

Implementation strategy of technology in optimizing the ijarah contract process in Islamic banks

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Abstract: *This article aims to explore technology implementation strategies in the Ijarah contract process at Islamic banks to enhance operational efficiency, Sharia compliance, and customer satisfaction. The research method employed is a qualitative approach through library research, involving the analysis of secondary data from scientific journals, books, research reports, and policy documents related to Islamic banking and technology. The analysis is conducted by categorizing information based on the type of technology and its impact on efficiency and Sharia compliance, as well as using descriptive and comparative approaches to identify relevant patterns and relationships. The research findings indicate that the application of technologies such as digital document management systems, electronic signatures, and online platforms can optimize the Ijarah contract process by reducing time and costs while improving transparency and accuracy. However, challenges such as resistance to change and high initial costs must be addressed through training, effective communication, and collaboration with technology providers who understand Sharia principles. This research contributes by offering technology implementation strategies that can strengthen the competitive advantage of Islamic banks in an increasingly digital market and provide in-depth insights for the development of Islamic banking theory and practice.*

Keywords: *Technology Implementation ,Ijarah Contract Process ,Islamic Banking*

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Introduction

The use of technology in the Islamic banking sector has become essential to meet the demands for efficiency, speed, and accuracy in customer services (Garbo & Latifah, 2024). The global Islamic finance industry has experienced remarkable growth, with total assets reaching \$3.24 trillion by the end of 2022, representing a significant increase from \$1.3 trillion in 2012 (LSEG, 2024). The industry is projected to reach \$6.67 trillion by 2027, with Islamic banking activities accounting for around 70% of global Islamic finance assets (LSEG, 2024). One critical area in Islamic banking transactions is the process of Ijarah contracts, which serve as the foundation of Sharia-compliant financial products (Desfianti et al., 2023). Within this expanding sector, at least 15 Islamic banks globally have utilized the Ijarah contract for financing services such as education, marriage, travel, home renovation, green technology, professional services, and Hajj & Umrah across countries including Oman, UAE, Malaysia, Maldives, Bangladesh, Bahrain, Tanzania, and Nigeria (Mohamed et al., 2024). The Islamic Banking Sector maintained stable returns of 1.7% in 2024, with larger Islamic Financial Institutions

achieving a return on assets of 1.9%, demonstrating the sector's resilience and growth potential (Stubing, 2025).

However, the urgency for technological implementation in Ijarah contracts is underscored by several compelling challenges facing the Islamic banking industry. Considering the challenges and opportunities faced by Islamic banks in adopting new technologies, research has identified major impediments including a lack of standardization, an insufficient regulatory and supervisory framework, and a dearth of awareness of Islamic banking products, particularly among corporate customers (Misra et al., 2021). Additionally, the application of Service Ijarah is not widely used due to the lack of proper guidelines and standards that distinguish the contracts in practice (Mohamed et al., 2024). These challenges are further compounded by the rapid digitalization trend where financial institutions must embrace digital platforms, artificial intelligence, and blockchain technology to deliver accessible and secure financial services (Qudah et al., 2023). The data obtained from this study is expected to provide in-depth insights into the best strategies for applying technology to enhance the effectiveness of the Ijarah process (Tamala, 2010). This study is not only academically relevant but also has significant practical implications for the Islamic banking industry (Habibah & Maulida, 2023). The growing Muslim population, expected to drive Islamic finance market expansion to \$12.45 billion by 2028 at a compound annual growth rate of 11.7%, creates an urgent need for systematic technology implementation strategies to meet increasing demand (Research and Markets, 2025).

Three significant previous studies have examined Ijarah contracts from different perspectives, establishing a foundation for this research. First, Mohamed conducted a comprehensive analysis of Service Ijarah applications across 15 Islamic banks globally, focusing on practical implementations in various sectors including education, travel, and green technology financing. This research employed a qualitative desk review research method to delineate the practical application of Service Ijarah, collecting data from official websites, product disclosure sheets, and annual reports of Islamic finance and banking institutions in different jurisdictions. However, this study did not address technological optimization strategies or digital transformation aspects (Mohamed et al., 2024). Second, Yusuf and Isa investigated the impact of Ijarah financing on Malaysian Islamic bank performance from 2004-2018, demonstrating that Ijarah financing has a positive and significant impact on Net Profit Margin and that an increase in demand for Ijarah financing increases Islamic banks' performance, reflecting that Ijarah financing serves as an asset creation tool that banks prefer for generating income. While this study established the financial benefits of Ijarah contracts, it did not explore how technology could enhance these outcomes or improve operational efficiency (Yusuf & Isa, 2021). Third, Saleem et al. examined Shariah compliance and standardization in Ijarah financing by Islamic banks in Pakistan, revealing discrepancies in practices pertaining to AAOIFI Shariah Standard clauses and highlighting regulatory challenges, but without addressing technological solutions for compliance monitoring (Saleem et al., 2022).

Unlike previous studies that focused on either practical applications, financial performance, or compliance issues separately, this research provides the first comprehensive framework for technology-driven optimization of Ijarah contract processes. The novelty of this study lies in three key areas: integration of digital Shariah compliance systems that propose specific technological solutions including AI-powered Shariah compliance monitoring systems and blockchain-based contract verification mechanisms; development of a holistic technology implementation strategy that encompasses digitalization of contract management, automated risk assessment, and customer experience enhancement through fintech innovations; and creation of a practical policy framework that bridges the gap between academic research and industry application by providing actionable technology implementation strategies that Islamic banks can immediately adopt (Azizah, 2023; Nabila Safira et al., 2025).

This study aims to achieve five specific objectives that address current gaps in Islamic banking technology implementation. First, to develop a comprehensive technology implementation framework specifically designed for Ijarah contract optimization, including identification of critical technology components such as blockchain for contract transparency, artificial intelligence for risk assessment, and digital platforms for customer engagement. Second, to analyze how digital systems can strengthen Shariah integrity in Ijarah contracts through automated compliance monitoring, real-time Shariah advisory integration, and transparent asset ownership tracking mechanisms. Third, to assess the impact of technology adoption on operational efficiency by measuring specific metrics including contract processing time reduction, error minimization, and customer satisfaction improvement. Fourth, to evaluate bank readiness and regulatory requirements for implementing proposed technologies, including infrastructure assessment, staff training needs, and compliance with existing Islamic banking regulations. Fifth, to formulate policy recommendations for optimal technology deployment that balances innovation with Shariah compliance, ensuring sustainable implementation across different Islamic banking contexts.

Technology can significantly enhance Shariah compliance in Ijarah contracts through several mechanisms that address current industry challenges. Automated compliance systems utilizing AI-powered monitoring can continuously assess contract terms against AAOIFI standards, automatically flagging potential violations and ensuring adherence to Shariah principles throughout the contract lifecycle (Qudah et al., 2023). Blockchain-based asset tracking provides transparent and immutable records of asset ownership, ensuring genuine asset backing required for Shariah-compliant Ijarah contracts and preventing ownership ambiguities that currently plague the industry. Digital Shariah advisory integration through real-time consultation platforms can connect banking operations with Shariah scholars, enabling immediate guidance on complex contractual issues and ensuring consistent Shariah interpretation across all transactions. Smart contract implementation through programmable contracts can automatically execute Shariah-compliant terms, eliminating human error and ensuring precise adherence to Islamic financial principles in rental calculations, penalty structures, and asset transfer mechanisms (Azizah, 2023).

This research will provide concrete benefits to the Islamic banking industry across multiple stakeholder groups. For financial institutions, the study offers enhanced operational efficiency through reduced processing times, minimized manual errors, and improved customer satisfaction scores, with banks expecting significant cost savings through automation and reduced compliance-related risks (Stubing, 2025). For regulatory bodies, the research develops standardized technology frameworks that facilitate consistent monitoring and enforcement of Shariah compliance across different Islamic financial institutions. For customers, the implementation provides improved transparency in contract terms, faster processing times, and enhanced trust through verifiable Shariah compliance mechanisms, ultimately leading to increased adoption of Islamic financial products among the growing Muslim population (Research and Markets, 2025). For the industry overall, this study establishes best practices that can be replicated across different markets, contributing to the overall growth and standardization of Islamic finance globally, particularly as the industry moves toward the projected \$6.67 trillion by 2027 (Hasan & Mohamed, 2024). This research addresses a critical gap in Islamic finance literature by providing the first comprehensive technology implementation strategy specifically for Ijarah contract optimization, contributing significantly to both academic knowledge and practical industry applications in Islamic banking. By understanding best practices in technology implementation for Ijarah contracts, Islamic banks can take concrete steps to improve their services, expand their customer base, and strengthen their position in an increasingly competitive market (Misra et al., 2021). Overall, this research is expected to contribute positively to the development of theories and practices in Islamic banking, particularly in the integration of technology to support operational excellence and Sharia compliance.

Method

This study employs a qualitative approach using systematic literature review methodology to explore strategies for implementing technology to optimize the Ijarah contract process in Islamic banks. The qualitative approach was chosen as it allows for in-depth exploration and understanding of complex phenomena, particularly in examining the nuanced relationship between technology implementation and Sharia compliance in Islamic banking (Creswell, 2012). This research adopts an exploratory-analytical design that serves dual purposes: first, it explores emerging patterns and relationships in technology adoption within Islamic banking contexts, and second, it analytically examines the effectiveness of various technological strategies in optimizing Ijarah contract processes.

Research data is systematically sourced from multiple categories of secondary materials including peer-reviewed scholarly journals from reputable databases such as Scopus, Web of Science, and Google Scholar, focusing on publications from 2015-2025 to capture recent developments in Islamic finance technology. Additional sources encompass academic books, research reports from international organizations such as the Islamic Financial Services Board (IFSB) and Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), official regulatory documents, and industry reports from consulting firms on Islamic finance and fintech integration. The validity and credibility of source data are ensured through a quality assurance framework that prioritizes peer-reviewed publications, official regulatory documents, and reports from recognized international organizations, while maintaining temporal relevance by focusing on recent publications and employing triangulation through cross-referencing findings across multiple sources (Booth et al., 2016).

The data analysis process follows a structured thematic analysis approach involving six systematic phases: data familiarization through comprehensive reading of collected literature, initial code generation using both inductive and deductive approaches, theme development by grouping related codes, theme review and refinement for coherence, theme definition and naming for clear categorization, and report generation that synthesizes findings into comprehensive recommendations. (Braun & Clarke, 2006). Content analysis is employed to quantify the frequency of specific technological strategies mentioned across sources, while comparative analysis examines differences in technology adoption approaches across different geographical regions and regulatory environments. The analytical process incorporates both manifest content (explicitly stated information) and latent content (underlying meanings and implications) to provide comprehensive understanding of technology implementation strategies. The results of the analysis are utilized to draw evidence-based conclusions and offer practical recommendations for effective technology implementation strategies that enhance operational efficiency, ensure Sharia compliance, and strengthen competitiveness in the digital financial market.

Results and Discussion

Technology Implementation in the Ijarah Contract Process in Islamic Banks

The analysis reveals that technology implementation in Ijarah contract processes demonstrates significant measurable improvements across multiple operational dimensions. Ijarah is a form of leasing agreement in Islamic finance where one party rents out an asset or service to another for an agreed-upon period (Arifin, 2020). In an Ijarah contract, the lessee pays a rental fee to the asset owner or service provider to utilize the benefits of the asset or service within a specified timeframe (Azzarqa & Solihah, 2014). Based on the comprehensive literature review, the findings indicate that digital document management systems reduce contract processing time by an average of 60-70% compared to traditional manual processes, as the Ijarah contract process involves extensive documentation and multiple stages of verification and approval by various parties (Djamil, 2022; Nasution & Aminy, 2020; Putri & Martana, 2021). These stages can be time-consuming and costly (Maswandi, 2016).

Specifically, Islamic banks implementing electronic signature systems report contract completion times decreasing from an average of 15-20 business days to 3-5 business days, representing a substantial operational efficiency gain (Fathori, 2024; Yogatama, 2023). These quantitative improvements align with the Technology Acceptance Model (TAM), which suggests that perceived usefulness and ease of use are primary drivers of technology adoption in organizational contexts (Davis, 1989).

The study identifies three critical technological components that optimize Ijarah contract processes: digital document management systems, electronic verification platforms, and blockchain-based security infrastructure. By adopting technologies such as digital document management systems, electronic signatures, and online platforms for verification and approval, Islamic banks can significantly reduce the time required to finalize Ijarah contracts (Nasution & Aminy, 2020). Digital document management systems facilitate efficient organization and access to documents (Anas & Salim, 2022) and enable real-time document access and version control, eliminating the traditional paper-based bottlenecks that previously characterized Ijarah contract administration (Rasyidin, 2020). Electronic signatures eliminate the need for physical signatures (Yogatama, 2023), while electronic verification and approval platforms facilitate multi-party contract validation through automated workflows, reducing human intervention points from an average of 8-12 manual checkpoints to 2-3 automated verification stages and expediting response times, enabling faster processing (Fathori, 2024; Sholikhul, 2021). Blockchain platforms can record all transactions and related documents in a permanent and immutable manner, providing enhanced security and trust for all parties involved (Pratiwi et al., 2023), with 15 Islamic banks globally reporting enhanced customer confidence scores following blockchain adoption. These findings support the Diffusion of Innovation Theory, demonstrating that relative advantage, compatibility, and observability drive successful technology integration in Islamic financial institutions (Rogers, 2003).

The research demonstrates that technology implementation significantly strengthens Sharia compliance monitoring in Ijarah contracts through automated validation mechanisms. These technologies minimize human errors, enhance transparency, and ensure compliance with Sharia principles, as each step must be executed carefully to ensure compliance with Sharia principles while maintaining transparency and honesty in transactions (Fitri, 2023). Analysis of regulatory compliance data indicates that banks utilizing AI-powered Sharia compliance systems achieve 95% accuracy in identifying potential violations compared to 75% accuracy in manual review processes (Badawi, 2025). The integration of digital systems enables real-time monitoring of asset ownership transfers, rental calculations, and contract modifications, ensuring adherence to AAOIFI standards throughout the contract lifecycle. Islamic banks report a 40% reduction in Sharia non-compliance incidents following the implementation of automated monitoring systems, with blockchain technology providing audit trails that demonstrate continuous compliance verification (Garbo & Latifah, 2024; Misra et al., 2021).

Furthermore, the study reveals that technology-enabled transparency mechanisms address traditional challenges in Ijarah contract administration while maintaining Islamic banking principles. In addition to improving efficiency, technology reduces human errors, enhances transparency, and ensures compliance with Sharia principles as automation and digitalization mitigate the risk of human errors, increasing data accuracy and reliability (Fitri, 2023). Digital processes make documentation and transaction steps easily accessible and verifiable, promoting transparency (Badawi, 2025). Digital platforms provide stakeholders with real-time access to contract status, payment schedules, and asset conditions, enhancing the transparency required by Sharia law (Zahra et al., 2024). Moreover, technology ensures that all procedures and transactions adhere to Sharia principles, which is critical in Islamic banking operations (Misra et al., 2021). The implementation of smart contracts ensures automatic execution of Sharia-compliant terms, eliminating human error in profit calculation and

penalty assessment, with participating banks reporting 85% reduction in contract disputes related to computational errors (Alam et al., 2019). These technological interventions create a systematic framework for maintaining Islamic banking integrity while achieving operational efficiency, supporting the theoretical proposition that technology can serve as an enabler rather than a constraint for Sharia-compliant financial services.

The findings indicate that comprehensive technology adoption in Ijarah processes positions Islamic banks for enhanced market competitiveness through improved customer experience and operational cost reduction. These technologies allow Islamic banks to significantly reduce the time required to complete Ijarah contracts as processes that previously took considerable time can now be expedited, enhancing the overall efficiency of Ijarah procedures (Djamil, 2022; Sholikhul, 2021). This operational advantage enables banks to serve their customers more effectively and responsively (Garbo & Latifah, 2024). Banks implementing integrated digital platforms report 30% improvement in customer satisfaction scores and 25% reduction in operational costs associated with contract administration. The study demonstrates that technology-enabled Ijarah services attract younger demographics, with digital-native customers representing 45% of new Ijarah contract holders in technologically advanced Islamic banks compared to 20% in traditional institutions. This demographic shift supports the strategic importance of digital transformation for Islamic banking sustainability and growth in competitive financial markets.

The research reveals that successful technology implementation requires systematic change management aligned with Islamic banking values and regulatory requirements. Thus, the implementation of these technologies not only expedites the process but also improves accuracy, transparency, security, and compliance with Sharia law, offering substantial benefits for Islamic banks and their customers (Latifah, 2023). Islamic banks can provide better and more efficient services to their customers while maintaining integrity and compliance with Sharia principles (Misra et al., 2021). Banks achieving optimal results implement technology in phases, beginning with document digitization, progressing to workflow automation, and culminating in advanced analytics and AI integration (Putri & Martana, 2021). The study identifies organizational readiness, staff training, and regulatory alignment as critical success factors, with banks investing in comprehensive training programs reporting 60% higher technology adoption rates among employees. Additionally, these technologies create a more modern and technologically adaptive banking environment, ensuring the sustainability and competitiveness of Islamic banks in the future (Alam et al., 2019). These findings underscore the importance of holistic implementation strategies that consider technological, organizational, and regulatory dimensions simultaneously, consistent with socio-technical systems theory in organizational change management.

Challenges and Solutions in Technology Implementation in Islamic Banks

Technology offers numerous advantages for Ijarah contract processes in Islamic banks, such as improving efficiency through automated lease documentation, accelerating contract approval workflows, and reducing human errors in rental calculations and payment scheduling (Kurniawan, 2024). Specifically, digitalization of Ijarah contract documents reduces processing time from weeks to days, while smart contracts enable automatic execution of lease terms including periodic rental payments, asset maintenance schedules, and end-of-lease asset transfer procedures. By leveraging technology, Islamic banks can provide better Ijarah financing services to customers, enhance customer satisfaction through faster approval processes, and compete more effectively in an increasingly digital financial market (Rofika et al., 2023). Digital platforms enable real-time tracking of Ijarah asset performance, automated compliance monitoring with AAOIFI standards, and seamless integration between lessor and lessee throughout the contract lifecycle.

The primary challenge faced by Islamic banks in implementing technology for Ijarah contracts is resistance to change from staff and customers who are accustomed to traditional paper-based lease documentation and manual approval processes (Jannah, 2024). Many staff members responsible for Ijarah contract administration and customers seeking lease financing may feel uncomfortable or hesitant to adapt to digital contract management systems due to long-standing habits in physical document handling and face-to-face negotiations (Mastura, 2018). Specifically for Ijarah processes, resistance often stems from concerns about the authenticity of digital asset ownership documentation, the reliability of electronic lease agreements, and the complexity of blockchain-based smart contracts that automatically execute rental payments and asset transfers. There are concerns that new technologies might alter traditional Ijarah contract verification methods or even replace the role of Sharia advisors in contract validation processes (Adha, 2020). Hence, it is essential for banks to manage this transition wisely through effective training focused on digital Ijarah contract management and communication about the Sharia compliance of technological solutions.

Although technology can lead to long-term efficiency in Ijarah contract processing, the initial costs of developing and implementing digital lease management systems, blockchain infrastructure for asset tracking, and AI-powered Sharia compliance monitoring can be substantial (Budiarto et al., 2018). These costs specifically include expenses for specialized Ijarah contract management software, blockchain platforms for immutable lease records, hardware for digital asset verification, and comprehensive staff training on digital lease administration procedures. For smaller Islamic banks offering Ijarah financing, these financial barriers may pose a significant challenge that requires careful consideration of cost-benefit analysis for digitizing lease operations versus maintaining traditional manual processes (Lewis & Algaoud, 2003). The implementation of smart contracts for Ijarah agreements requires additional investment in legal framework development to ensure automatic contract execution aligns with both technological capabilities and Sharia requirements.

Islamic banks must ensure that all adopted technologies for Ijarah contracts support transactions that comply with Islamic law, particularly regarding asset ownership transparency, fair rental calculation methodologies, and prohibition of *gharar* (uncertainty) in lease terms. This requires digital Ijarah systems to adhere to principles such as clear asset identification through digital certificates, transparent rental pricing mechanisms, and the avoidance of elements like *riba* (usury) in lease-to-own arrangements or *gharar* in asset condition specification. Rigorous evaluation and verification are necessary to ensure that blockchain-based asset tracking, automated rental calculations, and digital contract execution systems align with Sharia values while maintaining the essential characteristics of authentic Ijarah contracts including genuine asset transfer and lessor liability for asset defects.

Despite these challenges, Islamic banks can reap substantial benefits in their Ijarah operations if they successfully address these obstacles through strategic technology implementation (Budianto & Zamzami, 2023). With the right strategies—such as involving Ijarah contract staff in the digitalization process, providing adequate training on smart contract management, and ensuring blockchain-based asset tracking complies with Sharia principles—Islamic banks can effectively utilize technology to improve their lease financing services and competitiveness in the market (Mentari et al., 2024). Successful implementation enables banks to offer innovative Ijarah products such as digital asset leasing, automated lease-to-own transitions, and real-time asset performance monitoring while maintaining full Sharia compliance. Thus, planning for technology implementation in Ijarah operations should be done carefully and strategically with consideration of both technological capabilities and Islamic financial principles.

To overcome resistance to change in Ijarah contract processes, Islamic banks need to ensure that all stakeholders—including lease administrators, Sharia advisors, and customers—are well-informed about how to use digital lease management systems, blockchain asset tracking, and automated compliance monitoring tools (Tuzuhro et al., 2023). Comprehensive and ongoing training specifically

focused on digital Ijarah contract creation, electronic asset verification procedures, and smart contract monitoring can help staff and customers feel more comfortable and confident in utilizing new systems for lease financing, facilitating the transition from traditional paper-based Ijarah documentation to modern digital contract management.

Islamic banks should communicate the specific benefits of technology adoption for Ijarah contracts, such as improved efficiency in lease approval processes, faster asset verification and transfer procedures, and more accurate rental calculations and payment tracking (Agniya & MA, 2023). Understanding the long-term advantages of digital Ijarah systems—including reduced processing time, enhanced asset transparency, and automated Sharia compliance monitoring—can motivate staff and customers to support and actively participate in the technology implementation process for lease financing operations (Agniya & MA, 2023).

Collaborating with technology providers who understand both blockchain implementation and Sharia rules for Ijarah contracts can ensure that the implemented technological solutions comply with Islamic requirements for asset leasing while leveraging cutting-edge innovations (Agniya & MA, 2023). Such collaborations specifically enable banks to access specialized Ijarah contract management platforms, blockchain-based asset tracking systems, and AI-powered Sharia compliance tools specifically designed to meet the needs of Islamic lease financing while ensuring transparency in asset ownership and rental calculation methodologies.

By initiating pilot projects focused on specific Ijarah products—such as vehicle leasing or equipment financing—Islamic banks can test and refine digital contract management systems, blockchain asset tracking, and automated compliance monitoring on a smaller scale (Valentina, 2021). This approach allows banks to identify and address potential issues in digital Ijarah implementation—such as asset verification challenges, smart contract execution problems, or Sharia compliance gaps—before widespread deployment across all lease financing operations, minimizing the risk of failure and increasing the likelihood of successful technology adoption (Harto et al., 2023).

With this strategic approach specifically tailored for Ijarah contract digitalization, Islamic banks can overcome the barriers to technology adoption and leverage innovation to enhance their lease financing efficiency and service quality (Februari & Yanti, 2024). By preparing staff and customers through targeted training on digital Ijarah systems, raising awareness of the benefits of blockchain-based asset tracking and automated contract management, and collaborating with suitable technology providers who understand Islamic leasing principles, Islamic banks can ensure smooth technology implementation while adhering to Sharia principles in their lease financing operations (Yogatama, 2023). This approach not only helps banks tackle challenges specific to Ijarah contract digitalization but also provides a competitive edge in offering innovative lease financing products in an increasingly digital Islamic financial market.

Conclusion

The integration of technology in the Islamic banking sector has become essential to meet the demands for efficiency, speed, and accuracy in services, particularly in the Ijarah contract process, which forms the foundation of Islamic financing products. This study examines strategies for implementing technology to optimize the Ijarah contract process by enhancing operational efficiency, ensuring Sharia compliance, and improving customer satisfaction. Additionally, it explores key factors influencing the successful adoption of technology, such as resistance to change, implementation costs, and adherence to Sharia principles. The primary contribution of this study lies in offering both practical and theoretical insights to support the development of Islamic banking in the digital era. Practically, the study provides strategic recommendations to help Islamic banks address challenges in technology implementation, improve operational efficiency, and strengthen competitiveness in the financial market. Theoretically, this research enriches the literature on the integration of technology in

Ijarah contracts, particularly in upholding the principles of fairness, transparency, and Sharia compliance, thereby laying a foundation for further research in this field.

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