

Digital Literacy and Risk Management in *Takaful* Operations: An Analysis of Shariah Principles and Regulatory Imperatives in Nigeria

*Maryam Dikko

Centre for Islamic Legal Studies, Ahmadu Bello University Zaria, Nigeria.

*Corresponding Author: maryam.dikko@gmail.com

Abstract

*This paper examines the implications of the use of digital platforms for risk management in Takaful operations in Nigeria, with particular focus on digital literacy, Shariah compliance, and regulatory oversight. As digital platforms increasingly mediate Takaful service delivery, concerns arise regarding participants' understanding of Islamic contractual obligations, informed consent, and ethical compliance. The study adopts a doctrinal legal research methodology through the analysis of Islamic legal principles, classical juristic authorities, and contemporary regulatory frameworks, including guidelines issued by the National Insurance Commission and the Islamic Financial Services Board. It further evaluates practical implementations through selected digital Takaful platforms operating within and outside Nigeria. The findings reveal that digital onboarding systems, clickwrap agreements, algorithm-driven pricing, and unreadable policy texts may undermine the Shariah requirements of *ridha* (informed consent), *bayan* (clarity), and *amanah* (trust), thereby increasing the risk of *gharar* (ambiguity) and procedural rather than substantive consent. The study also finds that uneven digital literacy and limited technological access in Nigeria heighten participants' vulnerability within digital Takaful ecosystems. The paper concludes that although digital platforms enhance efficiency and market expansion, they simultaneously introduce significant ethical and compliance risks. It recommends stronger regulatory oversight, Shariah audits of digital interfaces, interactive consent mechanisms, digital literacy assessments, and the development of multilingual and USSD-based platforms to promote inclusivity, transparency, and participant protection in line with the *maqasid al-Shariah*.*

Keywords: Digital Literacy, Informed Consent, Shariah Compliance, Nigeria, Takaful

1. Introduction

Poverty has been one of the most The global financial services sector is experiencing a paradigm shift fueled by rapid advancements in digital technology. These innovations have redefined traditional business models, presenting new opportunities for financial inclusion, particularly in emerging markets such as Nigeria. In this evolving landscape, Islamic finance, notably *Takaful*, is gradually adapting to digital platforms to enhance outreach and operational efficiency. *Takaful*, grounded in the

principles of mutual cooperation (*ta'awun*), risk-sharing, and ethical financial conduct, is designed as a Shariah-compliant alternative to conventional insurance (Billah, 2019). Yet, the digitalization of *Takaful* operations also raises questions, notably concerning participants' digital literacy and regulatory oversight to safeguard Shariah compliance.

Digital literacy, broadly defined as the ability to access, understand, and effectively utilize digital technologies for meaningful engagement, is a critical

determinant of financial inclusion (UNESCO, 2018). However, in the context of Islamic financial services, particularly *Takaful*, low digital literacy may lead to misunderstandings of contractual obligations, impaired consent (*ridha*), and heightened operational risks (Salhoob, 2025; Jaafar & Hamzah, 2026). This concern is amplified in Nigeria, where financial literacy, and by extension, digital financial literacy, remains relatively low (EFInA, 2023). The risk is not confined to consumer protection but extends to Shariah governance, operational integrity, and the ethical administration of *Takaful* pools.

The intersection of digital financial services, low digital literacy, and Shariah-compliant risk-sharing mechanisms presents a multifaceted regulatory challenge. While previous scholarly works have examined the legal and operational structures of *Takaful* (Htay & Salman, 2013; Obaidullah, 2015), recent studies have increasingly highlighted the implications of fintech integration, digital literacy deficits, and Shariah governance challenges within Islamic financial services (Shehu, 2025; Susanti, 2025; Abbas et al., 2025). Nevertheless, limited attention has been paid to how low digital financial literacy affects risk management frameworks in *Takaful* operations within Nigeria's socio-economic and regulatory environment. The absence of clear regulatory standards on digital risk governance further raises questions regarding the fiduciary duties of *Takaful* operators and the oversight responsibilities of Shariah boards in ensuring informed consent, transparency, and participant protection in digital environments.

1.1 Research Objectives

This study seeks to:

i. Examine the foundations in Islamic law that govern risk-sharing,

transparency, and mutual cooperation in *Takaful* contracts.

ii. Analyze how low digital financial literacy may pose risks to operational integrity and Shariah compliance in Nigeria's *Takaful* industry.

iii. Critically assess Nigeria's existing regulatory frameworks governing *Takaful* and digital financial services, with a focus on risk management and Shariah governance.

iv. Evaluate the role of Shariah boards and regulatory bodies in mitigating risks arising from low digital literacy in Nigeria's *Takaful* market.

2 Literature Review

2.1 *Takaful* Governance, Digitalization and Emerging Risk Concerns

Recent scholarship on *Takaful* increasingly reflects the growing influence of digital financial technologies on Islamic insurance operations. Contemporary studies have moved beyond earlier discussions of contractual legitimacy and operational models to focus on governance efficiency, regulatory adaptation, consumer protection, and digital compliance risks within Islamic financial services (IFSB, 2022; Shehu, 2025). Emerging literature further recognizes that digital transformation is reshaping the relationship between *Takaful* operators and participants, particularly through mobile applications, automated onboarding systems, algorithm-driven underwriting, and platform-based service delivery.

Current research also highlights the tension between technological efficiency and Shariah governance obligations. Abbas et al. (2025) observe that digital financial systems may widen consumer vulnerability where users possess limited financial or technological competence. Similarly, Smolo (2026) argues that while fintech integration enhances accessibility

and operational scalability within Islamic finance, it simultaneously introduces ethical and governance concerns relating to transparency, accountability, and participant understanding.

Although these studies acknowledge the operational implications of digital transformation, discussions of risk management within *Takaful* remain largely concentrated on institutional solvency, underwriting structures, governance frameworks, and operational efficiency (IFSB, 2022). Comparatively less attention has been devoted to participant-facing risks arising from digital service delivery, particularly within emerging markets where financial and digital literacy levels remain uneven (EFInA, 2023; UNESCO, 2018).

Foundational scholarship by Billah (2019), Htay and Salman (2013), and Obaidullah (2015) remains important for explaining the doctrinal structure of *Takaful*, particularly the principles of *tabarru'*, *ta'awun*, *fiduciary responsibility*, and the prohibition of *gharar* and *riba*. However, these earlier studies were developed largely before the widespread integration of platform-based financial systems and therefore provide limited engagement with digital consent mechanisms, algorithmic decision-making, or participant comprehension within digital environments.

2.2 Digital Financial Literacy and Consumer Vulnerability

The relationship between digital literacy and financial vulnerability has become an increasingly important theme within contemporary financial inclusion studies. Recent global studies conceptualize digital literacy not merely as technical competence, but as a prerequisite for meaningful participation in digital financial systems (World Bank, 2022; UNESCO, 2018). Within digital financial environments, users are frequently required to navigate complex interfaces,

standardized disclosures, automated consent systems, and data-sharing mechanisms that presuppose a degree of technological understanding many consumers do not possess.

In Nigeria, existing empirical studies reveal a widening gap between digital financial access and actual participant understanding. The EFInA Access to Financial Services Survey (2023) reports continued growth in digital financial inclusion while simultaneously identifying persistently low levels of financial literacy and limited user confidence in digital financial systems. The National Digital Economy Policy and Strategy (2020–2030) similarly acknowledges that digital adoption in Nigeria continues to outpace digital skills development.

Recent scholarship associates low digital literacy with heightened exposure to fraud, weak contractual understanding, reduced capacity to assess financial risks, and increased vulnerability within digital financial ecosystems (Abbas et al., 2025). These concerns become particularly significant within Islamic financial services because Shariah-compliant transactions require not merely procedural agreement, but meaningful participant understanding capable of satisfying the doctrinal requirement of *ridha* (Kamali, 2000).

Despite the growing body of literature on digital financial inclusion, relatively few studies directly examine the relationship between digital literacy and Shariah compliance within *Takaful* operations. Existing discussions of consumer protection within fintech environments are often framed from conventional regulatory and data-governance perspectives, with comparatively limited engagement with Islamic legal concepts such as informed consent, transparency (*bayan*), *amanah*, and the avoidance of *gharar* (OECD, 2023; IFSB, 2022)..

2.3 Digital Financial Services, Consent Mechanisms and Shariah Compliance

Recent research into fintech increasingly examines the legal and ethical implications of digital consent mechanisms within financial transactions. Studies on digital finance regulation identify concerns relating to clickwrap agreements, unreadable contractual disclosures, algorithmic opacity, and automated decision-making processes that may undermine genuine consumer understanding (OECD, 2023; World Bank, 2022).

Within Islamic finance, these concerns assume additional significance because contractual validity depends heavily upon transparency, voluntary participation, and informed consent. Studies by Ali (2020) and Shalhoob (2025) argue that digital financial systems may weaken substantive participant understanding where contractual engagement is reduced to procedural acceptance through standardized digital interfaces.

Emerging literature on AI-driven financial systems also raises concerns regarding algorithmic fairness, data asymmetry, and behavioral profiling within digital financial services (Bhattacharya et al., 2025). Although these concerns are receiving growing attention within contemporary fintech and digital governance scholarship (OECD, 2023; World Bank, 2022), their implications for *Takaful* operations remain comparatively underexplored, particularly regarding compliance with Shariah principles governing fairness, disclosure, and informed participation.

The issue assumes particular significance within jurisdictions such as Nigeria, where digital financial expansion continues to outpace both digital literacy development and consumer protection capacity (EFInA, 2023; World Bank, 2022). In such contexts, access to digital financial platforms does not necessarily

guarantee informed participation or meaningful contractual understanding.

2.4 Regulatory and Shariah Governance Gaps

In recent times, various studies increasingly recognize the challenges posed by digital financial services for consumer protection and institutional oversight. Global regulatory bodies such as the Islamic Financial Services Board (IFSB, 2022), OECD (2023), and the World Bank (2022) have emphasized the need for adaptive governance structures capable of addressing cybersecurity risks, digital fraud, operational resilience, and participant protection within digital finance ecosystems.

In Nigeria, however, regulatory oversight of insurance, digital finance, and data protection remains institutionally fragmented. Existing frameworks issued by NAICOM, the Central Bank of Nigeria, and the National Data Protection Commission primarily address operational compliance, data governance, and financial system stability (CBN, 2021; NDPA, 2023; NAICOM, 2020). Comparatively limited attention has been devoted to doctrinal questions arising from digital consent mechanisms within Islamic financial services.

Current scholarship on *Takaful* regulation in Nigeria similarly focuses more heavily on licensing structures, operational requirements, and Shariah advisory systems than on participant-facing digital risks (Shehu, 2025). Questions concerning whether existing digital onboarding systems adequately satisfy the doctrinal requirements of *ridha*, *bayan*, and *amanah* remain comparatively underdeveloped within both regulatory and academic discourse.

Although Shariah governance frameworks within Islamic finance are relatively well developed, existing discussions remain primarily focused on institutional compliance and product

legitimacy rather than participant-facing digital risks (IFSB, 2009; AAOIFI, 2020). Comparatively limited attention has been devoted to whether Shariah Advisory Boards should supervise digital consent mechanisms, interface design, or algorithm-driven systems capable of affecting participant understanding and contractual validity within *Takaful* operations.

2.5 Literature Gap and Contribution of the Study

The foregoing review demonstrates that while recent scholarship increasingly addresses fintech innovation, Islamic financial governance, and digital consumer protection, these discussions remain insufficiently integrated. Existing literature rarely examines how low digital literacy affects informed consent, participant understanding, operational risk, and Shariah compliance within digital *Takaful* systems.

This gap is particularly evident within the Nigerian context, where digital financial inclusion continues to expand amidst uneven literacy levels, fragmented regulatory oversight, and a relatively underdeveloped *Takaful* sector. Current studies also devote limited attention to the doctrinal implications of clickwrap agreements, algorithm-driven underwriting systems, and automated onboarding processes within Shariah-compliant financial arrangements.

This study contributes to existing scholarship by examining digital literacy not merely as a consumer protection issue, but as a doctrinal and governance concern within *Takaful* operations. It integrates Islamic legal principles, digital governance scholarship, and Nigerian regulatory analysis to evaluate whether existing digital financial practices adequately protect participant understanding and preserve the ethical foundations of *Takaful* contracts in the digital age.

3. Methodology

This study adopts a qualitative doctrinal legal research methodology. Doctrinal research focuses on the systematic analysis and interpretation of legal principles, regulatory frameworks, and juristic authorities relevant to a particular legal problem. In this study, the methodology is used to examine the extent to which existing Shariah principles and Nigerian regulatory frameworks adequately address the risks arising from digitalization within *Takaful* operations.

The doctrinal analysis is conducted through the examination of primary sources of Islamic law, namely the Qur'an, Sunnah, and classical juristic writings relating to consent (*ridha*), transparency (*bayan*), fiduciary responsibility (*amanah*), and the prohibition of *gharar*. The study further analyses contemporary Shariah standards and governance principles issued by institutions such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and the Islamic Financial Services Board (IFSB). In addition, the research undertakes a regulatory analysis of relevant Nigerian legal and policy instruments governing insurance, digital financial services, and data protection. These include the Nigerian Insurance Act 2003, the National Insurance Commission (NAICOM) Operational Guidelines for *Takaful* Insurance, the Central Bank of Nigeria's digital finance regulations, and the Nigeria Data Protection Act 2023. The purpose of this analysis is to assess whether existing regulatory frameworks sufficiently address participant protection, informed consent, and digital risk governance within *Takaful* operations.

The study also adopts a limited comparative approach by drawing

insights from jurisdictions with more developed digital *Takaful* ecosystems, particularly Malaysia and selected Gulf Cooperation Council (GCC) countries. These jurisdictions are used comparatively to identify emerging regulatory practices, governance standards, and consumer protection approaches relevant to digital *Takaful* operations.

The methodology is primarily analytical and normative rather than empirical. Accordingly, the study does not rely on quantitative data collection or field surveys, but instead evaluates doctrinal principles, regulatory frameworks, and governance structures in order to identify legal and ethical gaps within Nigeria's evolving digital *Takaful* environment.

4. Findings and Discussion

4.1 Foundational Concepts of Risk Sharing and Governance in Islamic Law

Islamic commercial jurisprudence (*fiqh al-mu'amalat*) is founded on principles that safeguard fairness, transparency, and mutual benefit in contractual relationships. These principles are particularly significant in *Takaful* operations, where risk-sharing, ethical governance, and participant trust are core tenets. This section explores key foundations in Islamic law that govern risk-sharing, transparency, fiduciary duties, and ethical governance, laying the groundwork for understanding the risk management obligations of *Takaful* operators, especially in a digitalized environment.

4.1 Risk-Sharing (*Tabarru'*) and Mutual Cooperation (*Ta'awun*)

At the heart of *Takaful* is the principle of *ta'awun* (mutual cooperation), which is operationalized through a risk-sharing contract where participants agree to contribute to a common fund to indemnify any member who suffers a

defined loss (Khan, 2016). Unlike conventional insurance, which is premised on risk transfer for profit, *Takaful* embodies a solidarity-based model where the community collectively bears risk. The concept of *tabarru'* (voluntary donation) legitimizes the pooling of contributions, ensuring that the intent remains altruistic and within Shariah bounds (Dusuki & Abdullah, 2007).

This structure fosters a shared responsibility model that inherently demands transparency and fairness. Participants' trust in the system is predicated on their understanding of the risk-sharing mechanism.

4.2. Informed Consent (*Ridha*) and Transparency (*Bayān*)

The doctrine of *ridha* (mutual consent) is a foundational requirement for all contracts in Islamic law. The Qur'an emphasizes the necessity of transactions being conducted with mutual goodwill:

“O you who have believed, do not consume one another's wealth unjustly but only [in lawful] business by mutual consent” (Qur'an 4:29).

For consent to be valid under Shariah, it must be informed and free from deception, ambiguity, or coercion (Kamali, 2000). The requirement of *bayān* further imposes an obligation of clarity and adequate disclosure upon contracting parties within financial transactions. Moreover, *bayan* (clarity and disclosure) is an ethical obligation upon the service provider. The Prophet Muhammad (peace be upon him) said:

“The two parties in a transaction have the option [to annul it] as long as they have not separated, and if they were truthful and made clear [the terms], their transaction would be blessed” (Ṣaḥīḥ al-Bukhārī, 2079).

4.3. Prohibition of Uncertainty (*Gharar*) and Unjust Enrichment (*Zulm*)

Shariah prohibits *gharar* — excessive uncertainty or ambiguity — in contracts (El-Gamal, 2006). The classical scholars defined *gharar* as transactions where the outcome is uncertain, the subject matter is ambiguous, or the terms are undisclosed. In the context of *Takaful*, this principle mandates clear definition of coverage, contribution terms, claim procedures, and risk-sharing mechanisms. Digital transactions, particularly those conducted without adequate participant comprehension, risk introducing elements of *gharar*, especially when the contractual terms are complex or inadequately explained. Additionally, *zulm* (injustice) is categorically forbidden. Any contract or transaction that results in unjust enrichment of one party at the expense of another is impermissible (Kamali, 2008).

4.4. Governance, Fiduciary Duties, and the *Maqasid al-Shariah* Perspective

The fiduciary duties of *Takaful* operators extend beyond legal compliance; they are ethical and religious in nature. Operators are entrusted with participants' contributions, managing them in accordance with Shariah principles, and ensuring that their actions reflect integrity, transparency, and accountability (Billah, 2019). This fiduciary relationship is grounded in the concept of *amanah* (trust), which imposes an obligation on the operator to act in the best interest of the participants.

From the perspective of *Maqasid al-Shariah* (the higher objectives of Islamic law), financial transactions must promote justice, prevent harm, and uphold human dignity (Chapra, 2008). The *Maqasid* framework underscores the necessity of balancing operational efficiency with participant protection, advocating for measures that enhance transparency,

promote financial literacy, and mitigate exploitation risks. This obligation extends to *Takaful* operators, Shariah advisory boards, and regulators, particularly in jurisdictions like Nigeria where digital financial inclusion is rising amidst low literacy levels.

4.5. Digital Literacy as a Risk Factor in *Takaful* Operations

The expansion of digital financial services has transformed access to insurance, banking, and investment products globally. In Sub-Saharan Africa, and particularly Nigeria, the rapid growth of mobile money platforms and digital banking services has significantly contributed to financial inclusion (World Bank, 2022). However, this inclusion is often accompanied by critical gaps in digital literacy, a phenomenon that poses both operational and ethical risks for financial service providers, including *Takaful* operators.

This section examines digital literacy's role as a potential risk factor in *Takaful* operations, highlighting empirical data on Nigeria's financial and digital literacy levels, the operational risks posed by digital illiteracy, and the implications for *Takaful* participants and providers.

4.5.1 Understanding Digital Financial Literacy

Digital financial literacy extends beyond basic literacy to encompass a person's ability to access, understand, and critically assess digital financial products and platforms (UNESCO, 2018). According to Atkinson and Messy (2012), financial literacy encompasses financial knowledge, behaviors, and attitudes, all of which are critical when interacting with financial services. In the digital context, this includes skills such as navigating mobile applications, understanding digital consent, evaluating the risks of online transactions, and recognizing digital fraud.

For *Takaful* operations, participant understanding of product structures, contractual obligations, and risk-sharing mechanisms remains important for both Shariah compliance and operational effectiveness. Within digital financial environments, this understanding may be affected by varying levels of digital financial literacy among participants (Ali, 2020).

4.5.2 Nigeria's Digital and Financial Literacy Landscape

Nigeria's financial inclusion landscape reveals a mixed reality. The EFINA Access to Financial Services in Nigeria 2023 Survey reported a financial inclusion rate of 74%, yet only 27% of adults were considered financially literate (EFInA, 2023). Digital literacy rates are even lower. The National Digital Economy Policy and Strategy (2020–2030) highlights that despite high mobile phone penetration, actual digital skills usage among the population remains weak (Federal Ministry of Communications and Digital Economy, 2020).

Moreover, EFInA's 2023 survey revealed that only 22% of Nigerian adults had used digital financial services, with many expressing distrust in digital platforms due to past negative experiences or lack of understanding. These figures reflect significant gaps in user capacity to navigate digital financial environments effectively, a situation that poses inherent risks for sectors like *Takaful*, which may increasingly rely on digital platforms for customer acquisition, contributions, and claims processing.

4.5.3 Operational Risks Posed by Low Digital Literacy

The increasing reliance on digital platforms within financial services has generated new categories of operational risk associated with participant interaction, technological dependence, and platform-based service delivery.

Within digital financial environments, low digital literacy may affect the ability of participants to navigate applications, interpret disclosures, complete transactions accurately, or identify fraudulent digital activity (World Bank, 2022; OECD, 2023). These concerns are particularly relevant within *Takaful* operations, where digital platforms are increasingly used for onboarding, contribution payments, claims processing, and participant communication.

One major operational concern relates to participant misunderstanding of contractual and procedural requirements embedded within digital platforms. Existing studies on digital finance indicate that users with limited digital competence may struggle to interpret financial disclosures, understand product features, or navigate complex digital interfaces effectively (EFInA, 2023; Abbas et al., 2025). Within *Takaful* operations, this may affect participant understanding of contribution procedures, claims requirements, exclusions, surplus distribution arrangements, and other administrative aspects of the *Takaful* relationship.

Low digital literacy may also increase exposure to fraud, phishing schemes, misinformation, and unauthorized digital transactions. Research on digital financial inclusion consistently identifies digitally inexperienced users as particularly vulnerable to fraudulent digital practices and deceptive online interactions (OECD, 2023; World Bank, 2022). Within *Takaful* environments, such vulnerabilities may expose participants to financial losses while simultaneously increasing administrative burdens and operational costs for operators managing pooled participant funds.

Another operational concern relates to disputes and contract administration challenges arising from inadequate

participant understanding of digital financial processes. Misunderstandings relating to policy terms, claims procedures, contribution obligations, or platform usage may contribute to complaints, delayed claims resolution, participant dissatisfaction, and reputational risks for operators. Existing fintech literature similarly associates inadequate digital comprehension with increased consumer disputes and weakened confidence in digital financial platforms (Bhattacharya et al., 2025).

Operational dependency on digital systems further introduces broader concerns relating to cybersecurity, platform reliability, data management, and service continuity. Regulatory frameworks governing digital financial services increasingly emphasize the importance of operational resilience and digital risk management in response to the growing dependence on platform-based financial transactions (CBN, 2021; IFSB, 2022). For digital *Takaful* operations, failures in these areas may undermine participant trust, disrupt financial administration, and weaken the operational stability of *Takaful* institutions.

Within the Nigerian context, these operational concerns are intensified by infrastructural limitations, uneven digital literacy levels, and varying levels of participant familiarity with digital financial systems (Federal Ministry of Communications and Digital Economy, 2020; EFINA, 2023). As digital *Takaful* platforms become more integrated into financial service delivery, operational vulnerabilities arising from participant interaction with digital systems may increasingly affect claims administration, dispute management, platform reliability, and overall institutional efficiency.

4.5.4. Shariah Compliance and Governance Risks

Beyond operational concerns, the use of digital platforms within *Takaful* operations raises distinct questions relating to Shariah compliance and governance. Contemporary scholarship on digital finance increasingly observes that automated digital environments may reduce meaningful participant engagement with contractual information, particularly where financial transactions are concluded through standardized disclosures, clickwrap agreements, and automated onboarding systems (OECD, 2023; Bhattacharya et al., 2025).

Within Islamic financial transactions, such concerns carry additional doctrinal implications because the validity of contracts depends upon informed and voluntary participation consistent with the principles of *ridha*, *bayan*, and the avoidance of *gharar* (Kamali, 2000; El-Gamal, 2006). Unlike conventional financial arrangements where procedural acceptance may satisfy regulatory requirements, *Takaful* contracts require a level of participant understanding capable of supporting meaningful contractual consent under Shariah principles.

Recent Islamic finance governance literature similarly emphasizes that participant understanding forms an important component of ethical and doctrinal legitimacy within Islamic financial transactions (Ali, 2020; IFSB, 2022). Where participants interact with digital *Takaful* platforms without adequately understanding contribution structures, exclusions, surplus arrangements, underwriting processes, or claims procedures, questions may arise regarding the extent to which digital participation reflects genuine informed consent.

The increasing integration of algorithm-driven systems and automated decision-making mechanisms within digital

financial services further complicates Shariah governance concerns. Existing fintech scholarship identifies growing concerns regarding algorithmic opacity, behavioral profiling, and limited transparency in automated financial systems (Bhattacharya et al., 2025; Shalhoob, 2025). With *Takaful* operations, insufficient transparency regarding how digital systems process participant data, assess risk profiles, or determine underwriting outcomes may raise concerns relating to fairness, disclosure obligations, and fiduciary accountability.

These developments also have implications for the supervisory responsibilities of Shariah Advisory Boards where *takaful* is provided via a digital platform. Existing governance frameworks largely concentrate on product approval, institutional compliance, and financial supervision, while comparatively limited attention has been devoted to oversight of digital consent mechanisms, participant comprehension standards, or interface transparency within digital financial environments (IFSB, 2009; AAOIFI, 2020). As digital systems increasingly mediate participant engagement with *Takaful* services, questions concerning the scope of Shariah governance responsibilities within digital financial environments become progressively more significant

4.5.5 Global Practices and Lessons for Nigeria

Recent international experience demonstrates that digital financial inclusion initiatives increasingly depend on participant comprehension and consumer capability rather than technological access alone. Within Islamic finance jurisdictions, regulators and financial institutions have begun responding to concerns that low digital literacy may undermine meaningful

participation in digital financial services, particularly where contractual relationships are concluded through automated or platform-based systems.

Malaysia provides one of the more developed examples in this regard. Bank Negara Malaysia's consumer protection and digital financial service frameworks place significant emphasis on product transparency, simplified disclosures, responsible digital engagement, and accessibility of financial information to consumers with varying literacy levels (BNM, 2022). Regulatory approaches within Malaysia increasingly acknowledge that digital financial services may create informational asymmetries capable of undermining meaningful consumer understanding, particularly among users with limited digital or financial literacy (BNM, 2022; IFSB, 2022).

This concern is also reflected in broader Islamic finance governance literature. The Islamic Financial Services Board (IFSB) notes that digital financial systems create new supervisory challenges relating to disclosure standards, fair treatment of participants, operational transparency, and consumer understanding within Islamic financial institutions (IFSB, 2022). Recent scholarship similarly argues that rapid fintech integration may expose financially vulnerable users to forms of procedural participation that do not necessarily correspond with substantive contractual understanding (Smolo, 2026; Abbas et al., 2025).

Outside Islamic finance specifically, global financial inclusion studies increasingly identify digital literacy as a prerequisite for effective participation within digital financial ecosystems. The World Bank (2022) observes that expansion in digital financial access does not automatically improve consumer decision-making where users lack the

capacity to interpret financial terms, evaluate risks, or navigate digital interfaces effectively. UNESCO (2018) similarly conceptualizes digital literacy as extending beyond technical usage to include cognitive and evaluative skills necessary for meaningful engagement within digital environments.

These concerns assume particular significance within *Takaful* operations because participant understanding is closely connected to the validity of contractual consent under Islamic law. Unlike conventional consumer protection frameworks that often prioritize procedural disclosure, Shariah principles governing *ridha*, *bayan*, and *amanah* require a level of understanding capable of supporting meaningful and informed participation within contractual relationships (Kamali, 2000; El-Gamal, 2006).

Comparative developments demonstrate that digital financial inclusion strategies are increasingly accompanied by consumer-focused safeguards aimed at improving participant comprehension and reducing informational asymmetries within digital financial environments (BNM, 2022; IFSB, 2022). For Nigeria, these developments suggest that the sustainability of digital *Takaful* operations may depend not only on technological expansion, but also on the incorporation of participant-centered governance measures capable of supporting meaningful engagement with digital financial services.

4.6.0 Regulatory Frameworks Governing *Takaful* and Digital Financial Services in Nigeria

The regulatory landscape for *Takaful* and digital financial services in Nigeria is shaped by multiple legal and supervisory instruments. . This section reviews Nigeria's core regulatory instruments governing *Takaful* operations and digital financial services, analyzing their

alignment with Shariah principles and global regulatory trends.

4.6.1 The Nigerian Insurance Act (2003) and NAICOM *Takaful* Guidelines (2013, Revised 2020)

The Nigerian Insurance Act of 2003 remains the primary statute regulating insurance business in Nigeria. Although it does not provide distinct provisions for Islamic insurance, Section 2(1) mandates that no person shall transact insurance business without registration, giving the National Insurance Commission (NAICOM) wide regulatory powers (Insurance Act, 2003).

In response to market demand and regulatory gaps, NAICOM issued the Operational Guidelines on *Takaful* Insurance in 2013, revised in 2020. The guidelines establish licensing requirements, capital adequacy standards, governance structures, and operational conduct for *Takaful* operators in Nigeria. Key features relevant to risk management and governance in the guidelines include:

- i. **Shariah Advisory Board (SAB) Requirement:** Every licensed *Takaful* operator must constitute a Shariah Advisory Board to oversee product development, ensure Shariah compliance, and monitor operational practices (NAICOM, 2020).

- ii. **Risk Management Systems:** Operators are mandated to implement sound risk management and internal control frameworks (Guideline 5.8), though the guidelines do not explicitly address digital risks or participant literacy concerns.

- iii. **Transparency and Disclosure:** The guidelines emphasize transparency in financial reporting and participant communication, they stop short of specifying standards for disclosure in digital transactions (NAICOM, 2020).

4.6.2 The Central Bank of Nigeria (CBN) Regulatory Framework for Open Banking (2021)

The CBN's Regulatory Framework for Open Banking in Nigeria (2021) aims to foster innovation, financial inclusion, and secure data sharing among financial service providers (CBN, 2021). Although primarily targeted at banking institutions, its provisions have implications for *Takaful* operators engaged in digital distribution and partnerships with fintech firms. Notable features include:

- i. **Consent Management:** The framework mandates customer consent for data sharing, stipulating transparency, clarity, and security in consent mechanisms (CBN, 2021). However, it does not address the issue of consent validity among users with low digital literacy.
- ii. **Operational Risk and Governance:** The CBN's Open Banking Framework and Operational Guidelines require participating institutions to implement operational and security measures relating to cybersecurity, data protection, and secure digital service delivery (CBN, 2021; CBN, 2023). These concerns are particularly relevant to digital *Takaful* operations, where platform integrity and participant trust remain closely connected to operational reliability and Shariah governance obligations

4.6.3 The Nigerian Data Protection Act (NDPA) 2023

The NDPA 2023 codifies data privacy and protection obligations for entities handling personal data in Nigeria. For *Takaful* operators, especially those taking advantage of digital platforms, the Act introduces key compliance requirements concerning data handling, consent, and privacy rights (NDPC, 2023). Under Section 24, data controllers must ensure that consent is freely given, specific, informed, and unambiguous.

While the NDPA strengthens the legal basis for obtaining valid consent, its provisions, like other regulatory instruments, are drafted from a secular consumer protection perspective. They do not engage with the doctrinal necessity of informed consent under Islamic law, nor do they account for varying levels of digital literacy among financial service consumers.

4.6.4 Comparative Perspectives: Global Regulatory Approaches

Globally, regulatory authorities in Islamic finance jurisdictions have begun integrating considerations of digital literacy and participant protection into their supervisory frameworks. For instance, the Islamic Financial Services Board (IFSB) Guiding Principles on Conduct of Business (2022) emphasize the need for effective disclosure, fair treatment, and enhanced consumer understanding in digital environments (IFSB, 2022).

In Malaysia, Bank Negara Malaysia (BNM) has adopted a proactive stance by issuing guidelines that explicitly recognize the risks posed by digital illiteracy and the doctrinal requirements for informed consent under Shariah-compliant contracts (BNM, 2022). This includes mandating operators to provide product disclosures in simple language and accessible formats, with consideration for varying literacy levels.

Discussions

The intersection of principles of Islamic financial law and Nigeria's regulatory framework for *Takaful* and digital financial services reveals critical areas of convergence and divergence. This section synthesizes the requirements with the regulatory realities to assess the underlying risks and compliance challenges confronting *Takaful* operations in Nigeria's evolving digital ecosystem.

Informed Consent and Digital Takaful Operations

Recent scholarship on digital financial services increasingly questions whether automated consent mechanisms provide consumers with meaningful understanding of contractual obligations within platform-based financial environments (OECD, 2023; World Bank, 2022). Concerns relating to clickwrap agreements, standardized digital disclosures, and automated onboarding systems have become particularly prominent within fintech literature because users frequently accept contractual terms without fully reviewing or understanding their implications (Bhattacharya et al., 2025).

Within Islamic financial transactions, these concerns carry additional doctrinal significance because the validity of contracts depends not merely upon procedural acceptance, but upon informed and voluntary participation consistent with the principles of *ridha*, *bayan*, and the avoidance of *gharar* (Kamali, 2000; El-Gamal, 2006). Studies on Islamic finance governance emphasize that participant understanding remains central to the ethical legitimacy of Shariah-compliant financial arrangements (IFSB, 2022; Ali, 2020).

The increasing use of digital onboarding systems within *Takaful* operations therefore raises important questions regarding the extent to which contemporary digital consent structures satisfy shariah requirements governing informed participation. This issue becomes particularly significant where participants interact with lengthy digital disclosures, automated enrollment systems, or algorithm-driven interfaces capable of limiting substantive engagement with contractual terms.

In Nigeria, these concerns intersect with broader challenges relating to digital and financial literacy. Empirical studies

continue to show uneven levels of digital competence and limited user confidence in digital financial systems despite increased adoption of digital financial services (EFInA, 2023; Federal Ministry of Communications and Digital Economy, 2020). Within digital *Takaful* environments, such conditions may affect participant understanding of contribution structures, exclusions, surplus arrangements, and other contractual obligations embedded within digital platforms.

Although digital systems may improve operational efficiency and financial inclusion, current literature suggests that technological accessibility alone does not necessarily guarantee meaningful contractual understanding or effective participant engagement within digital financial transactions (UNESCO, 2018; Smolo, 2026). These concerns remain particularly relevant within *Takaful* operations because questions of participant comprehension are directly connected to broader issues relating to transparency, fairness, and contractual legitimacy under Islamic law.

The Shariah Board's Oversight Role and Digital Risks

The expansion of digital financial systems within *Takaful* operations raises important questions regarding the scope of Shariah governance responsibilities in increasingly automated financial environments. Existing Shariah governance frameworks within Islamic finance traditionally concentrate on product approval, contractual compliance, institutional supervision, and financial oversight (IFSB, 2009; AAOIFI, 2020). However, the growing integration of digital onboarding systems, automated disclosures, algorithm-driven underwriting, and platform-based participant engagement introduces governance concerns extending beyond conventional supervisory models.

Research on digital financial governance suggests that participant interaction with digital financial systems may increasingly occur through standardized interfaces that reduce opportunities for clarification, negotiation, or meaningful engagement with contractual information (OECD, 2023; Bhattacharya et al., 2025). Within *Takaful*, these developments raise questions regarding whether existing governance structures adequately address risks associated with participant comprehension, transparency of digital processes, and the doctrinal validity of consent obtained through automated systems.

The role of Shariah Advisory Boards becomes particularly significant in this context because digital financial systems may affect not only operational efficiency but also the ethical and contractual integrity of *Takaful* arrangements. Current studies on Islamic finance increasingly insist that Shariah governance extends beyond formal product certification to include broader responsibilities relating to fairness, transparency, fiduciary accountability, and participant protection within financial transactions (Ali, 2020; IFSB, 2022).

Despite these developments, current regulatory frameworks governing *Takaful* operations in Nigeria provide limited guidance regarding the oversight responsibilities of Shariah Advisory Boards within digital financial environments. NAICOM's Revised Operational Guidelines for *Takaful* Insurance primarily address institutional governance and Shariah compliance structures without specifically addressing supervision of digital consent mechanisms, interface transparency, algorithmic decision-making systems, or participant comprehension standards (NAICOM, 2020).

This regulatory gap becomes increasingly significant as digital systems assume a

more central role in participant interaction with *Takaful* services. Questions concerning the adequacy of digital disclosures, transparency of automated processes, and accessibility of contractual information may directly affect both participant understanding and broader perceptions of Shariah legitimacy within digital *Takaful* operations.

Regulatory Gaps in Digital Takaful Governance

Contemporary regulatory frameworks governing digital financial services increasingly emphasize consumer protection, cybersecurity, operational resilience, and data governance within platform-based financial environments (OECD, 2023; World Bank, 2022). In Nigeria, regulatory instruments such as the Central Bank of Nigeria's Open Banking Framework and the Nigeria Data Protection Act 2023 similarly impose obligations relating to data security, digital consent, and consumer information management (CBN, 2021; NDPA, 2023). These developments reflect broader regulatory recognition of the risks associated with digital financial transactions and automated service delivery systems.

Despite these developments, existing regulatory approaches largely assess digital financial participation from procedural and operational perspectives. Nigerian regulatory frameworks governing digital finance primarily focus on institutional compliance, operational security, data protection, and financial system stability, while comparatively limited attention has been devoted to the doctrinal and ethical dimensions of participant engagement within Islamic financial transactions. Consequently, compliance with general consumer protection obligations may not necessarily satisfy Shariah requirements governing informed consent, transparency, fairness, and the avoidance

of *gharar* within digital *Takaful* operations.

This limitation becomes particularly significant in relation to digital consent mechanisms used within *Takaful* platforms. Nigerian laws provide limited guidance on whether clickwrap agreements, automated onboarding systems, and standardized digital disclosures adequately satisfy the requirements of informed and voluntary participation under Islamic financial transactions, particularly where participants possess limited digital literacy or restricted understanding of contractual implications. Existing scholarship on Islamic finance governance similarly suggests that conventional digital finance regulations often inadequately address the substantive quality of participant understanding within Islamic financial transactions (Shalhoob, 2025; Smolo, 2026). As a result, digital *Takaful* operators may formally comply with disclosure obligations while participants remain unable to meaningfully interpret contractual terms or fully appreciate the implications of digital financial engagement.

This concern becomes more pronounced within digital environments characterized by automated onboarding systems, standardized clickwrap agreements, algorithm-driven financial processes, and increasingly complex digital interfaces. Existing fintech literature suggests that such systems frequently prioritize efficiency, scalability, and automation over substantive participant engagement with contractual information (Bhattacharya et al., 2025; OECD, 2023). Within *Takaful* however, participant comprehension is important because contractual legitimacy remains closely connected to informed and voluntary participation under Islamic law.

The fragmented structure of Nigeria's regulatory framework further complicates these concerns. Oversight of insurance operations, digital financial services, and data governance currently operates through separate institutional mechanisms involving NAICOM, the Central Bank of Nigeria, and the National Data Protection Commission. Although these frameworks collectively address operational compliance and consumer protection concerns, limited regulatory integration exists regarding the implications of digital consent, participant understanding, and Shariah governance within Islamic financial services. The approaches to digital risk management also remain largely institution-centered. They focus mainly on operational resilience, cybersecurity, and institutional compliance while providing comparatively limited safeguards addressing participant vulnerability arising from low digital literacy, misunderstanding of digital disclosures, or informational asymmetries within digital financial environments.

Comparative regulatory developments in jurisdictions such as Malaysia demonstrate a more integrated approach toward digital financial supervision and participant protection. Regulatory frameworks issued by Bank Negara Malaysia increasingly emphasize accessible disclosures, fair digital conduct, and participant-focused communication standards within digital financial services (BNM, 2022). Similarly, the Islamic Financial Services Board (IFSB) has emphasized the importance of transparency, fair treatment, and consumer understanding within digital Islamic financial environments (IFSB, 2022). These comparative approaches reflect growing recognition that digital financial regulation must extend beyond technical compliance to include the quality of

participant engagement within digital financial systems.

Finally, Nigerian regulatory arrangements provide limited direction concerning the role of Shariah Advisory Boards in supervising digital participant engagement within *Takaful* platforms. Shariah Boards remain primarily oriented toward institutional governance, financial compliance, and operational oversight rather than participant-facing digital risks. Consequently, questions concerning digital transparency, interface

5. Conclusions and Recommendations

Summary of Findings

This study examined the implications of digital literacy for risk management, Shariah compliance, and regulatory governance within Nigeria's emerging *Takaful* industry. The analysis demonstrated that while digital financial technologies expand access to *Takaful* services, they also generate operational and doctrinal risks capable of affecting participant protection, contractual validity, and institutional integrity.

The study identified that low digital literacy may impair participant understanding of *Takaful* structures, contribution mechanisms, contractual exclusions, and digital consent processes. Within digital *Takaful* environments, reliance on automated onboarding systems, standardized digital disclosures, and clickwrap agreements may encourage procedural participation without meaningful contractual understanding. These concerns are particularly significant within Islamic financial transactions because informed consent, transparency, and fairness remain central to the doctrinal legitimacy of *Takaful* contracts.

The analysis further revealed that Nigeria's regulatory framework governing digital financial services remains fragmented across multiple

institutional structures, including NAICOM, the Central Bank of Nigeria, and the National Data Protection Commission. Although existing frameworks address operational compliance, cybersecurity, and consumer protection, comparatively limited regulatory attention has been devoted to the doctrinal implications of digital consent and participant comprehension within Islamic financial transactions.

It proceeded to highlight governance challenges relating to the role of Shariah Advisory Boards within digital *Takaful* operations. Existing supervisory structures remain largely oriented toward institutional compliance and product approval while providing limited guidance regarding oversight of digital participant engagement, interface transparency, and automated consent mechanisms.

Conclusions

The digitalization of *Takaful* operations in Nigeria presents both opportunities for financial inclusion and emerging governance challenges for Islamic financial regulation. While digital platforms improve accessibility and operational efficiency, they may simultaneously weaken meaningful participant engagement with contractual information where digital literacy levels remain uneven.

This study concludes that existing regulatory approaches to digital financial governance do not sufficiently address the distinctive doctrinal requirements governing informed consent and participant understanding within Islamic financial transactions. Compliance with procedural disclosure standards alone may therefore be inadequate where participants lack the capacity to meaningfully interpret contractual terms or understand the implications of digital engagement.

The findings further suggest that contemporary Shariah governance frameworks within Nigeria's *Takaful* industry must evolve beyond conventional institutional supervision to address participant-facing digital risks. Questions relating to interface transparency, automated disclosures, algorithm-driven processes, and digital consent mechanisms increasingly affect not only operational integrity but also the ethical legitimacy of *Takaful* transactions under Islamic law.

Ultimately, the sustainability of digital *Takaful* operations in Nigeria may depend upon the development of governance frameworks capable of reconciling technological innovation with the doctrinal principles of transparency, fairness, informed participation, and participant protection that underpin Islamic financial transactions

Recommendations

i. Strengthening Shariah Governance

NAICOM should consider expanding the supervisory scope of Shariah Advisory Boards within *Takaful* operations to include oversight of digital consent mechanisms, participant disclosures, and digital engagement processes. Greater attention should also be devoted to ensuring that digital financial participation remains consistent with Shariah principles governing informed consent, transparency, and fairness.

ii. Regulatory Harmonization

Improved coordination between NAICOM, the Central Bank of Nigeria, and the National Data Protection Commission would assist in addressing regulatory fragmentation affecting digital

Takaful operations. More integrated regulatory standards may enhance oversight of digital financial risks, participant protection, and operational governance within Islamic financial services.

iii. Digital Consent and Disclosure Standards

Regulators should encourage clearer and more accessible digital disclosure practices within *Takaful* platforms. Simplified contractual language, multilingual disclosures, and participant-focused communication mechanisms may improve user comprehension and reduce informational asymmetries within digital financial transactions.

iv. Participant Education and Accessibility

Takaful operators should adopt participant education initiatives aimed at improving digital financial literacy and enhancing understanding of *Takaful* principles, contractual obligations, and digital financial processes. Greater attention should also be given to accessibility measures capable of accommodating participants with varying levels of technological competence.

v. Industry Capacity Building

Continuous collaboration between regulators, Shariah scholars, legal practitioners, and technology specialists may assist in strengthening governance capacity within Nigeria's digital *Takaful* sector. Further scholarly and institutional engagement with digital risk governance within Islamic finance remains necessary as financial technologies continue to evolve.

References

Abbas, S. I., Ahmed, R., & Karim, M. A. (2025). The impact of digital literacy on the performance of Islamic banks. *International Journal of Innovative Research and*

Scientific Studies, 8(4), 2426–2437.

Accounting and Auditing Organization for Islamic Financial Institutions

- (AAOIFI). (2020). Shari'ah standards. AAOIFI.
- Ali, S. N. (2020). Ethical challenges in Islamic finance: Navigating new technologies. *Journal of Islamic Business and Management*, 10(1), 1–18.
- Atkinson, A., & Messy, F. A. (2012). Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) pilot study. OECD Working Papers on Finance, Insurance and Private Pensions, No. 15.
- Bank Negara Malaysia (BNM). (2022). Financial consumer protection annual report 2022. BNM.
- Bhattacharya, S., Samiuddin, M., & Kaushik, A. (2025). AI revolution in insurance: Bridging research and reality. *Journal of Insurance and Financial Technology*, 9(2), 145–162.
- Billah, M. M. (2019). *Applied Islamic finance: The case of Takaful*. Palgrave Macmillan.
- Billah, M. M. (2019). *Islamic insurance (Takaful): Theory, practice and challenges*. Routledge.
- Central Bank of Nigeria (CBN). (2021). *Regulatory framework for open banking in Nigeria*. CBN.
- Chapra, M. U. (2008). *The Islamic vision of development in the light of Maqasid al-Shariah*. Islamic Research and Training Institute.
- Dusuki, A. W., & Abdullah, N. I. (2007). *Maqasid al-Shariah, Maslahah, and corporate social responsibility*. *The American Journal of Islamic Social Sciences*, 24(1), 25–45.
- EFInA. (2023). *Access to financial services in Nigeria 2023 survey*. Enhancing Financial Innovation and Access.
- El-Gamal, M. A. (2006). *Islamic finance: Law, economics, and practice*. Cambridge University Press.
- Enhancing Financial Innovation and Access (EFInA). (2023). *EFInA access to financial services in Nigeria 2023 survey*. EFInA.
- Federal Ministry of Communications and Digital Economy. (2020). *National digital economy policy and strategy (2020–2030)*. Government of Nigeria.
- Hassan, M. K., & Lewis, M. K. (Eds.). (2007). *Handbook of Islamic banking*. Edward Elgar Publishing.
- Htay, S. N. N., & Salman, S. A. (2013). Towards standardization of Takaful contracts: Suggestions for practice and policy implications. *Journal of Islamic Economics, Banking and Finance*, 9(3), 45–61.
- Islamic Financial Services Board (IFSB). (2009). *Guiding principles on governance for Takaful undertakings (IFSB-8)*.
- Islamic Financial Services Board (IFSB). (2022). *Guiding principles on conduct of business for institutions offering Islamic financial services*. IFSB.
- Jaafar, F. H., & Hamzah, S. R. (2026). *Drivers of Islamic financial literacy: The roles of financial behavior, digital literacy and financial socialization*. *Issues and Perspectives in Business and Social Sciences*, 6(2), 264–279.
- Kamali, M. H. (2000). *Islamic commercial law: An analysis of futures and options*. Islamic Texts Society.
- Kamali, M. H. (2008). *Shari'ah law: An introduction*. Oneworld Publications.
- Khan, M. F. (2016). The structure of Takaful: An overview. *Journal of Islamic Banking and Finance*, 33(1), 57–68.



- National Data Protection Commission (NDPC). (2023). Nigeria Data Protection Act, 2023. NDPC.
- National Insurance Commission (2013). Guidelines for Takaful insurance operations in Nigeria. NAICOM.
- National Insurance Commission (NAICOM). (2020). Revised operational guidelines for Takaful-insurance operators in Nigeria. NAICOM.
- Nigerian Insurance Act. (2003). Insurance Act, 2003 (CAP I17 LFN 2004). Federal Government of Nigeria.
- Obaidullah, M. (2015). Islamic financial services. Islamic Development Bank.
- Organisation for Economic Co-operation and Development. (2023). Technology and innovation in the insurance sector. OECD Publishing.
- Shalhoob, H. (2025). The role of AI in enhancing Shariah compliance: Efficiency and transparency in Islamic finance. *Journal of Infrastructure, Policy and Development*, 9(1), 1–18.
- Shehu, F. M. (2025). Prospects of fintech in Takaful operations in Nigeria. *International Journal of Accounting, Management and Economic Review*, 1(1), 223–239.
- Smolo, E. (2026). Islamic finance in the digital age: Fintech as a catalyst for ethical and inclusive finance. *Religions*, 17(2), 218.
- Susanti, M. (2025). Digital transformation and risk management in Islamic banking. *Proceedings of the International Islamic Conference Proceedings*.
- UNESCO. (2018). A global framework of reference on digital literacy skills for indicator 4.4.2. UNESCO Institute for Statistics.
- World Bank. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank.