



Digital Transformation of Islamic Banking in Indonesia: Regulatory Challenges in Promoting Financial Inclusion

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Article History Received : 2026-07-29 Revised: 2026-08-10 Published: 2026-09-30 Keywords: <i>Digital Transformation; Financial Inclusion; Islamic Banking; Regulatory Governance; Sharia Governance.</i>	Digital transformation has changed the model of implementing Islamic banking in Indonesia and opened up opportunities to expand financial inclusion. However, increasing access through digital services does not automatically guarantee substantive inclusion because there are still issues of digital literacy, consumer protection, data security, cybersecurity, and regulatory fragmentation. This study aims to analyze regulatory challenges in the digital transformation of Indonesian Islamic banking and assess the ability of the applicable legal framework to promote safe and equitable financial inclusion. The research uses doctrinal legal research methods with legislative, conceptual, analytical, policy, and limited comparative perspectives. Legal materials are analyzed qualitatively through norm identification, systematic interpretation, and evaluation of regulatory coherence. The results of the study show that Indonesia already has a relatively comprehensive regulatory framework, but still faces the problem of fragmentation and weak integration between digital governance, consumer protection, data protection, financial inclusion, and Sharia governance. The research concludes that digitalization cannot be seen as an automatic inclusion instrument. The research recommends the development of an adaptive, risk-based, and inclusion-oriented regulatory architecture by strengthening inter-agency coordination, consumer and data protection, digital supervision, and technological competence in sharia governance.

I. INTRODUCTION

Digital transformation has been one of the factors that has changed the structure of Indonesia's banking industry, including Islamic banking. Digitalization is no longer limited to moving conventional services to electronic applications, but has evolved into a change in the way banks provide products, manage relationships with customers, process transactions, and expand the reach of financing (Nurdiana, 2026). The change theoretically opens up a huge

opportunity for Islamic banking to expand financial inclusion as technology can lower transaction costs, reduce geographical barriers, and allow people to obtain financial services without dependence on the presence of a physical office (D. C. P. Putri & Lutfianti, 2024). However, expanding digital access is not by itself synonymous with substantive financial inclusion. Legal issues arise when technological capabilities develop faster than regulatory capabilities in ensuring that access

takes place safely, fairly, transparently, and can be utilized by community groups that have limited literacy and digital capacity.

The urgency of this problem can be seen from the gap between the development of the Islamic finance industry and the level of Islamic financial inclusion of the Indonesian people. Data from the Financial Services Authority and the Central Statistics Agency show that in 2025 the Islamic financial literacy index will reach 43.42%, while the Islamic financial inclusion index is only 13.41% (Rohmah & Habibi, 2025). This gap shows that the increasing knowledge about Islamic finance has not been fully converted into the use of Islamic financial services. This condition becomes even more significant when placed in the context of industry development. By October 2025, Islamic banking assets have reached IDR 1,028.18 trillion with an annual growth of 11.34% (Pearl, 2025). Thus, the main problem is no longer solely how to increase the capacity of the Islamic banking industry, but how the growth and digital transformation translates into financial access that is actually used and provides benefits to the community.

From a legal perspective, the issue becomes complex because the digital transformation of Islamic banking is at the intersection of several interests that do not always run in harmony. Law Number 21 of 2008 concerning Sharia Banking

provides a legal basis for the implementation of banking based on sharia principles, while Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector expands the regulatory framework of the financial sector by including an agenda to strengthen inclusion, innovation, and consumer protection. These developments are then translated into the Financial Services Authority's regulations regarding commercial bank digital services, governance, risk management, information technology security, and consumer protection (Abubakar & Handayani, 2022). Normatively, the framework shows the state's efforts to create a balance between innovation and prudence. The problem lies in whether these various legal instruments have formed a coherent enough regulatory framework to make digitalization an instrument of financial inclusion, not just an industrial efficiency mechanism.

These challenges are increasingly important because digitalization can create new forms of vulnerability. Customers who formally have access to banking applications may not necessarily have the ability to understand terms of service, identify digital fraud risks, maintain data security, or use financial products effectively (Sari et al., 2025). From a legal perspective, these conditions raise issues regarding the limits of bank responsibility, consumer protection,

personal data security, information technology governance, and the effectiveness of supervision of digital financial services. These problems have broader consequences for Islamic banking because inclusion is not only related to access to financial products, but also to the principles of justice, utility, and protection of parties in weaker positions. Therefore, regulations that are too oriented towards accelerating innovation have the potential to increase access but at the same time increase the risk of digital exclusion, while regulations that are too restrictive can hinder innovation and reduce the ability of Islamic banks to reach unserved communities (Wahab & Ihsan, 2025).

Previous literature has identified that regulatory issues can hinder the achievement of financial inclusion through Islamic banking in Indonesia, particularly related to limited financing regulations and access to MSMEs. The study is important, but the development of digital banking presents a different dimension of the problem. The current challenge is not only related to whether regulations hinder banks from providing financing, but also whether the digital regulatory architecture is able to link technological innovation with safe and equitable financial inclusion (Aprilia et al., 2026). Thus, there is academic space to shift the analysis from just a question *Regulatory barriers* Towards the evaluation of the

coherence and adequacy of regulations in managing the digital transformation of Islamic banking.

This research departs from the premise that the success of the digital transformation of Islamic banking cannot be measured only through the growth of digital transactions, the number of application users, or the improvement of service efficiency. A more substantive measure is the ability of the legal framework to ensure that these innovations expand access while ensuring protection, security, transparency, and the ability of the community to benefit from Islamic financial services. Based on these issues, this study analyzes regulatory challenges in the digital transformation of Islamic banking in Indonesia and assesses the extent to which the applicable legal framework is able to support the achievement of financial inclusion. The analysis is directed to identify the tension between digital innovation, banking stability and prudence, consumer protection, and financial inclusion goals, as well as formulate a direction for strengthening regulations so that the digital transformation of Islamic banking not only expands access to financial services, but also produces substantive, safe, and equitable financial inclusion.

II. RESEARCH METHODS

This study uses the doctrinal law research method (*Doctrinal Legal Research*) with a qualitative approach to analyze the construction and

development of regulations governing the digital transformation of Islamic banking and its implications for the achievement of financial inclusion in Indonesia (Sonata, 2014). The selection of doctrinal methods is based on the character of the research problem centered on the relationship between legal norms, regulatory policies, supervisory authority agencies, consumer protection, and financial inclusion goals. The research is not directed to measure individual customer behavior statistically, but to test whether the applicable legal framework has provided an adequate foundation for an inclusive, safe, and equitable digital transformation of Islamic banking.

The research uses several complementary approaches. *The statute approach* is used to identify, interpret, and test the interconnectedness of norms contained in Law Number 21 of 2008 concerning Islamic Banking, Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector, Law Number 27 of 2022 concerning Personal Data Protection, as well as various regulations of the Financial Services Authority and Bank Indonesia related to digital services, risk management, consumer protection, information technology, and financial inclusion. This approach is used to see if there is consistency between the goals of digital transformation and the legal obligations of banks in providing protection to customers.

The conceptual approach is used to build conceptual relationships between digital transformation, Islamic banking, financial inclusion, consumer protection, and regulatory governance. The concept of financial inclusion in this study is not understood solely as the existence of access to financial services, but also includes the affordability, use, security, and ability of the community to benefit from these services. This conception is important to avoid the formal meaning of inclusion which is only based on the increase in the number of digital service users.

Furthermore, the *analytical approach* is used to examine how various legal instruments work simultaneously in shaping the *regulatory architecture* of the digital transformation of Islamic banking. This approach allows the research not only to inventory regulations, but also to identify potential overlaps, gaps, inconsistencies, or normative tensions between the digital innovation agenda and legal protection obligations. *The policy approach* is used to assess the regulatory orientation and policies of financial authorities in encouraging digitalization and financial inclusion. Meanwhile, the *comparative perspective approach* is used in a limited way to the development of digital financial regulatory principles and financial inclusion in the international literature to place the construction of Indonesian law in the global discourse.

The research legal material consists of primary, secondary, and tertiary legal materials. The primary legal materials include laws and regulations, OJK regulations, Bank Indonesia regulations, and official policy documents that have direct relevance to Islamic banking, digitization of financial services, consumer protection, data security, and financial inclusion. Secondary legal materials are obtained from articles in national and international scientific journals, academic books, research results, and institutional publications that discuss digital banking, Islamic finance, financial inclusion, financial technology, consumer protection, and regulatory governance. Tertiary legal materials are used to clarify the terminology and legal concepts needed in the interpretation process.

The selection of legal materials is carried out *purposively*, taking into account the direct relevance to the research focus, source authority, regulatory upheaval, and its contribution to the research argument. The international academic literature is prioritized to build a *research gap* and place the issue of digital transformation of Indonesian Islamic banking in a broader academic debate. Empirical data in the form of financial inclusion and literacy statistics, developments in the Islamic banking industry, and digitalization indicators are used as *contextual evidence*, not as the main object of quantitative analysis.

The analysis is carried out through three stages. The first stage is the identification and classification of norms based on regulatory issues, namely service digitization, financial inclusion, consumer protection, data protection, risk management, and supervision. The second stage is a systematic legal interpretation by connecting norms at various levels of regulation and testing them against the legal objectives of Islamic banking and the financial inclusion agenda. The third stage is a critical evaluation of the effectiveness of regulatory construction by bringing *together legal findings* with academic literature and relevant empirical evidence. The analysis is used to find *regulatory gaps* and *regulatory tensions*, then formulate directions to strengthen the regulatory framework.

The validity of the research argument is maintained through *source triangulation*, which is comparing the provisions of laws and regulations with sectoral regulations, authority policy documents, academic literature, and relevant empirical data. The technique is used to prevent conclusions from being based only on a textual reading of one legal instrument. The conclusion of the research is then built inductive-analytically from normative findings to a proposition regarding the need for regulation that is able to balance digital innovation, banking stability, consumer protection, sharia principles, and financial inclusion. With this design, the research places

the digital transformation of Islamic banking not only as a technological issue, but as a matter of legal governance reconstruction in ensuring that financial innovation produces substantive, safe, and equitable access.

III. RESULTS AND DISCUSSION

A. Digital Transformation of Islamic Banking and Changes in Financial Access Structure

The results of the study show that digital transformation has changed the position of technology from just an operational support instrument to an integral part of the strategy of Islamic banking development and expansion of financial access (Repormantika et al., 2025). These changes can be seen from the increasingly strong regulatory orientation towards digital services, technology governance, risk management, and consumer protection. POJK Number 21 of 2023 concerning Digital Services by Commercial Banks was explicitly born in response to changing public expectations and the development of digital-based services, while still requiring attention to risk management, customer data security, and consumer protection. These findings show that the digitalization of Islamic banking can no longer be positioned as a strategic choice for

each bank, but has become part of structural changes in the governance of the banking sector.

These changes have direct implications for the intermediation function of Islamic banking. Digitalization allows the process of opening accounts, identifying customers, transactions, payments, applying for financing, and communication between banks and customers to be carried out with a lower reliance on a physical office network (Kusairi et al., 2026). Economically, these conditions have the potential to reduce transaction costs and expand the geographical reach of services. Legally, the change shifts the object of supervision from banking activities centered on offices and physical documents to activities that rely on information systems, data, algorithms, electronic networks, and third-party technology providers (Bastari et al., 2026). Consequently, the concept of prudence in banking needs to be retranslated to include system security, digital operational resilience, data integrity, and the ability of banks to control the risks arising from the digital ecosystem.

The growth of the industry provides a strong reason why the transformation cannot be separated from the financial inclusion agenda. OJK noted that Islamic banking assets reached IDR 1,028.18 trillion in October 2025, growing 11.34% annually and becoming the highest value throughout the development of Indonesia's Islamic banking industry

at that time (Nor et al., 2026). By the end of 2025, Islamic banking assets will reach IDR 1,067.73 trillion or grow 8.92% annually (S&P 2026). This growth shows that the industry has a growing economic capacity. However, asset growth cannot be treated as a single indicator of inclusion success. If industrial growth is not accompanied by an expansion of service use by underserved communities, digitalization has the potential to strengthen institutional capacity without proportionately expanding its social benefits.

This issue becomes clearer when the concept of access is differentiated from the concept of inclusion. Access refers to the ability of people to access or obtain financial services, while substantive inclusion requires the ability to use those services effectively, safely, affordably, and sustainably. This distinction is important because digitalization can remove geographical barriers but at the same time create barriers based on digital capabilities (Sarjito, 2023). People who do not have adequate devices, stable internet connections, digital literacy, or the ability to understand contractual information can remain outside the system even though banking services have become available digitally. Thus, the findings of the study show that digitalization has a character *double-edged*. It can reduce location-based exclusion while creating digital capacity-based exclusions.

This condition shows that the success of digital transformation should not be measured by the number of applications, transaction volume, or number of digital users alone. A more relevant measure for a legal perspective is whether the innovation improves the ability of the community to benefit from banking services without increasing the risk disproportionately. Banks that provide digital applications to the public have met the *Availability*, but does not necessarily meet the *Accessibility*, *Affordability*, *Security*, and *Effective use* (Rizieq & Suwarsit, 2024). These differences produce important implications for regulation because it is not enough for the state to provide innovation space. The state must also ensure that the innovation does not shift the risk of the technology to customers who have a weaker bargaining position.

This need is in line with Bank Indonesia's macroprudential policy. PBI Number 23/13/PBI/2021 requires Sharia Commercial Banks and Sharia Business Units to meet the Macroprudential Inclusive Financing Ratio while still paying attention to the principles of prudence and risk management. The policy is directed to increase access to financing for MSMEs and low-income communities (Alawi et al., 2024). This means that Indonesia's legal framework has recognized from the beginning that inclusion cannot be separated from the precautionary principle. The findings of the study show that the

same principle needs to be extended to the digital realm: increased access through technology must go hand in hand with digital risk control.

From the perspective of Islamic banking, the relationship between digitalization and inclusion also has a more complex normative dimension. Islamic banking not only functions as an intermediary institution, but also carries the principles of justice, benefit, transparency, and compliance with Islamic principles (Jonah, 2026). Therefore, digitalization is not sufficiently assessed based on economic efficiency. Technology must be positioned as an instrument to expand the social benefits of the Islamic financial system (Arifyanto, 2025). If technology only increases the speed of transactions but is not able to reach economically and digitally vulnerable groups, then this transformation has not fully realized the inclusive goals of Islamic banking.

These findings lead to the conclusion that digital transformation has succeeded in changing the access mechanism, but the change in the mechanism has not by itself guaranteed equality of access outcomes. The difference between the two forms of equality is the basis for the next analysis, namely that the main issue is no longer whether Islamic banks should digitalize, but how the law directs digitalization to produce substantive inclusion. In other words, digital transformation requires a paradigm shift from technology-driven banking to rights-

and inclusion-oriented digital banking.

B. Regulatory Tensions between Digital Innovation, Consumer Protection, and Sharia Governance

The results of the study show that Indonesia's regulatory framework has actually undergone significant developments in responding to banking digitalization. POJK Number 21 of 2023 provides space for banks to innovate digital services while requiring attention to risk management, customer data security, and consumer protection. Normatively, this construction shows a shift in the regulator's approach from a model that solely limits bank activities to a model that provides innovation space with prudential requirements (Pandu et al., 2026). Such a model is relevant because overly restrictive regulation can hinder technological development, while excessive deregulation can increase customer vulnerability.

The problem is that digital innovation creates risks that have a different character than traditional banking risks. Credit and liquidity risks remain relevant, but banks also face risks of data leaks, cyberattacks, system failures, identity theft, transaction manipulation, reliance on technology vendors, and disruption of digital services (Restika & Sonita, 2023). These risks are not always apparent at the time the contract between the bank and the customer is

made. A customer can agree to a service without understanding how his or her data is processed, stored, shared, or used in decision-making. This condition results in information inequality that is more complex than conventional banking relationships (Ulya, 2023). Therefore, digital consumer protection cannot rely solely on the principle of formal consent.

The issue of consent becomes even more important when digital services use automated processes and data analytics. User consent to the app's terms and conditions does not necessarily indicate that the user truly understands the legal and economic consequences (Ardyansyah & Waluyo, 2026). In contractual relationships involving people with different levels of literacy, a formal approach to *Agree* can result in pseudo-protection (J. T. Putri et al., 2026). From a legal perspective, regulators need to encourage substantive transparency, including information on costs, data usage, transaction risk, complaint mechanisms, and the consequences of service failures. These findings suggest that consumer protection in the digital transformation should be understood as a corrective mechanism for inequality in bargaining positions, not just as an administrative obligation of banks.

The protection dimension gains stronger legitimacy when it is associated with the development of sharia governance. POJK Number 2 of 2024 specifically regulates the

implementation of sharia governance for Sharia Commercial Banks and Sharia Business Units as part of strengthening the characteristics of Islamic banking. The framework includes the functions of the Sharia Supervisory Board, sharia compliance, sharia risk management, sharia internal audit, and sharia external review (Makfud, 2026). SEOJK Number 15/SEOJK.03/2024 then provides further arrangements regarding the implementation of sharia governance. These findings show that the digital transformation of Islamic banking must be subject to two layers of governance at once, namely digital governance and Sharia governance.

The presence of these two layers results in interesting legal issues. Digital governance is primarily oriented towards security, system resilience, data protection, risk management, and user protection, while Sharia governance ensures that bank activities remain in accordance with sharia principles (Aisyah et al., 2026). Both have mutually supportive goals, but the supervisory mechanisms are not always identical. Digital risks, for example, can arise from algorithm design, data use, or relationships with technology providers, while sharia supervision has traditionally focused more on product and transaction compliance with sharia principles. The findings point to the need to broaden the understanding of sharia governance in order to be able to read the ethical and

legal consequences of the technology used by banks.

Another problem arises from institutional fragmentation. Banking regulation, macroprudential policy, consumer protection, data protection, cybersecurity, and sharia compliance are under different regulatory regimes (Aditya & Lestari, 2025). Sectorally, each regime can have a clear legitimacy and purpose. However, for banks and customers, all of these regimes interact in one digital transaction. This condition creates the possibility of *Regulatory overlap* when several authorities set the same object from different perspectives, but also *Regulatory Gap* when there is no one institution or norm that explicitly regulates the relationship between these risks. Therefore, regulatory issues are not sufficiently assessed based on the number of regulations available.

The PBI on the Inclusive Financing Ratio provides an important illustration of the need for integration. Sharia Commercial Banks and Sharia Business Units are required to meet the inclusive financing ratio, but these obligations are still accompanied by the principles of prudence and risk management (Despileny et al., 2024). This means that regulators have normatively recognized that inclusion and stability are not two separate agendas. Both must be designed simultaneously. In the digital context, this principle can be developed further: banks should not be encouraged to expand digital

access without building adequate security, consumer protection, and risk management capacity.

These challenges show that the regulatory paradigm is based on *Compliance* need to move towards *risk-based and adaptive regulation*. Adaptive regulation does not mean giving industry unlimited freedom, but it allows the law to respond to technological developments without losing its protective function (Dewi et al., 2026). This approach is relevant because technology evolves faster than the regulatory cycle. If every new innovation has to wait for new regulatory formation, the law will always be in a reactive position. Conversely, if regulatory principles are designed around risk, protection objectives, and adaptability, the legal framework can remain relevant to innovations that are not yet fully predictable.

The findings of further research suggest that sharia governance can be one of the instruments to strengthen such approaches. The principles of benefit, fairness, loss prevention, and protection of weaker parties can be the normative basis for assessing whether digital innovation actually generates benefits. This framework allows Islamic banking law to move beyond the question of "are the transactions sharia-compliant?" to the broader question, namely "is the way the technology used in the transaction consistent with the objectives of protection and benefit?" This shift in the question is important because

digital risks often arise not from the substance of the product, but from the way the product is designed, offered, and used.

Thus, the results of the study show that the problem of digital regulation of Islamic banking is not mainly caused by the absence of norms. The problem is more accurately understood as coherence and integration of norms. Indonesia already has regulations on digital services, financing inclusion, sharia governance, and consumer protection. However, the existence of separate instruments has not automatically resulted in an integrated regulatory architecture. The legal challenge lies in the ability to connect all these instruments so that digital innovation does not run alone, inclusion does not sacrifice protection, and sharia compliance is not separated from technology governance.

C. Reconstructing the Regulatory Architecture to Realize Substantive Financial Inclusion

The results of the analysis show that the main problem with Indonesia's digital transformation of Islamic banking lies in the gap between digital access and substantive inclusion. Available regulations have provided a foundation for digitalization and inclusion, but the relationship between the two still needs to be strengthened through a more integrated regulatory design. These

findings are important because regulatory approaches that are only oriented towards improving access can result in overly simplistic measures of success. The number of accounts, application users, or digital transactions can increase without guaranteeing that vulnerable groups receive proportionate protection and benefits (Priambodo & Triadi, 2025).

The need for reconstruction can begin by changing the regulatory orientation from *access regulation* to inclusive digital finance regulation. The first approach focuses on how banks provide services, while the second approach assesses how those services are used and who benefits. These differences have legal consequences. Regulations are not enough to require banks to provide digital channels, but they need to provide incentives and obligations so that they can be accessed by groups with different levels of literacy, income, and technological capacity. Inclusion thus becomes a regulatory goal, not just a side effect of innovation.

PBI Number 23/13/PBI/2021 can be one of the bases for the development of this paradigm because from the beginning the regulation has placed increasing access to financing for MSMEs and low-income people as a policy goal, but still requires banks to pay attention to prudence and risk management (Farina et al., 2025). The findings of the study show that the principle can be extended to the

digital dimension by making access quality, security, and usability part of the inclusion evaluation. Thus, the inclusion ratio or indicator not only takes into account the amount of financing, but can gradually consider the quality of the digital ecosystem that supports such access.

The second aspect is the strengthening of consumer protection as a key component of inclusion. Consumer protection has often been placed as a corrective instrument when violations occur. In the digital ecosystem, this approach is no longer adequate. Protection must be designed from the stage *Product Design*, *Digital Onboarding*, data processing, information, and dispute resolution (Fanani & Brata, 2026). The approach shifts the orientation from *ex post protection* become preventive consumer protection. For groups that are just entering the formal financial system, preventive protection is very important because their ability to make corrections after a loss is relatively limited.

The third aspect is the integration of data protection and financial inclusion. Data is a key component of digital transformation because it allows banks to identify, analyze risks, personalize products, and make decisions (Indarto & Santoso, 2024). However, the greater the reliance on data, the greater the risk of misuse or disproportionate data processing. Groups of people who have just entered the banking system may become more vulnerable because

they have a limited understanding of the economic value and legal consequences of their personal data. Therefore, data protection cannot be positioned as a technical issue separate from inclusion. It is a prerequisite for inclusion not to turn into a mechanism for information exploitation of vulnerable groups.

The fourth aspect is the strengthening of integration between *Digital Governance* and *Sharia governance*. POJK Number 2 of 2024 has established a sharia governance framework that includes the Sharia Supervisory Board, sharia compliance, sharia risk management, sharia internal audit, and sharia external review. The findings of the study show that these functions need to interact more strongly with technology governance (Rabih, 2026). The Sharia Supervisory Board, for example, is not enough to understand the substance of the contract or product, but needs to have the capacity to understand the consequences of sharia from the use of algorithms, data processing, *Automated decision-making*, and third-party services (Huda & Azzahro, 2026). This integration can expand the meaning of sharia compliance from *transactional compliance* become technology-enabled Sharia governance.

The fifth aspect is the development of risk-based and data-based supervision. The digital nature makes traditional supervision that relies on periodic checks less responsive to risks that occur in real

time. Regulation needs to encourage the ability of banks and regulators to monitor security indicators, system disruptions, consumer complaints, transaction failures, and digital risk patterns. This approach allows regulators to identify risks before they develop into systemic disruptions. For financial inclusion, this approach is also important because digital system failures in banks with large user bases can directly affect the communities that depend on these services.

The sixth aspect is to strengthen institutional coordination. Regulatory fragmentation is one of the important findings of this study because digital transformation is at the intersection of banking policy, macroprudential, consumer protection, personal data, cybersecurity, and sharia compliance (Jazuli & Washil, 2025). Coordination does not mean removing the sectoral authority of each institution. What is needed is a coordination mechanism that allows cross-sectoral risks to be addressed together. Without such a mechanism, an institution can assess a safe innovation from a particular perspective while significant risks remain in the domain of other institutions.

The reconstruction must also take into account that not all forms of digitalization generate the same risks. Uniform regulation of all innovations can result in *over-regulation* on low-risk services and *under-regulation* on high-risk services. Therefore, the proportionality principle approach becomes relevant (Alfarisi, 2026). The

higher the potential impact on funds, data, consumer rights, and system stability, the higher the standards of governance and oversight that must be applied. This principle allows innovation to continue to thrive without sacrificing the legal protection function.

The findings of the study finally show that the most relevant regulatory model for Indonesian Islamic banking is the adaptive, risk-based, and inclusion-oriented regulatory architecture. The model has three main characters. Regulation must be adaptive to technological changes, risk-based in determining the level of supervision, and oriented towards substantive inclusion as the ultimate goal (Prabowo, 2025). All three must operate simultaneously. Adaptive but non-protective regulations can increase risks; regulations that are protective but non-adaptive can hinder innovation; while regulations that encourage access without paying attention to people's capabilities can result in digital exclusion.

Conceptually, the findings result in a new relationship between three main elements of the research: digital transformation, regulatory architecture, and financial inclusion. Digital transformation becomes an instrument of change; regulation becomes a steering mechanism; while financial inclusion becomes a substantive goal. The relationship is not linear. Regulation determines whether digital transformation

results in inclusion or a new form of exclusion. Thus, technology is not a variable that automatically generates social benefits. The social effects of technology are highly dependent on the quality of the institutions and laws that govern them.

These findings also contribute to the legal discourse of Islamic banking. The literature that views digitalization primarily as a matter of efficiency and innovation needs to be complemented by the perspective that digitalization is a matter of distribution of benefits and risks. Who gains access, who bears the risks, how data is used, and how consumers are protected are legal questions that determine whether digitalization is truly inclusive. In the context of sharia, the question can be expanded to whether digital transformation results in greater benefits and prevents losses to vulnerable groups.

Ultimately, the digital transformation of Indonesia's Islamic banking should not be understood as a matter of choosing between innovation and regulation. Instead, the findings of the research show that appropriately designed regulations are a prerequisite for sustainable innovation. The legal framework should allow banks to innovate, but at the same time ensure that risks are not transferred to customers, especially those who are new to the formal financial system. True financial inclusion is achieved when people can not only enter the system, but also use services safely, understand their

rights and obligations, obtain protection in the event of losses, and enjoy the economic benefits of these services.

Thus, the results of the study confirm that the biggest challenge for Indonesia's digital transformation of Islamic banking is not a lack of regulation, but rather the need to integrate existing regulations into a legal architecture that is more adaptive, risk-based, protection-oriented, and based on inclusion goals. This direction allows digitalization to move from a mere banking modernization strategy to a legal policy instrument capable of expanding economic participation. It is at this point that digital transformation gains substantive legitimacy in Islamic banking: not because technology makes services faster, but because the law is able to ensure that the speed, efficiency, and reach of technology truly translates into fair access, effective protection, and broader benefits for society.

IV. CONCLUSION

Digital transformation has become an important part of the development of Islamic banking in Indonesia and provides significant opportunities to expand people's access to financial services. This study shows that digitalization has changed the pattern of banking from an office-oriented model to an ecosystem that increasingly relies on information technology, data, electronic systems, and platform-based services. These

changes provide benefits in the form of transaction efficiency, expanded geographical reach, ease of access, and opportunities to increase financing for previously underserved communities. However, this study finds that the expansion of digital access does not automatically result in substantive financial inclusion. Gaps in literacy, digital capacity, infrastructure, security, and consumer protection can cause some people to remain in vulnerable positions even though formal financial services are available.

The findings of the study show that Indonesia actually has a relatively developed regulatory foundation to regulate the digital transformation of Islamic banking. Law No. 21 of 2008 on Islamic Banking, Law No. 4 of 2023 on the Development and Strengthening of the Financial Sector, Financial Services Authority regulations on digital services, consumer protection, and sharia governance, and Bank Indonesia's policy on inclusive financing show that the state is concerned about the relationship between innovation, stability, protection, and inclusion. The main problem lies not in the absence of regulations, but in how these instruments work in an integrated manner. Regulatory fragmentation can result in *regulatory overlap* on one side and *regulatory gaps* on the other, especially when digital risks intersect with data protection, cybersecurity, consumer protection, sharia compliance, and financial inclusion.

The study also concludes that consumer protection should be placed as a substantive element of financial inclusion, not just a corrective mechanism after a loss occurs. Customers who have access to digital services but do not have the ability to understand contracts, transaction risks, data usage, or complaint mechanisms cannot yet be fully categorized as subjects of protected financial inclusion. This perspective emphasizes that the quality of inclusion must be measured based on people's ability to use services effectively, safely, affordably, and sustainably.

In the context of Islamic banking, the results of the study show the need for integration between *digital governance* and *Sharia governance*. Sharia compliance should not only be directed at the validity of contracts and products, but also needs to consider how technology is used, how customer data is processed, how automated decisions are made, and how digital risks are distributed. The principles of benefit, fairness, transparency, and loss prevention can be the normative basis for expanding the orientation of governance. Thus, digital transformation can be placed within the framework of Islamic banking objectives that not only pursue economic efficiency, but also ensure the distribution of benefits and protection to those in weaker positions.

Based on the overall findings, this study offers an *adaptive, risk-*

based, and inclusion-oriented regulatory architecture as a direction to strengthen regulations for the digital transformation of Indonesian Islamic banking. Adaptive regulation is needed so that the law is able to keep up with technological developments; a risk-based approach is needed so that the level of supervision is proportional to the potential for losses; while an inclusion orientation is needed so that digitalization does not stop at the expansion of formal access. Its implementation requires strengthening inter-institutional coordination, integrating consumer protection and personal data, increasing digital supervision capacity, and strengthening technological competence in sharia governance.

This study recommends that regulators develop digital inclusion indicators that not only measure the number of users or transactions, but also the quality of access, security, affordability, literacy, protection, and economic benefits received by the community. Islamic banks need to strengthen *privacy by design*, *consumer protection by design*, cybersecurity, and easily accessible complaint mechanisms. Sharia Supervisory Boards also need to strengthen their capacity in understanding digital technology and the risks that come with it. This approach allows digital transformation to develop without sacrificing the principles of prudence

and public protection. The main contribution of this research lies in the affirmation that the relationship between digitalization and inclusion is not an automatic relationship, but rather a relationship that is highly determined by the quality of the regulatory architecture. Digital transformation will only result in substantive financial inclusion if the law is able to direct innovation towards fair, safe, protected access, and provide real benefits to society.

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