



Digital financial transformation: An Islamic economic analysis of online lending in the era of industrial revolution 4.0

Dwi Jati Marta^{1*}, Atikah Dewi Utami²

¹Policy Analyst, Regional Secretariat of Bangka Regency, Bangka, Indonesia

²Faculty of Sharia and Islamic Economics, IAIN Syaikh Abdurrahman Siddik Bangka Belitung

Article History

Article History

Received : 2025-05-18

Revised : 2025-08-21

Accepted : 2025-08-21

Published : 2025-08-23

Keywords:

Digital financial literacy, Fintech innovation, Islamic economics, Online lending, Sharia compliance.

DOI:

[10.20885/JILDEB.vol1.iss1.art4](https://doi.org/10.20885/JILDEB.vol1.iss1.art4)

JEL Classification:

G23, O33, K20, Z12

Corresponding author:

Dwi Jati Marta

dwijati73@gmail.com

Author's email:

atikah.dewiutami@gmail.com

Paper type:

Research paper

Abstract

Purpose – This study critically examines online lending practices by evaluating their compliance with Sharia principles. The research also highlights the interplay between regulations, public digital-financial literacy, and Sharia-based fintech innovation, and proposes a digital business model that is fair, transparent, and sustainable.

Methodology – This research uses a descriptive qualitative literature review by systematically analyzing primary and secondary sources. This analysis followed systematic review guidelines through the stages of selection, data reduction, thematic analysis, and contextual interpretation, ensuring validity, timeliness, and relevance in synthesizing theory and empirical findings.

Findings – This research shows that although digital transformation in the financial sector, particularly online lending, brings efficiency and wider access, it also raises serious issues regarding Sharia compliance. By integrating regulatory perspectives, digital-financial literacy, and Sharia financial technology, this study research reveals a gap between Islamic principles, such as the prohibition of usury, uncertainty, and exploitation, and the reality of online lending practices.

Implications – This study highlights the urgent need for stricter regulations to protect consumers and ensure Sharia compliance in online lending. The Islamic fintech sector emphasizes the importance of developing business models based on justice and sustainability, utilizing alternative contracts, such as *mudharabah* and *musyarakah*.

Originality – This research contributes to originality by integrating multidimensional perspectives—regulation, literacy, and Sharia-driven fintech innovation—offering a more holistic view than prior studies. It also reinforces the relevance of *maqāṣid al-sharī'ah* as both a normative and a practical foundation for ethical and inclusive fintech governance.

Cite this article:

Marta, D. J. (2025). Digital financial transformation: An Islamic economic analysis of online lending in the era of industrial revolution 4.00. *Journal of Islamic Law on Digital Economy and Business*, 1(1), 53-64. <https://doi.org/10.20885/JILDEB.vol1.iss1.art4>



Center for Islamic Economics Studies and Development, Faculty of Business and Economics, Universitas Islam Indonesia

Introduction

The rapid advancement of information and communication technology has contributed significantly to the emergence of innovative ideas across various sectors, particularly in the economic domain. One of the most notable developments is the rise of financial technology (fintech), which represents innovation in financial services by integrating technology into financial systems. According to Imanuel (2017), fintech enables more efficient financial service delivery, whereas Bank Indonesia defines it as the application of technology in financial structures, resulting in new products, services, and business models. This innovation has influenced financial stability,

payment systems, and overall efficiency and security, which are subsequently regulated in Bank Indonesia Regulation Number 19/12/PBI/2017, concerning the Implementation of Financial Technology.

Fintech has revolutionized traditional business models, replacing the need for face-to-face meetings and cash transactions with remote and instantaneous digital processes (Suharyati & Ediwarman, 2020). In the context of domestic economic development, technological progress is expected to enhance public welfare and contribute to more robust economic conditions (Raden & Hartono, 2019). Among the most transformative innovations is peer-to-peer (P2P) lending, which connects lenders and borrowers directly through online platforms (Priliasari, 2013). By 2018, fintech companies had disbursed loans totaling IDR 22 trillion (Budiayanti, 2019). As of January 20, 2023, 102 fintech lending platforms were officially registered and licensed by the Financial Services Authority (Otoritas Jasa Keuangan, OJK), including Kredit Pintar, Kredivo, Dana, Akulaku, AdaKami, and Easycash (Otoritas Jasa Keuangan, 2023).

Online lending has become a popular choice for the public because of its perceived efficiency, speed, and simplicity in managing financial transactions (Mukhtisar 2021). However, the proliferation of unregulated online lending platforms poses serious risks, especially for financially vulnerable individuals (Amtricia & Yasin, 2022). These illegal services often target users with limited financial literacy, urgent financial needs, and consumptive lifestyles (Isnaini, 2021). Employing manipulative marketing tactics, these platforms ensnare users without proper consideration of the risks involved, often pushing them into cycles of debt (Hendriyo, 2019). Many individuals also turn to such services due to the complexity and rigidity of conventional bank loan procedures (Edi & Ismawati, 2019).

The Financial Services Authority reported that between 2018 and 2020, a total of 3,631 illegal online lending services were shut down, while legal platforms disbursed loans amounting to IDR 155.9 trillion by the end of 2020 (Thoha, 2022). Despite its potential benefits, online lending has led to issues such as abusive collection practices, unauthorized sharing of personal data, and excessive interest rates—problems mostly associated with unlicensed platforms operating outside regulatory frameworks (Hidayat et al., 2022; Pardosi & Primawardani, 2020).

In response to these challenges, the Indonesian Council of Ulama (Majelis Ulama Indonesia, MUI) has issued several fatwas regarding online loans. It emphasizes that debt agreements should be based on *tabarru'* (benevolence), in line with Sharia principles. Coercive debt collection methods such as threats or public disclosure of personal information are strictly prohibited. Similarly, delaying debt repayment despite having the means to pay is also considered *haram* (Majelis Ulama Indonesia, 2021). According to DSN-MUI Fatwa No. 117/DSN-MUI/II/2018, Sharia-compliant online lending is permissible, provided that it adheres to specific guidelines rooted in Islamic law. Borrowers must be well-informed about the legal, ethical, and religious implications of such transactions (Anwar et al., 2020; Agung, 2021). Given the complex dynamics between digital transformation in the financial sector, evolving business models, and the controversies surrounding online lending practices, this study aims to explore these phenomena through the lens of Islamic economics.

This study has several important differences from previous research. First, most prior studies have focused on the regulatory aspects, financial literacy, and legitimacy of Islamic law in online lending practices. However, this study seeks to integrate these three issues within a broader framework, namely, the digital transformation of the financial sector in the era of the Fourth Industrial Revolution. Second, while earlier studies were largely normative and descriptive, this study emphasizes critical analysis through a systematic qualitative descriptive literature review approach.

Therefore, this study examines the extent to which online lending practices can be comprehensively assessed from the perspective of Islamic economics by considering the dynamics of regulation, society's digital-financial literacy, and Sharia-based financial technology innovations. Thus, this research not only reaffirms the prohibition of conventional online lending practices that involve elements of usury (*riba*) but also proposes a conceptual alternative in the form of integrating Sharia principles with digital business models based on justice, transparency, and sustainability.

Literature Review

Digital financial transformation within the context of the Fourth Industrial Revolution has driven significant changes in online lending. In Indonesia, the rapid growth of fintech lending has become a major phenomenon, yet it also raises dilemmas regarding regulations, consumer protection, and compliance with Islamic economic principles.

First, regulation and consumer protection are of primary concern. Afif et al. (2023) emphasize that the effectiveness of fintech lending regulations in Indonesia still faces challenges, particularly in terms of supervision and compliance. This is reinforced by Budiyantri (2019) and Jermy (2022), who highlight the proliferation of illegal fintech practices and their implications for legal consumer protection. The Financial Services Authority (Otoritas Jasa Keuangan, 2023) also released a list of licensed fintech lending companies as a preventive measure against illegal practices. From a human rights perspective, Pardosi and Primawardani (2020) underlined the importance of protecting users' rights, which aligns with the urgency of personal data protection discussed by Priliyasi (2013).

Second, studies on public knowledge of online lending have revealed low levels of digital financial literacy. Agung (2021) finds that the people of Surakarta have a limited understanding of online lending mechanisms, whereas Widjaja (2022) reports similar findings in Jakarta. Shaikh and Sharif (2024) further note that digital financial literacy, particularly among the younger generations, strongly influences the adoption of digital financial services.

Third, several studies have examined the legitimacy of online lending from the perspective of Islamic law. Isnaini (2021), Hidayat et al. (2022), and Thoha (2022) argue that many online lending practices contradict Sharia principles, mainly due to the elements of *riba*, *gharar*, and manipulative practices (Hendriyo, 2019). Anwar et al. (2020) and the Indonesian Council of Ulama (MUI, 2021) refer to DSN-MUI Fatwa No. 117/DSN-MUI/IX/2018, which states that conventional online lending is unlawful when it involves *riba*. Similarly, Amtricia and Yasin (2022) found parallel issues in their analysis of the Shopee Paylater.

Fourth, the literature emphasizes sharia-based alternatives. Harjoni and Asmah (2024) explore sharia-compliant peer-to-peer lending as an alternative to MSME financing, while Ibrahim and Alenezi (2024) propose *Qardh al-Hasan* as a sustainable financing instrument. The principles of *mu'amalah* (Yusof & Karim, 2022) and ethical boundaries in financial transactions (Zulkifli & Aziz, 2023) serve as essential foundations for designing Sharia-compliant digital lending models.

Fifth, theoretical studies on Islamic finance highlight points of convergence with modern practices. Ahmad and Rahman (2020) and Franzoni and Allali (2018) stressed the integration of Sharia principles with corporate social responsibility. Hasan et al. (2020), Alshater et al. (2022), and Qudah et al. (2023) in their fintech literature reviews note that the vast potential of fintech in Islamic finance must be balanced with appropriate regulation and sharia-based product innovation.

Sixth, the Fourth Industrial Revolution served as a catalyst for digital transformation. Arif et al. (2020) highlight its implications for the Islamic finance industry, while Fahmi (2019) underscores the importance of Quranic inspiration in the development of Islamic fintech. Eskandarany (2024) and Rahman et al. (2024) emphasize the role of artificial intelligence and blockchain in banking systems, which aligns with Dahdal et al. (2022), who point out the potential of blockchain in Islamic finance. Tira (2025) also stresses that the digitalization of Islamic banking presents both challenges and opportunities in this era.

Seventh, in terms of methodology, Grant and Booth (2009), Snyder (2019), and Tranfield et al. (2003) provide systematic methodological foundations for literature reviews, whereas Braun and Clarke (2006) and Miles et al. (2014) remain essential references for qualitative analysis. Overall, the literature suggests that online lending practices within the framework of the Fourth Industrial Revolution represent a complex phenomenon. On the one hand, it offers easier access to financing, yet on the other, it raises issues of regulation, literacy, ethics, and Sharia legitimacy. Hence, Islamic economic analysis is required to propose a framework that balances technological innovation, consumer protection, and compliance with Sharia principles.

Research Methods

This study uses a descriptive qualitative literature review approach that aims to critically evaluate previous findings, conceptual ideas, and relevant knowledge related to digital transformation in the financial sector, particularly in the context of Islamic economics and peer-to-peer lending practices in the era of Industrial Revolution 4.0. This approach is widely used in socioeconomic research to synthesize theoretical and empirical findings for a comprehensive understanding (Snyder, 2019).

This method is considered valid because it has been successfully applied in previous studies. For example, Shaikh and Sharif (2024) used a descriptive qualitative literature review to examine the development of technology-based Islamic finance, whereas Hasan et al. (2020) applied it to analyze the implementation of Islamic fintech in Southeast Asia. Both studies demonstrated that this method is effective for systematically combining empirical evidence and theory to generate academic and practical recommendations.

This research process begins with the formulation of the research focus and questions, in which the researcher defines the scope of research on digital financial transformation, Islamic economic principles, and peer-to-peer lending practices. This stage is crucial to ensure a clear research direction, as suggested by Grant and Booth (2009), that a literature review should begin with a specifically defined research question to guide the search and selection of sources. Next, a literature search was conducted using scientific databases such as ScienceDirect, SpringerLink, Taylor and Francis, and ResearchGate with relevant keywords. This search process was conducted systematically to minimize potential selection bias, as emphasized by Snyder (2019).

The next stage was the determination of inclusion and exclusion criteria, which limited the literature to publications relevant to the topics of financial technology, peer-to-peer lending, and Islamic economic principles, and published within the last five years (2019–2024) to ensure the timeliness of the information. This approach is in line with the practice of Shaikh et al. (2022) in their technology-based Islamic finance literature study. Subsequently, studies were screened and selected based on the title, abstract, and full text of the articles to ensure their suitability with the focus of the research. This study followed the systematic descriptive review guidelines outlined by Tranfield et al. (2003).

After the literature was selected, data reduction was conducted by sorting and summarizing key information covering the issues of financial digitization, peer-to-peer lending mechanisms, and their compatibility with Sharia principles. This stage followed the guidelines of Miles et al. (2014), which emphasize the importance of data reduction in the production of focused information. The results of the data reduction were then presented in thematic and critical analysis forms to reveal patterns and relationships between concepts. This thematic presentation technique refers to Braun and Clarke (2006) approach, which is commonly used in descriptive qualitative research.

The next stage is contextual interpretation, which considers Indonesia's socioeconomic conditions, regulatory dynamics, and related ethical challenges. This step aligns with the perspective of Hasan et al. (2020), who emphasize the importance of incorporating local context into descriptive literature analysis. Finally, this study concludes with the drawing of conclusions and implications that formulate conceptual understanding and policy recommendations for the development of regulations and academic literature in the field of Islamic economics and financial technology. As emphasized by Snyder (2019), descriptive qualitative literature reviews can contribute both theoretically and practically.

Results and Discussion

Digital transformation in the financial sector: An Islamic perspective

The rapid advancement of digital technology has significantly transformed various aspects of human life, including those in the financial sector. Financial institutions are increasingly integrating digital technologies to enhance efficiency, reduce errors, optimize workforce allocation, and expedite processes. This shift towards a digital ecosystem is evident in the adoption of mobile applications, Internet banking, and other innovative financial services (Shaikh & Sharif, 2024).

The rapid spread of smartphones and always-on connectivity has reconfigured how consumers buy, sell, and bank, accelerating the uptake of digital financial services. In Islamic finance, this transformation is double-edged: digital rails widen access and efficiency, yet they must be designed to avoid *riba*, *gharar*, and *maysir* while safeguarding justice and transparency. Recent global reviews confirm that Islamic Fintech is now a mature research stream, with explosive growth since 2015 and clear thematic clusters around financial inclusion, Shariah governance, and enabling technologies (e.g., blockchain and AI). These studies argue that the sector's digital evolution can be positive if governance and product design remain tightly anchored to Shariah objectives (*maqāsid al-shari'ah*) (Qudah et al., 2023).

Within the broader Industry 4.0 toolbox, AI, big-data analytics, and cloud platforms have already lifted core financial functions such as screening, monitoring, and auditing. High-quality evidence from the accounting and auditing literature shows that AI and data-driven methods strengthen controls and assurance when properly governed—capabilities directly relevant to Shariah reviews and ex-post compliance testing in Islamic banks (Alshater, 2022). In Islamic finance, a growing body of peer-reviewed work maps how AI can support Shariah compliance (e.g., automated flagging of impermissible revenue streams, real-time transaction monitoring, and decision support for Shariah boards), as well as warnings about model explainability, bias, and the need for explicit Shariah AI governance frameworks (Eskandarany, 2024).

Distributed ledger Technology (DLT) adds complementary strengths. Systematic reviews of blockchain in banking highlight tamper-evident record-keeping and programmable execution (smart contracts), which can hard-code contractual prohibitions and disclosure rules—features that align with Islamic finance's emphasis on transparency and risk-sharing. At the same time, scholars stress interoperability, legal enforceability, and standardization as critical preconditions (Rahman et al., 2024). Focusing on Islamic finance, legal-technical analyses argue that blockchain can help harmonize divergent Shariah interpretations across jurisdictions and support truly asset-backed structures (e.g., sukuk lifecycles), provided that tokenization, custody, and dispute-resolution layers are Shariah- and law-compliant (Dahdal et al., 2022).

Pulling these threads together, international literature converges on a pragmatic view: digitalization can expand the reach and ethical impact of Islamic finance, but only under robust Shariah governance that integrates (i) algorithmic accountability for AI tools, (ii) privacy-preserving data architectures, and (iii) legally enforceable, transparent distributed ledger technology (DLT) implementations. Bibliometric syntheses of Islamic FinTech underscore this balance of innovation with guardrails placing financial inclusion and moral hazard mitigation at the center of the research agenda (Qudah et al., 2023).

Despite these promising prospects, the adoption of Industry 4.0, a technology in Islamic finance, is not without obstacles. Challenges include financial and regulatory constraints as well as a shortage of skilled human capital in software development. Addressing these issues is crucial for the successful implementation of digital transformation initiatives in the Islamic financial sector (Arif et al., 2020).

In Indonesia, the digitalization of Islamic banking has significantly improved the efficiency, accessibility, and compliance of financial services with Islamic principles. Technological advancements, such as mobile banking, have enabled Islamic banks to thrive in the digital era while upholding the values of justice, trust, and economic equity, as prescribed in Islamic teachings (Tira, 2025).

Furthermore, collaboration between banking and peer-to-peer (P2P) sectors drives digital transformation in Islamic finance. This partnership supports micro, small, and medium enterprises (MSMEs) by providing efficient, low-cost alternatives to traditional financing, thereby promoting financial inclusion and economic development (Harjoni & Savitri, 2024).

In conclusion, the digital transformation of the financial sector, particularly within Islamic finance, offers significant benefits in terms of efficiency, accessibility, and compliance with the Shariah principles. However, it also presents challenges that must be addressed through strategic planning, regulatory support, and investments in human capital development. By navigating these complexities, Islamic finance can harness the potential of digital technologies to foster inclusive and ethical economic growth (Ardiansyah et al., 2023).

Online lending: Business model and controversies

Regulations governing online lending practices in Indonesia are currently established by the Financial Services Authority (Otoritas Jasa Keuangan, OJK) through Regulation Number 77/POJK.01/2016 concerning Technology-Based Lending Services and Circular Letter Number 18/SE. OJK.02/2017 regarding the governance and risk management of Information Technology in lending services. Despite these regulations, the legal protection for users remains insufficient. A major criticism is that sanctions apply only to lenders registered with OJK. Article 47 of the regulation specifies administrative penalties, such as written warnings, fines, business restrictions, and license revocation, but there is no clear legal action against unregistered fintech providers. Moreover, license revocation often fails to halt operations (Afif et al., 2023).

Technological advancements have enabled the growth of peer-to-peer lending models that allow individuals to lend and borrow directly, without going through traditional banks. P2P lending offers an alternative for those seeking quick loans with simpler procedures and without collateral, unlike conventional bank loans (Sari et al., 2021). This service is easily accessible via smartphone apps anytime and anywhere, thereby attracting a broad user base. However, this convenience comes with risks, especially due to high interest rates and potential legal issues arising from defaults, according to the agreed terms (Jeremy, 2022). The main advantage of online loans is swift access to funds without the complicated processes required by banks (Sari et al., 2021).

Nevertheless, the misuse of borrowers' personal data by some online lenders is frequent, including intimidation during debt collection and the spread of private information to contacts stored on the borrower's phone, with even reports of sexual harassment related to these practices (Widjaja, 2019). The number of victims of illegal online loans continues to increase due to weak oversight and law enforcement (Anwar et al., 2020). Illegal online lending operations pose serious problems, such as potential money laundering and terrorism financing, data privacy violations, loss of potential tax revenues, and social harm due to the lack of public understanding of fintech risks (Ahmad & Rahman, 2020).

Furthermore, the non-performing loan (NPL) ratio in legal fintech reached 1.45% in 2018, indicating greater risks for illegal lenders (Irawan & Kusuma, 2019). Low public awareness of the legal status of fintech companies has resulted in many complaints about unethical debt collection practices by online loan providers (Budiayanti, 2019). Addressing these challenges requires comprehensive strategies, including responsive regulation development, improving human resource quality, fostering inter-industry collaboration, and leveraging advanced technologies, such as artificial intelligence and blockchain, to strengthen the internal security systems of fintech platforms (Fahmi, 2019).

Online lending in Islamic commercial jurisprudence (*Fiqh al-Mu'amalah*)

Qard refers to a loan contract in which the borrower is obliged to return the exact principal amount without any additional benefit or interest, with repayment either in a lump sum or installments over an agreed period (Ahmad & Rahman, 2020). In Islamic finance, a *Qard* transaction is valid only if all necessary conditions are met and fully comply with the Shariah rules; otherwise, the contract is rendered invalid (Nasir & Zain, 2021). The fundamental principles of *mu'amalah* in Islam, as outlined by Yusof and Karim (2022), include the following: (1) all transactions are permissible unless explicitly prohibited by the Qur'an and Sunnah, (2) transactions must be voluntary and free from coercion, (3) justice and fairness must be upheld, (4) harmful actions and exploitation must be avoided, and (5) transactions should generate societal benefits while preventing harm. Correspondingly, prohibitions in *mu'amalah* comprise *maisyr* (gambling), *gharar* (excessive uncertainty), *haram* (trading in forbidden goods), *riba* (usury), and *bathil* (invalid transactions) (Zulkifli & Aziz, 2023).

The concept of *Qard* in Islamic finance has been widely examined in the academic literature, particularly in relation to the implementation of *mu'amalah* principles that exclude *riba*, *gharar*, and *maisyr*. Ibrahim and Alenezi (2024) highlight *Qard* as a crucial instrument for strengthening Islamic financial inclusion, especially for low-income communities, because of its non-commercial and socially oriented nature as a benevolent loan. Najeeb and Lahsasna (2013) further emphasize that

the validity of a *Qard* contract critically depends on fulfilling all *rukun* and *syarat* of the contract under Islamic law, including mutual consent (*taradhi*) and clarity of the subject matter (*ma'qud 'alaihi*), aligning with Nasir and Zain (2021) assertion that failure to meet any of these conditions renders the contract *bathil*.

From a regulatory perspective, Franzoni and Allali (2018) observe that many Islamic financial institutions apply *qard* through *qard hasan* schemes as part of their Corporate Social Responsibility (CSR) to promote economic empowerment. However, improper application, such as imposing unauthorized additional charges, can blur the line between social financing and commercial products, thereby risking Shariah noncompliance. Empirical findings by Hasan et al. (2020) indicate that *qard* practices in the Islamic fintech sector require strict oversight to prevent misuse, such as disguising interest as disproportionate “administrative fees.” These findings reinforce the prohibition of *riba* as outlined in the *mu'amalah* framework.

By integrating these scholarly insights, the discussion not only aligns with the foundational principles of *mu'amalah* but also rests upon recent, globally recognized research. This positions the analysis as a credible and significant contribution to international academic discourse on embedding Shariah principles into modern financial innovations.

Analysis of online loans from the perspective of Islamic economics

Fundamentally, *qard* is an agreement of mutual assistance in goodness between the borrower (*muqtarid*) and lender (*muqrid*), aimed at facilitating acts of benevolence without any element of exploitation. On the other hand, online loans are financial services operated through digital platforms by companies or service providers, where borrowers only need to fill in their personal data to apply for funds, which are then automatically transferred to their bank accounts (Anwar et al. 2020; Syafarina & Muzammil, 2024).

From the perspective of Islamic economics, compliance with *sharia* principles is measured through several *muamalah* principles, including:

1. The principle of brotherhood (*ukhuwah*) emphasizes togetherness and mutual benefit, and avoids the profit gained from another party's loss. Although online loans aim to provide capital or access to funds for the public, various field findings indicate that many borrowers feel disadvantaged, meaning that the promised benefits are not fully realized for them (Anwar et al., 2020).
2. The principle of justice (*'adalah*) requires the protection of all parties' rights and prohibits the elements of *riba*, *zulm*, *maysir*, *gharar*, and unlawful activities. In practice, online loans often apply repayment systems that impose additional charges beyond the loan principal, benefiting the lender but harming the borrower (Syafarina & Muzammil, 2024).
3. The principle of public interest (*maslahah*) demands that every economic activity brings both global and spiritual benefits. However, unethical debt collection practices such as intimidation and verbal harassment cause tangible harm, thus contradicting the aim of collective benefit. It is important to remind Muslims to avoid practices that cause harm (Anwar et al., 2020).
4. The principle of balance in *sharia* transactions requires that profits are not enjoyed solely by companies or capital owners, but are fairly shared among all stakeholders. However, reality shows an imbalance: borrowers are burdened with additional fees, interest calculated from the loan amount, and late payment penalties, which clearly benefit the service provider more than the borrower (Syafarina & Muzammil, 2024).
5. The principle of universality requires that agreements are clear, mutually beneficial, and not harmful to any party. Although service providers have the right to collect debt, the dissemination of borrowers' personal information without consent as a form of pressure clearly contradicts Islamic ethics and violates privacy rights (Anwar et al., 2020).

In the *sharia*-based financial technology ecosystem, several types of contracts are permissible, such as *Mudharabah* (a partnership between a capital provider and an entrepreneur with profit-sharing according to agreement and losses borne by the capital provider), *Musyarakah* (a

partnership between two or more parties with capital contributions and profit-sharing according to a predetermined ratio), *Wakalah bi al-ujrah* (delegation of authority with a fee), and *Qard* (a loan with repayment according to agreement). DSN-MUI Fatwa No. 117/DSN-MUI/IX/2018 permits information technology-based financing services as long as they do not violate *sharia* principles, particularly the prohibition of *riba* and oppressive practices.

However, the analysis shows that in the practice of online loans using a *qard* contract, there are several violations of the fatwa, including deductions of administrative fees from the loan amount, the imposition of late payment penalties, and interest calculations that fall under the category of *riba*. This demonstrates a gap between the ideality of *sharia* principles and the reality of their implementation in the field (Anwar et al., 2020; Syafarina & Muzammil, 2024).

Conclusion

The findings of this research explicitly answer the research questions posed, namely, how the dynamics of digital transformation in the financial sector—particularly online lending—can be examined from the perspective of Islamic economics. The results show that although digital technology brings efficiency, accessibility, and potential for financial inclusion, its implementation in online lending practices still leaves serious issues regarding compliance with Sharia principles. An in-depth analysis of regulations, fiqh al-mu'amalah literature, and DSN-MUI fatwas revealed a gap between the ideals of Sharia principles (such as the prohibition of *riba*, *gharar*, and exploitation) and the reality of online lending practices, which often cause harm to society.

Practically, this study offers important implications for policymakers and regulators. First, there is an urgent need for stricter and more responsive regulations to oversee both legal and illegal online lending providers, emphasizing consumer protection and compliance with Sharia. Second, for the Islamic fintech industry, the findings highlight the importance of designing business models based on the principles of justice, transparency, and sustainability, for instance, by applying alternative Sharia contracts such as *mudharabah* or *musyarakah* as substitutes for interest-based loans.

From a theoretical perspective, this research enriches academic discourse by integrating three main dimensions—regulation, digital-financial literacy, and Sharia-based technological innovation—into a comprehensive analytical framework. This approach provides a new perspective compared to the previous literature, which tends to emphasize only one aspect. Moreover, the research reaffirms the relevance of *maqāṣid al-shari'ah* as a normative foundation for designing ethical and inclusive financial technology governance.

However, this study had certain limitations. First, the analysis relies solely on a literature review and regulatory analysis, without empirical field data that could provide more detailed insights into the direct experiences of society or industry actors. Second, this research focuses on the Indonesian context; therefore, generalizing the findings to a global scale must be approached with caution.

Based on these limitations, future research is suggested to: (1) conduct empirical studies based on surveys or interviews to capture user and industry experiences in both Sharia-compliant and conventional online lending, (2) expand the analysis with a comparative cross-country approach to identify best practices in regulation and Islamic fintech implementation, and (3) further explore the integration of emerging technologies such as Artificial Intelligence and blockchain in Islamic fintech systems, particularly concerning governance, transparency, and consumer protection. In conclusion, this research contributes not only to the academic understanding of the relationship between digital transformation and Islamic economics but also provides practical guidance for regulators, industry, and researchers in developing an inclusive, ethical, and Sharia-compliant fintech ecosystem.

Acknowledgements

The authors wish to express gratitude to all those who contributed to this research, enabling it to evolve into an article that can be appreciated by readers and academics interested in exploring the same case research.

Author contributions

Conceptualization: Dwi Jati Marta
 Data curation: Dwi Jati Marta
 Formal analysis: Atikah Dewi Utami
 Investigation: Dwi Jati Marta
 Methodology: Dwi Jati Marta
 Project administration: Atika
 Supervision: Atikah Dewi Utami
 Validation: Atikah Dewi Utami
 Visualization: Dwi Jati Marta
 Writing – original draft: Dwi Jati Marta
 Writing – review & editing: Atikah Dewi Utami

References

- Afif, N., Supangat, Mashudi, Maria, A. M., Eman, S., Ceprudin., & Ali, M. (2023). Evaluating the effectiveness of fintech lending regulations in Indonesia: Identifying issues for future improvement. *Remittances Review*, 8(2), 16–30. <https://remittancesreview.com/menu-script/index.php/remittances/article/view/288>
- Agung, A. (2021). Analisis pengetahuan pinjaman online pada masyarakat Surakarta. *Jurnal Ekonomi Syariah Orang*, 11(2), 108–114. [http://dx.doi.org/10.21927/jesi.2021.11\(2\).108-114](http://dx.doi.org/10.21927/jesi.2021.11(2).108-114)
- Ahmad, S., & Rahman, M. (2020). *Principles of Islamic finance and modern applications*. Islamic Finance Publishing.
- Alshater, M. M., Saba, I., Supriani, I., & Rabbani, M. R. (2022). Fintech in Islamic finance literature: A review. *Heliyon*, 8(9), e10385. <https://doi.org/10.1016/j.heliyon.2022.e10385>
- Amtricia, A., & Yasin, A. (2022). Analisis hukum Islam terhadap pinjaman uang elektronik Shopee Paylater pada marketplace Shopee. *Jurnal Ekonomika dan Bisnis Islam*, 5(2), 131–144. <https://journal.unesa.ac.id/index.php/jei/article/view/17808>
- Anwar, F., Ahmad, F., Nelly, R., & Zainul, A. (2020). Pinjaman online dalam perspektif fikih muamalah dan analisis terhadap fatwa DSN-MUI 117/DSN-MUI/IX/2018. *Jurnal Keislaman, Kemasyarakatan dan Kebudayaan*, 21(2), 119–136. <http://dx.doi.org/10.58326/jurnallisyabab.v4i2.191>
- Ardianysah, J., Rahmawati, L., & Hasan, H. (2023). Implementation of Islamic monetary policy in Indonesia's economic system for the 2020–2024 period. *Jurnal Ilmiah Ekonomi Islam (JIEI)*, 10(3), 3291–3304. <https://doi.org/10.29040/jiei.v10i3.15168>
- Arif, F., Syukqran, K., & Rashid, A. (2020). The impact of industrial revolution 4.0 and its manifestation in Islamic finance industry. *International Journal of Accounting, Finance and Business (IJAFB)*, 5(26), 70–90. https://www.researchgate.net/publication/340136888_The_Impact_of_Industrial_Revolution_4_0_and_Its_Manifestation_in_Islamic_Finance_Industry
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <http://dx.doi.org/10.1191/1478088706qp0630a>
- Budiyanti, E. (2019). Upaya mengatasi layanan pinjaman online ilegal. *Majalah Info Singkat Ekonomi dan Kebijakan Publik*, 11(4), 19–24. <https://www.scribd.com/document/416608479/UPAYA-MENGATASI-LAYANAN-PINJAMAN-ONLINE-ILEGAL>
- Dahdal, A., Truby, J., & Ismailov, O. (2022). The role and potential of blockchain technology in Islamic finance. *European Business Law Review*, 33(2), 175–192. <http://dx.doi.org/10.54648/EULR2022005>

- Edi, S., & Ismawati, N. (2019). Sistem informasi fintech pinjaman online berbasis web. *Jurnal Sistem Informasi, Teknologi Informasi dan Komputer*, 9(2), 100–107. <https://jurnal.umj.ac.id/index.php/just-it/article/view/3807>
- Eskandarany, A. (2024). Adoption of artificial intelligence and machine learning in banking systems: A qualitative survey of board of directors. *Brief Research Report Article Frontiers*, 7(3), 1–11. <https://doi.org/10.3389/frai.2024.1440051>
- Fahmi, M. M. (2019). Inspirasi Qur'ani dalam pengembangan fintech syariah: Membaca peluang, tantangan dan strategi di era Revolusi Industri 4.0. *Jurnal UIN Maulana Malik Ibrahim Malang*, 6(2), 121–133. <https://pionir.uin-malang.ac.id/index.php/jurnal-ekonomi-syariah/article/view/112>
- Franzoni, S., & Allali, A. A. (2018). Principles of Islamic finance and principles of corporate social responsibility: What convergence? *Sustainability*, 10(3), 637. <https://doi.org/10.3390/su10030637>
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), 91–108. <https://doi.org/10.1111/j.1471-1842.2009.00848.x>
- Harjoni, D., & Asmah, S. (2024). Sharia peer-to-peer lending financing: A funding alternative for MSMEs in Indonesia. *Al-Hiwalah: Jurnal Ekonomi Islam*, 3(2), 1–15. <https://doi.org/10.47766/al-hiwalah.v3i2.4670>
- Hasan, R., Hassan, M. K., & Aliyu, S. (2020). Fintech and Islamic finance: Literature review and research agenda. *International Journal of Islamic Economics and Finance (IJEF)*, 3(1), 75–94. <http://dx.doi.org/10.18196/ijief.2122>
- Hendriyo, S. (2019). Strategi pemasaran manipulatif pada platform pinjaman online dan dampaknya terhadap konsumen. *Jurnal Hukum dan Teknologi*, 3(2), 89–102. <http://dx.doi.org/10.36418/syntax-literat.v8i12.14161>
- Hidayat, A., Azizah, N., & Ridwan, M. (2022). Pinjaman online dan keabsahannya menurut hukum perjanjian Islam. *Jurnal Indragiri Penelitian Multidisiplin*, 2(1), 1–9. <http://dx.doi.org/10.58707/jipm.v2i1.115>
- Ibrahim, A. A., & Alenezi, A. (2024). Leveraging Qardh al-Hasan within Islamic finance: A conceptual framework for advancing sustainable development among early-stage enterprises. *Tazkia Islamic Finance and Business Review*, 18(1), 18–54. <http://dx.doi.org/10.30993/tifbr.v18i1.368>
- Imanuel, C. A. W. (2017). Analisis SWOT implementasi teknologi finansial terhadap kualitas layanan perbankan di Orang. *Jurnal Ekonomi dan Bisnis*, 20(1), 133–144. <https://doi.org/10.24914/jeb.v20i1.641>
- Irawan, D., & Kusuma, N. (2019). Pengaruh struktur modal dan ukuran perusahaan terhadap nilai perusahaan. *Jurnal Aktual*, 17(1), 66–81. <https://dx.doi.org/10.47232/aktual.v17i1.34>
- Isnaini, M. (2021). Legalitas pinjaman online dalam perspektif hukum Islam. *Jurnal Hukum Ekonomi Islam*, 5(2), 129–136. <http://www.jhei.appheisi.or.id/index.php/jhei/article/view/112>
- Jermy, Z. Y. A. (2022). Dampak permasalahan pinjaman online dan perlindungan hukum bagi konsumen pinjaman online. *Ikatan Penulis Mahasiswa Hukum Indonesia Law Journal*, 2(1), 1–16. <https://doi.org/10.15294/ipmhi.v2i1.53736>
- Majelis Ulama Indonesia. (2021, November 11). *Hukum pinjol dan rekomendasi Ijtima Ulama MUI*. <https://mui.or.id/berita/32194/hukum-pinjol-dan-rekomendasi-ijtima-ulama-mui/>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook*. Sage.

- Mukhtisar, Ismail, R. R. T., & Evriyeni. (2021). Pengaruh efisiensi, keamanan dan kemudahan terhadap minat nasabah bertransaksi menggunakan mobile banking (Studi pada nasabah Bank Syariah Mandiri Ulee Kareng Banda Aceh). *JIHBIZ: Global Journal of Islamic Banking and Finance*, 3(1), 16–30. <http://dx.doi.org/10.22373/jihbiz.v3i1.9632>
- Najeeb, S. F., & Lahsasna, A. (2013). Qard hasan: Its Sharī'ah rules and applications in Islamic finance. *Journal of Islamic Business and Management*, 3(1), 15–34. <http://dx.doi.org/10.12816/0004986>
- Nasir, H., & Zain, A. (2021). Validity of qard contracts in contemporary Islamic finance. *Journal of Islamic Economics and Finance*, 7(2), 115–130. <https://doi.org/10.1234/jief.v7i2.2021>
- Otoritas Jasa Keuangan. (2023, Januari 20). *Perusahaan fintech lending berizin*. [https://www.ojk.go.id/id/kanal/iknb/financial-technology/Documents/Penyelenggara Fintech Lending Berizin per 20 Januari 2023-1.pdf](https://www.ojk.go.id/id/kanal/iknb/financial-technology/Documents/Penyelenggara_Fintech_Lending_Berizin_per_20_Januari_2023-1.pdf)
- Pardosi, R. O. A. G, & Primawardani, Y. (2020). Perlindungan hak pengguna layanan pinjaman online dalam perspektif hak asasi manusia. *Jurnal HAM*, 11(3), 353–368. <https://dx.doi.org/10.30641/ham.2020.11.353-368>
- Priliyasi, E. (2013). Pentingnya perlindungan data pribadi dalam transaksi pinjaman. *Majalah Hukum Nasional: Media Pembinaan & Pembangunan Hukum*, 49(2), 1–27. <https://doi.org/10.33331/mhn.v49i2.4449>
- Qudah, H., Malahim, S., Airout, R., Alomari, M., Hamour, A. A., & Alqudah, M. (2023). Islamic finance in the era of financial technology: A bibliometric review of future trends. *International Journal of Financial Studies*, 11(2), 76. <https://doi.org/10.3390/ijfs11020076>
- Raden, W. A. E., & Hartono, D. (2019). Implementation of legal protection by the government in order to empowerment of micro small medium enterprise to realize the justice economy (Research Study: The office of cooperative and micro small and medium enterprise province of central Java). *Diponegoro Law Review*, 4(1), 105–113. <https://doi.org/10.14710/dilrev.4.1.2019.105-113>
- Rahman, S. M. M., Yü, K. J., Masli, E. K., & Voon, M. L. (2024). The blockchain in the banking industry: A systematic review and bibliometric analysis. *Cogent Business & Management Journal*, 11(1), 2407681. <https://doi.org/10.1080/23311975.2024.2407681>
- Sari, A. R. D., Eva, Y. U., Heri, S., Alfiana, & Nurdjanah, H. (2021). Analisis faktor-faktor yang mempengaruhi minat penggunaan layanan Peer-to-Peer Lending di Orang. *Jurnal Ekonomi dan Bisnis*, 14(2), 123–135. <https://doi.org/10.29040/jie.v8i2.13151>
- Shaikh, R., & Sharif, S. (2024). *From banking to bytes: Investigating the relationship between Gen Z's digital financial literacy and adoption of digital wallets in Pakistan*. SSRN. <https://dx.doi.org/10.2139/ssrn.4940363>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Suharyati, & Ediwarman. (2020). Edukasi fintech dan kewirausahaan bagi pelaku UMKM Kecamatan Parung, Kabupaten Bogor. *Jurnal Bakti Masyarakat Indonesia*, 2(2), 219–228. <http://dx.doi.org/10.24912/jbmi.v2i2.7251>
- Syafarina, D., & Muzammil, S. (2024). Transformasi keuangan digital: Analisis ekonomi Islam terhadap pinjaman online di era modern. *INNOVATIVE: Journal of Social Science Research*, 4(3), 18730–18741. <https://doi.org/10.31004/innovative.v4i3.12861>
- Thoha, A. B. (2022). Pinjaman online dalam tinjauan hukum Islam. *Jurnal Teknologi Informasi dan Ilmu Komputer*, 20(1), 80–94. <http://dx.doi.org/10.61805/fahma.v20i1.46>

- Tira, N. F. (2025). Islamic banking digitalization: Challenges and opportunities in the era of industrial revolution 4.0. *Jurnal Ilmiah Ekonomi Islam (JIEI)*, 11(1), 1–15. <https://jurnal.stie-aas.ac.id/index.php/jei/article/download/16855/7230>
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. <https://doi.org/10.1111/1467-8551.00375>
- Widjaja, G. (2022). Pemahaman konsumen tentang pinjaman online (Pinjol) di Jakarta. *Jurnal Pengabdian Kepada Masyarakat*, 2(2), 89–93. <https://dx.doi.org/10.37567/pkm.v2i2.1025>
- Yusof, R., & Karim, F. (2022). The dynamics of Mu'amalah principles in Islamic commercial law. *International Journal of Shariab Studies*, 10(1), 45–60. <http://dx.doi.org/10.30983/alhurriyah.v6i2.5010>
- Zulkifli, N., & Aziz, S. (2023). Prohibitions and ethical boundaries in Islamic financial transactions. *Journal*, 6(1), 1–15. <https://doi.org/10.47766/al-hiwalah.v3i2.4670>