched by ethical readiness and human resource capacity. Rapidly evolving technological innovations often outpace human resources' ability to understand ethical risks and Sharia implications. Many digital services remain focused on speed and efficiency but pay insufficient attention to contract clarity, information transparency, and customer protection. This situation risks violating Sharia principles and eroding public trust in digital Sharia finance.

Human resource readiness is a key factor in maintaining a balance between innovation and values. Sharia bank staff are required to master digital literacy, understand financial technology, and possess a strong understanding of fiqh muamalah and Islamic business ethics. When staff focuses solely on technical aspects, Sharia values risk being overlooked. Conversely, competent and ethical human resources can ensure that technology is used for the greater good rather than as a source of new problems. This study also underscores the importance of management and regulation. Strengthening human resource training, internalizing business ethics, and implementing adaptive Sharia oversight are strategic steps. Regulations that are responsive to digital innovation also help human resources operate within clear and safe parameters.

Overall, the success of collaboration between Islamic banks and FinTech is largely determined by the readiness of human resources and the strengthening of ethics. Technology alone is not enough. People and Sharia values are the primary determinants of the sustainability of Islamic digital finance in Indonesia.

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Author Contributions Statement

FBU conceptualized the research framework, conducted the primary literature selection, YKW analyzed the data regarding human resource readiness, synthesized the ethical challenge discussions, LJ developed the qualitative descriptive methodology, structured the final naskah analysis, NR coordinated the data verification process, cross-checked the journal sources, AJ drafted the results and discussion section, aligned the findings with Sharia principles and formulated the conclusion and implications, reviewed the final references.

Conflict of Interest

The authors declare that they have no competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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