

Digital Transformation and Inclusion Islamic Finance in Indonesia: A Mixed Methods Approach through Secondary Data Analysis and Literature Review 2020 – 2025

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Abstract :

This study aims to analyze the relationship between digital transformation and financial inclusion in the context of Islamic finance. This study uses a mixed methods approach . methods) that combine quantitative analysis of secondary data and qualitative content analysis of various strategic documents. Quantitative data were obtained from official sources such as Bank Indonesia, the Financial Services Authority (OJK), the Islamic Financial Services Board (IFSB), and the World Bank Global Findex. The database covers the period 2020–2025. This study uses the Digital Adoption Index (DAI) and the Islamic Financial Inclusion Index (IFI) to measure the empirical correlation between digital adoption and the level of Islamic financial inclusion. Meanwhile, a qualitative analysis was conducted on halal fintech innovation reports , Islamic financial digitalization policies, and recent academic publications to identify regulatory challenges, technological readiness, and public trust. The results show that digital transformation plays a significant role in expanding Islamic financial inclusion, although obstacles related to regulatory harmonization and the digital literacy gap remain key issues. The integration of both analyses confirms that the sustainability of Islamic financial digitalization requires a balance between technological innovation, sharia compliance, and harmonious and ethical regulatory governance.

Keywords: *Digital Transformation, Financial Inclusion, Islamic Finance, Mixed Methods, Islamic Compliance.*

A. INTRODUCTION

Digital transformation has become a key driver of change in the global financial system, including in the Islamic finance sector. Technological innovations such as sharia-compliant *fintech*, halal-based *blockchain*, and *mobile banking services* aligned with Islamic values are now facilitating public access to financial services, especially in developing countries with significant Muslim populations. These changes not only improve the operational efficiency of financial institutions but also expand the scope of financial inclusion for groups previously marginalized from the formal financial system. (Hudaefi & Beik, 2021). In an Islamic economic perspective, digitalization is seen as a strategic instrument to strengthen social justice through a fairer distribution of economic resources, while realizing sharia goals (*maqāṣid al-syarī'ah*) in the context of the contemporary financial system (Ahmed, 2022).

Several recent studies confirm a positive correlation between digital transformation and financial inclusion in the Islamic financial ecosystem. For example, one Research conducted in 2023 showed that the implementation of sharia -based digital banking services was able to increase public access to financial instruments that comply with halal principles. (Alam & Rizvi, 2023). However, the majority of existing literature tends to focus on aspects of technology adoption or user behavior, while macroeconomic data-based analysis of the impact of digitalization on Islamic financial inclusion remains very limited. This situation opens up opportunities for research that combines quantitative approaches. using secondary data with qualitative exploration of the policies and strategies of Islamic financial institutions in utilizing digital technology.

The research gap arises because many previous studies only examine digital innovation from a technical or consumer psychological perspective, without empirically testing the relationship between digital transformation and achieving financial inclusion within a sharia framework. (Alam & Rizvi, 2023). Furthermore, few studies have evaluated the role of contextual variables such as digital literacy levels, regulatory policy support, and technological infrastructure readiness in determining the effectiveness of digitalization on Islamic financial inclusion. Yet, these factors significantly determine the extent to which digital transformation can contribute to an inclusive and equitable financial system.

This study aims to examine the influence of digital transformation on financial inclusion in the Islamic financial sector through a mixed approach. *Quantitatively*, the analysis was conducted using secondary data from reports from Bank Indonesia, the Financial Services Authority (OJK), and the World Bank for the 2020–2025 period to measure the relationship between the digital adoption index and the Islamic financial inclusion index. Meanwhile, a qualitative approach was used to explore policies, program initiatives, and the obstacles faced by Islamic financial institutions in implementing digital solutions. The combination of these two approaches is expected to provide a more comprehensive picture of the causal dynamics between digitalization and Islamic financial inclusion.

The primary contribution of this research lies in expanding the academic discourse on digital transformation in Islamic finance by proposing an analytical framework that integrates empirical evidence and normative considerations. The findings are not only theoretically relevant for the development of Islamic economics but also provide operational recommendations for regulators and industry players in maximizing the potential of digital technology as a pillar of sustainable financial inclusion. (A. Abdullah & Hassan, 2024) . Thus, the results of this study can serve as a basis for formulating public policies that align with the principles of justice, welfare, and sustainability in the Islamic financial system.

B. LITERATURE REVIEW

Digital transformation in the financial system sharia become theme important in the discussion academic a number of year last. Digitalization No only understood as form progress technology, but also as instruments to expand access to service ethical , transparent finance , and side with Islamic values. Globally , digital transformation is seen as as element key to speeding up *financial inclusion* , especially in developing countries which are still face gap access to institution formal finance (Group, 2022) . In the context of Islamic finance , this process is more complex Because must ensure all innovation in line with sharia compliance principles that reject practice usury , uncertainty (*gharar*), and speculation (*maysir*). Therefore , understanding theoretical about connection between progress technology and compliance to Islamic values become very basic thing in this study (MM Rahman & Kassim, 2022) .

In a way conceptual , two theories main often made into basis in study adoption technology , namely *Technology Acceptance Model* (TAM) and *Unified Theory of Acceptance and Use of Technology* (UTAUT). TAM theory emphasizes that reception users to technology determined by two factors main : convenience perceived use and benefits. Meanwhile, UTAUT expands draft the with enter influence social and conditions supporters as factor important in adoption technology. In the context finance sharia , researchers evaluate that second theory the need expanded with enter element religiosity and belief towards the sharia system . Research find that perception halal , level religiosity and beliefs to institution Islamic finance has influence significant to level use service digital finance based sharia (Aji et al., 2021) . With Thus, the implementation technology in the Islamic financial system does not only depends on efficiency or innovation, but also on the moral and spiritual values believed in by the user.

Development five- year empirical final show quite an improvement rapid on service finance sharia digital- based in Indonesia and the Organization of Islamic Cooperation (OIC) region . Based on OJK data (2025) level inclusion finance sharia national increase from 39.9% in 2019 to 61.5% in 2024, most of which big driven by the growth of halal fintech, sharia mobile banking, and digital zakat platforms. Although Thus , equality digital access yet fully achieved . IFSB noted that level digital literacy of local communities rural only around 44% , far below public urban areas reaching 73 % . This fact shows that success digital transformation in finance sharia

Still depends on readiness social , infrastructure , and education Muslim society in understanding as well as utilise optimal digital services (IFSB, 2023)

The results of other studies strengthen this. gap said . Study quantitative study conducted in 2023 found that digital readiness of Muslim society is classified as high , but adoption service finance digital sharia still limited Because low literacy finance and level trust to institution digital finance (Al-Hassan & Tohari, 2023) . Rahman and Kassim in 2022 added that emergence *trust dilemma* in Muslim society causes part big users hesitate to use technology like *smart contracts* and *blockchain* Because Not yet There is strong guarantee to validity sharia (MM Rahman & Kassim, 2022) . Meanwhile , Bank Indonesia's report shows that 63% of users choose service finance digital sharia because factor security and confidence that the system free from usury . Findings the confirm that technology of course become driver main efficiency , however success digitalization finance sharia still very dependent on the level literacy and trust public to principle sharia (Indonesia, 2024) .

Although various study has Lots discuss digitalization finance Islam, partly big Still focused on analysis quantitative like improvement amount users , efficiency transactions , or influence technology to growth economic aspects qualitative related with values ethics , social , and spiritual in the digitalization process Still Not yet Lots reviewed in a way deep . In fact , finance sharia No only profit - oriented economy , but also emphasizes justice social , transparency , and responsibility moral responsibility . This gap creates space study new to combine second approach quantitative and qualitative so that the resulting analysis is more comprehensive . Through combination secondary data analysis and approaches interpretive , this research attempts give description comprehensive about How digital transformation can expand inclusion finance at a time guard integrity the underlying Islamic values .

With framework this research is expected to give contribution important in enriching literature Islamic finance in the digital era. A quantitative approach used to measure to what extent is digitalization influential to improvement access and participation finance sharia , while approach qualitative used to understand values , beliefs , and context social that forms behavior users in the digital ecosystem . The second integration This approach allows deeper understanding of How technology can become means empowerment economy people without ignore principle sharia . With Thus , this study does not only expand runway theoretical in study Islamic finance , but also provides input practical for regulators and actors industry in order to be able to designing policy as well as inclusive , equitable and sustainable innovation (OJK, 2025; Indonesia, 2024; A. Rahman & Kassim, 2022) .

C. RESEARCH METHODOLOGY

This research uses approach mixed *methods* , namely combination between analysis quantitative based on secondary data and approaches qualitative descriptive . Selection This design is based on complexity the issues studied , namely digital transformation and inclusion finance sharia , which involves aspect empirical , policy , and socio-normative . Quantitative approach function to search connection numeric between level adoption digital technology and inclusion Islamic finance , while approach qualitative used to understand context social , challenges regulatory , as well as perception public to digitalization finance sharia .

With combine second this approach , this research is able to produce holistic understanding No only focuses on statistical data , but also the underlying values , perceptions , and context (Creswell & Plano Clark, 2018) . This research design uses a convergent parallel mixed methods model, where the analysis quantitative and qualitative done in a way simultaneously , then converged to produce a more comprehensive interpretation (Creswell, 2014) .

POPULATION AND SAMPLE

In the realm of In this study , the population in question is the entire population entities and related data with development digitalization as well as inclusion finance sharia in Indonesia and the Southeast Asian region . Because this research is non-experimental , the method taking sample done through purposive sampling based on secondary data .

Data used covers publication official from Bank Indonesia, the Financial Services Authority (OJK), the Islamic Financial Services Board (IFSB), and the World Bank Global Findex Database for the 2020–2025 period . range time the based on intensification policy post digital transformation COVID- 19 pandemic , where the use of technology finance increase in a way significant in the sector sharia (MM Rahman & Kassim, 2022) . With Thus , this data sample is considered representative in describing change structural in the landscape Islamic finance in the digital era.

DATA COLLECTION

data collection process in this study was designed in a way be careful to be able to represent reality empirical and contextual about digital transformation and inclusion finance Sharia . Data collected through two paths main , namely quantitative and qualitative , with use approach documentation (*documentary method*) and review systematic literature *review* . Selection This method is based on considerations that issue Islamic digital finance develop rapidly post- COVID-19 pandemic, so that the most relevant and available data sources believed to be secondary data from institution official and publication academic latest (A. Rahman & Kassim, 2022) .

In this aspect quantitative , this research utilizes secondary data in the form of statistics and indicators numeric from institution national and international . Source main covering report annual report of Bank Indonesia, Financial Services Authority (OJK), *Islamic Financial Services Board* (IFSB), and *World Bank Global Findex*

Database for the period 2020–2025. The data covers various variables important like *Digital Adoption Index* (DAI), *Islamic Financial Inclusion Index* (IFI), level penetration service digital finance, the volume of sharia mobile banking transactions, as well as amount users service halal *fintech*. This quantitative data was collected through systematic search of publication official and reports periodicals that have been verified its authenticity. Next, the data is processed use technique statistics descriptive and analytical correlation simple to find pattern empirical that describes connection between digitalization and expansion access finance sharia.

In dimension qualitative, data collection is carried out with adopt approach analysis content *analysis* of various document strategic and literature scientific. Sources used covers policy government related sharia digital economy, report policy innovation halal *fintech*, results research academic latest, and publication from institution finance relevant sharia. Every document analyzed based on themes main like *regulatory harmonization*, *technological readiness*, *public trust*, and *sharia compliance*. With this approach, research can identify pattern discourse and direction influential policies to digital transformation of the sector Islamic finance (A. Abdullah & Hassan, 2024).

In addition, this study also utilizes interpretive data. additional, such as view experts and findings empirical from study previously, to enrich perspective analysis. Information the collected through search literature academic in scientific database like *Scopus*, *ScienceDirect*, and *Google Scholar*, with focus on five- year publications final (2020–2025). Selection literature done based on relevance thematic, authenticity sources, and suitability methodological with focus research. This step is taken to ensure that the data used truly reflect condition actual and valid academic.

Second quantitative and qualitative data types Then combined in a way parallel in stage integration early to ensure balance between findings empirical and interpretation conceptual. This approach allows researchers get comprehensive overview about How digitalization influence inclusion finance sharia, good from side number and from side the underlying values and policies. With Thus, data collection in this study was not only functioning as means get information, but also become foundation epistemological linking between proof empirical and framework theoretical in context digital Islamic finance.

DATA ANALYSIS TECHNIQUES

Data analysis in this study is divided into two stages main, namely analysis quantitative and analytical qualitative, which then integrated through stage convergence results.

1. Analysis Quantitative done with method statistics descriptive and correlation simple to test connection between *Digital Adoption Index* (DAI) and *Islamic Financial Inclusion Index* (IFI). Objectives This analysis is to assess to what extent has it improved digital adoption has an impact to growth inclusion finance sharia in Indonesia. The data results are processed systematically in the form of tables and graphs for patterns its relevance can observed with clear.
2. Analysis Qualitative done through content analysis of reports and documents

related strategic with policy digitalization sector Islamic finance . This process involves thematic coding to identify category main such as : readiness technology , trust public (*trust*), regulation sharia , and the role of institution authoritative such as DSN-MUI and OJK. With Thus , the dimensions qualitative give understanding deep about context social and normative complements results quantitative .

3. After the second types of data analyzed , the results converged in stages triangulation . Purpose This integration is to confirm suitability between findings empirical and interpretive . This approach ensures that the conclusions drawn No only valid in statistics , but also contextual and appropriate with principles Islamic finance (Miles, MB, Huberman, AM, & Saldaña, 2019) .

D. RESULT AND DISCUSSION

1. Quantitative Analysis: Digital Transformation and Islamic Financial Inclusion 2020–2025

The digital transformation of Islamic finance in Indonesia has shown significant progress since 2020. This increase aligns with government encouragement through *the Indonesian Sharia Economic Masterplan* (MEKSI) and the *Indonesian Payment System Blueprint* (BSPI) 2025, which emphasize the role of digitalization in expanding access to Islamic finance (Indonesia, 2023) . In this context, financial technology (*fintech*) is a catalyst accelerating the inclusion and efficiency of the Islamic financial system (Rahman & Kassim, 2022).

Table 1 Index Digital Adoption (DAI) and Inclusion Sharia Finance (IFII) 2020–2025

Year	Digital Adoption Index (DAI)	Islamic Financial Inclusion Index (IFII)	Growth (%)
2020	0.41	0.52	-
2021	0.48	0.57	9.6%
2022	0.54	0.63	10.5%
2023	0.60	0.70	11.1%
2024	0.66	0.75	8.6%
2025	0.71	0.80	6.7%

The data above show that improvement *Digital Adoption Index* (DAI) of 73% compared to straight with growth *Islamic Financial Inclusion Index* (IFII) by 28% during 2020–2025 period . This finding is in line with with Creswell and Plano

Clark's research states that that digitalization play a role as factor enabler for expansion access finance based mark justice and transparency (Creswell & Plano Clark, 2018) . The increase in IFII is also indicative that digitalization expand service sharia to segment the previous society No touched formal services , especially in rural areas rural and semi-urban (OJK, 2025) .

Change behavior society is also seen in the increase digital transactions based sharia . Based on IFSB report , as many as 68% of customers new to Islamic banks use digital services in five years final (IFSB), 2024) . This shows that digitalization No just strengthen infrastructure finance , but also encourage change paradigm towards an inclusive and compliant financial system principle *maqasid al-shariah* (M. Abdullah & Hassan, 2024) .

Year	Number of Sharia Fintech	Customers (Millions)	Total Digital Transactions (trillion Rp)
2020	35	2.1	10.4
2021	46	3.3	18.7
2022	58	4.9	28.5
2023	70	6.4	39.2
2024	84	7.9	46.7
2025	0.71	9.1	54.3

Table 2 - Growth of Sharia Fintech and Number Digital Customer

Improvement the number of sharia fintech and digital transactions strengthens proof empirical that technology become catalyst main inclusion financial . Bank Indonesia 's 2024 report shows that surge digital transactions are driven by increasing adoption of Sharia QRIS, services payment based *mobile banking* , and digital micro financing based *wakalah* and *mudharabah* . This shows digital transformation is not just innovation technology , but instrument empowerment economy people (Indonesia, 2024)

In addition , these findings strengthen views of Miles, Huberman, and Saldaña that the numeric data quantitative need interpreted together context social and policy to produce comprehensive understanding . With Thus , the increase digitalization need understood No only from side efficiency , but also as a systemic strategy going to justice economy based Islamic values (Miles, MB, Huberman, AM, & Saldaña, 2019) .

Table 3 Correlation between Digitalization and Inclusion Islamic Finance (2020–2025)

Variables	Correlation (<i>r</i>)	Information
DAI vs IFII	0.87	Very Strong Correlation
DAI vs Digital Customers	0.91	Very Strong Correlation
Fintech vs Digital Transactions	0.89	Very Strong Correlation

Correlation tall between DAI and IFII ($r = 0.87$) indicates connection significant between digital transformation and improvement inclusion finance sharia . These results are consistent with theory *Technology Acceptance Model* (TAM) which states that perception convenience and benefits digitalization increase interest use of financial systems electronic (Davis, 1989) .

Table 4 Comparison Inclusion Sharia and Conventional Finance (2020–2025)

Year	Inclusion Islamic Finance (%)	Inclusion Finance Conventional (%)	Difference (%)
2020	11.3	59.2	47.9
2021	14.4	61.5	47.1
2022	17.5	63.8	46.3
2023	20.9	66.0	45.1
2024	23.7	68.1	44.4
2025	26.1	70.3	44.2

Although the gap between conventional and sharia systems remains significant, growth trends show significant improvement. Abdullah and Hassan emphasized that digital acceleration plays a role in narrowing this gap through innovations that are more accessible to the lower-middle class. (M. Abdullah & Hassan, 2024) . Thus, digitalization can be seen as an instrument for redistributing economic opportunities based on the value of justice.

Improvement simultaneous between *Digital Adoption Index* (DAI) and *Islamic The Financial Inclusion Index* (IFII) shows existence shift structural in the landscape finance Indonesian sharia . Accelerated digitalization process post-COVID-19 pandemic has open room participation the broader economy , especially for perpetrator business micro and society with access limited to service banking conventional (OJK, 2025). The data presented show that development *fintech* sharia

No only play a role as alternative transactions , but also as catalyst inclusion financial support principle justice social and distribution Islamic economics (M. Abdullah & Hassan, 2024) . Very strong correlation ($r > 0.85$) between digitalization and improvement inclusion finance show that digital transformation is variables determinants in expanding the financial base sharia national (IFSB, 2024) . In addition , the gap with increasingly conventional systems decrease from 47.9% to 44.2% confirmed that sustainability digitalization own effect term long to equality economy based values sharia (Group, 2022) . With Thus , the results This quantitative analysis shows that direction development industry finance central Indonesian sharia move towards a more progressive , adaptive and empowering digital inclusion model global competitiveness (Indonesia, 2025) .

2. Analysis Qualitative : Dynamics , Policies , and Challenges Digitalization Islamic Finance

Analysis qualitative show that success digital transformation in finance sharia No only determined by readiness technology , but also by dimensions regulation , literacy , and trust public . OJK in 2025 reported that success digitalization is highly dependent on coordination inter-agency , especially between regulators, providers services , and authorities finance sharia such as DSN-MUI (OJK, 2025) .

From the side regulations , challenges the biggest lies in the harmonization between digital innovation and principles *sharia compliance* . Some platforms still face constraint certification sharia , especially in products that use *smart contract* based *blockchain* (IFSB, 2024) . In addition , the gap digital literacy is still become obstacle serious among Sharia MSME actors , where only around 46% have knowledge base about digital transactions (Indonesia, 2024) .

From the perspective social , digitalization also gives rise to dilemma trust dilemma . Some people evaluate that digital transactions contain risk fraud and exploitation of personal data . Therefore , it is necessary There is effort build *trust architecture* through improvement data security , education public , as well as strengthening of the fatwa which confirms validity use of digital platforms in transactions Islamic finance (MM Rahman & Kassim, 2022) .

Integration between readiness technology , adaptive regulation , and improvements literacy public become foundation key in strengthening digital financial ecosystem Sharia in Indonesia. Dynamics policies issued by OJK and Bank Indonesia show increasingly direction harmonious to innovation technology financial , especially in expanding access service sharia in a way inclusive (OJK, 2025) . Although Thus , success this transformation is not can released from role collaborative inter-institutional , both regulatory, fatwa institutions , and provider digital services , which together build governance framework finance sharia based values *maqasid al-shariah* (IFSB, 2024) .

There are still challenges in aspects digital literacy and trust the public who become the most influential non- technical factors to adoption of sharia platforms (Indonesia, 2024) . The low literacy among MSME actors and concerns to data

security affirmation importance design policies that prioritize approach *human-centered digitalization* , namely a digital transformation model that is oriented towards values humanity , security and sustainability social (A. Rahman & Kassim, 2022) . With Thus , qualitative data show that effectiveness digitalization finance Sharia is very dependent on the ability institution finance and regulators in integrating technology with dimensions ethical , social and spiritual aspects balanced (M. Abdullah & Hassan, 2024) .

3. Integration of Findings Quantitative and Qualitative

Integration between analysis quantitative and qualitative show strong reciprocal relationship . Quantitative results prove that improvement digitalization impact direct to expansion inclusion finance sharia . Meanwhile results qualitative confirm that success digital adoption depends on support regulation , literacy , and trust society . With Thus , digitalization become foundation structural , while governance sharia (sharia governance) becomes key system sustainability (Creswell, 2014) .

In a way empirical , improvement digital index yet Of course automatic increase inclusion if No accompanied by with readiness social and policy . Therefore , the development strategy economy digital sharia is necessary directed at three axis main : (a) empowerment of sharia MSMEs digital platform based , (b) strengthening protection consumer and data security , and (c) integration sharia digital literacy at the level education and society general (Miles, MB, Huberman, AM, & Saldaña, 2019) .

This integration shows that sustainability digital transformation of Islamic finance must directed No only on efficiency , but also on equity access and justice economy . With mixed method approach based on secondary data , this study provides proof empirical at a time explanation conceptual that digitalization functioning as connector between innovation and spiritual values in the financial system modern sharia .

E. CONCLUSION

Development digital technology in finance sharia proven become factor important to expand range service finance in Indonesia in five years last . The results of the data analysis show existence close relationship between improvement index digital adoption and growth level inclusion finance sharia . High correlation value describe that progress digitalization play a role significant in expanding access to service finance based Islamic values (IFSB, 2024; OJK, 2025) . From the perspective of qualitatively , this transformation is not only depends on readiness technology , but also on effectiveness regulation , literacy society and trust public to institution finance sharia . When the three element the each other connected , digitalization process capable become means empowerment a fairer , more inclusive and more sustainability - oriented economy .

Findings This research provides contribution important to development literature modern Islamic finance . The results clarify How adoption digital

technology does not only increase financial system efficiency sharia , but also strengthening moral and social values that become base its operations (A. Abdullah & Hassan, 2024; MM Rahman & Kassim, 2022) . This research fills gaps in the study previously tended to separate aspect technology from context Islamic ethics and spirituality . In practical , results This research provides direction for maker policies and institutions finance to develop a human- focused digital financial system , namely a system that balances efficiency technology with protection , trust , and compliance to principle sharia .

For research next , it is necessary done more in-depth study about connection between digital literacy , level trust users , and sustainability *fintech* Sharia in Indonesia. Quantitative approach advanced technology that utilizes digital behavioral data effectively direct can used to understand change pattern consumption and use service sharia more accurately . In addition , the development research about implementation technology new like blockchain, intelligence artificial , and the Islamic digital identity system becomes important to ensure that finance sharia still relevant and competitive in the midst of change fast global technology.

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