

Integration of Biometric Technology in the Islamic Banking System: *Maqāṣid* Sharia Analysis and Contemporary Fatwa

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Article History: Received June 16, 2025; Received in revised from June 20, 2025; Accepted June 28, 2025; Published; July 9, 2025
How to Cite this Article: Fuad, Y. F., & Rohman, M. . (2025). Integration of Biometric Technology in the Islamic Banking System: <i>Maqāṣid</i> Sharia Analysis and Contemporary Fatwa. <i>Journal of Islamic Business and Economics</i> , 1(1), 14–26. https://doi.org/10.15642/jibec.2025.1.1.14-24

Abstract: The integration of biometric technology in Islamic banking has become a transformative force in enhancing identity verification, transaction security, and digital service efficiency. This study critically examines the application of biometrics—such as fingerprint, facial, and iris recognition—through the lens of *Maqāṣid al-Sharī‘ah*, emphasizing principles like the protection of property (*ḥifẓ al-māl*) and life (*ḥifẓ al-naḥs*), while also addressing ethical concerns surrounding privacy (*sirr*). Utilizing a qualitative, descriptive-analytical approach, the research analyzes official fatwas from recognized Islamic legal bodies (MUI, IIFA, AAOIFI), scholarly literature, and institutional policies to assess the shariah permissibility and ethical implications of biometric use in banking. The findings reveal a broad scholarly consensus that biometric technology is permissible (*mubāḥ*) when used with informed consent, for legitimate purposes, and under robust data protection standards. The study highlights a pressing need for contemporary fatwas and policy innovations that reflect the rapid evolution of digital technologies while safeguarding individual rights. Its key contribution lies in offering a *maqāṣid*-based evaluative framework that bridges Islamic legal theory and modern fintech ethics. This research paves the way for future empirical inquiries into user perceptions, regulatory readiness, and the comparative effectiveness of biometric authentication versus other digital tools in Islamic financial ecosystems.

Keywords: Biometric Authentication; *Maqāṣid* Sharī‘ah; Digital Privacy; Contemporary Fatwa

Introduction

The emergence of digital payment services has transformed conventional payment methods globally by offering considerable efficiencies in terms of cost, time, and convenience. Various terms such as digital payments, digital currency, e-money, online payment platforms, and mobile payments are now encompassed within a broader financial industry concept known as “Paytech” represents a specific branch of fintech that concentrates on payment systems and transaction processes.¹

Cybersecurity risks like hacking, fraud, and data leaking have escalated along with the growth in online transactions. Islamic banking must put robust security measures in place to mitigate these dangers, including multi-factor authentication, sophisticated encryption, and real-time fraud detection systems to safeguard client financial information.² To identify and prevent potential security breaches, regular cybersecurity audits are essential. For instance, Islamic banks can utilize biometric verification technologies such as fingerprint or facial recognition to enhance the security of financial transactions and account access, providing greater safety for their clients.

Biometric technology employs a person's distinct biological or behavioral traits for identification, validation, and authentication purposes. This technology utilizes everyone's unique physical or behavioral characteristics for security and recognition, including fingerprints, facial features, iris patterns, palm prints, ear shapes, voice patterns, and handwriting signatures. Applications for biometrics span numerous sectors including identity management, data security, payments and banking, and physical security systems.³

The development of digital technology has fundamentally changed how financial services are delivered to society, creating new opportunities for increasing financial inclusion. The non-bank financial sector, particularly financial technology (fintech), is emerging as an effective solution to overcome accessibility barriers, especially for populations previously unreached by conventional financial services.⁴ However, in the context of Islamic finance, it remains crucial to ensure that innovations within this sector operate within the framework of sharī'ah principles.

The principles of Maqāṣid Sharia *ḥifẓ al-din*, *ḥifẓ al-nafs*, *ḥifẓ al-aql*, *ḥifẓ al-nasl*, and *ḥifẓ al-māl* offer comprehensive guidance in developing sharia-based financial products. By emphasizing aspects of fairness, transparency, and benefits, sharī'ah fintech can create products that prioritize not only profits but also encourage the social and economic welfare of the broader community. This approach ensures that digital technology serves not merely as a tool for efficiency but also to realize sharī'ah values in modern life.⁵ In the context of Maqāṣid sharia, the use of biometrics can be viewed as an effort to protect property (*ḥifẓ al-māl*) and life (*ḥifẓ al-nafs*) through the prevention of fraud and identity

¹ Ana Irimia-Diéguez et al., “Predicting the Intention to Use Paytech Services by Islamic Banking Users,” *International Journal of Islamic and Middle Eastern Finance and Management* 17, no. 1 (January 16, 2024): 1–15, <https://doi.org/10.1108/IMEFM-07-2022-0298/FULL/PDF>.

² Tira Nur Fitria, “Islamic Banking Digitalization: Challenges and Opportunities in the Era of Industrial Revolution 4.0,” *Jurnal Ilmiah Ekonomi Islam* 11, no. 01 (2025), <https://doi.org/10.29040/JIEI.V11I1.16855>.

³ Muhamad Wildan Fawa et al., “Palm Payment System: Islamic Finance Perspective,” *Proceeding of International Conference on Islamic Economics, Islamic Banking, Zakah and Waqf*, September 25, 2023, 597–608, <https://doi.org/10.24090/IEIBZAWA.VIII.832>.

⁴ Achmad Syawal Nurhidayatullah and Oman Fathurohman SW, “Maqāṣid Syariah Sebagai Kerangka Kerja Untuk Inovasi Produk Keuangan Non Bank Dalam Era Digital,” *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah* 9, no. 5 (December 13, 2024), <https://doi.org/10.30651/JMS.V9I5.24835>.

⁵ Mahmoud A. El-Gama, *Islamic Finance: Law, Economics, and Practice*, *Islamic Finance: Law, Economics, and Practice* (Cambridge University Press, 2006), <https://doi.org/10.1017/CBO9780511753756>.

theft. Several scholars have emphasized the importance of caution to ensure this technology does not violate individual privacy rights and remains aligned with fundamental sharī'ah values. This consideration becomes increasingly relevant given the potential misuse of biometric data that can harm both customers and financial institutions.

Although various studies have addressed the technical features and advantages of biometrics in conventional banking, few have assessed their compliance with Islamic jurisprudence and ethical norms. A comprehensive examination of the legal implications of biometrics from a Sharī'ah perspective remains lacking. Therefore, this study aims to analyze the significance of fatwas and scholarly opinions regarding the use of biometric technology for identity verification in Islamic banking. It also seeks to highlight the ethical considerations, data security concerns, and the pressing need for contemporary fatwas to address the challenges of the digital age 1. This research is expected to significantly advance the development of Islamic banking regulations and procedures that are grounded in Islamic principles while remaining flexible enough to accommodate technological advancements.

Research Method

This study employs a qualitative descriptive-analytical research design to examine fatwas and the utilization of biometric technology in identity verification within Islamic banking from the perspective of Islamic law. The rationale for prioritizing fatwas from certain councils such as the Indonesian Ulama Council (MUI), the International Islamic Fiqh Academy (IIFA), and the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) is based on their recognized authority, global influence, and the practical impact of their rulings on Islamic banking operations. These councils are widely referenced by Islamic financial institutions and are considered benchmarks for sharī'ah compliance in both national and international contexts.

The research relies on purposive sampling to select relevant documents, including official fatwas issued by recognized Islamic legal bodies, academic literature, and policy documents from Islamic banks that specifically discuss biometric implementation. These sources serve as the primary data, while secondary data are obtained from scholarly articles, books, and reports that address the intersection of biometrics, digital finance, and Islamic jurisprudence.

Table 2. Source Classification for Data Collection

NO	Source Type	Example Institutions/Councils	Geographic Scope	Date Range	Notes on Selection Criteria
1.	Fatwas	MUI, IIFA, AAOIFI, DSN	Indonesia, Global	2010-2025	Recognized authority, practical impact
2.	Journal Articles	International journal	International	2020-2025	Peer-reviewed, relevant to biometrics /Islamic law

3.	Policy Documents	Bank Syariah Indonesia (BSI), Bank Muamalat	Indonesia, GCC	2020-2025	Directly address biometric implementation
4.	Books & Reports	Academic Publisher, OJK reports	Global	2010-2025	Authoritative, thematic relevance

Source: Self-constructed by the author based on data collected from official fatwas, academic journals, and policy documents.

Data collection is conducted through comprehensive literature review and document analysis, focusing on the most recent and relevant materials published within the last fifteen years. The research instrument consists of a structured document analysis protocol, which guides the extraction of key themes and arguments from the collected sources. Thematic content analysis is then applied to identify and categorize patterns in the legal reasoning of scholars, the ethical considerations raised, and the alignment of biometric practices with *Maqāṣid sharī'ah* principles, such as the protection of property (*hifẓ al-māl*) and life (*hifẓ al-nafs*).

Variable measurement in this study is qualitative, centering on the identification of recurring themes, legal principles, and ethical concerns related to biometrics in Islamic banking. The analysis process involves coding the data, grouping findings into thematic categories, and synthesizing the results to provide a comprehensive understanding of the opportunities and challenges posed by biometric technology from an Islamic legal perspective. The findings are then discussed in relation to contemporary needs for security, privacy, and sharī'ah compliance in digital financial services.

Results

Implementation of Biometrics in Islamic Banking

Biometric technology is increasingly popular in the banking sector to improve security, efficiency, and compliance with applicable regulations. The use of biometrics in this sector not only facilitates the customer verification process but also ensures that every transaction made is valid and in accordance with sharia principles. In the context of Islamic banking, the application of biometrics can be found at various stages, from Know Your Customer (KYC), account opening to transaction authentication⁶.

At the Know Your Customer (KYC) step, biometric technology is used to verify a customer's identity in a more accurate and secure way. One of the most used biometric technologies is face recognition. This technology allows banks to automatically match a customer's photo with the biometric data in their system. In addition, fingerprint recognition is also widely applied for identity verification. Fingerprints are unique biometric characteristics that are difficult to forge, thus providing high security assurance. On the other hand, more advanced Iris recognition technology can also be used to ensure the accuracy of

⁶ Harjoni Desky and Isra Maulina, "Digital Transformation in Islamic Banking," *International Journal of Multidisciplinary Research and Analysis* 05, no. 12 (December 30, 2022), <https://doi.org/10.47191/IJMRA/V5-I12-42>.

customer identification⁷.

In opening accounts, biometric technology plays an important role in speeding up the registration process and reducing the use of physical documents. For example, customers can take a selfie using the mobile banking app, which is then verified using face recognition technology to ensure that the person opening the account matches the registered identity.⁸ In addition, some banks also provide fingerprint scanning or voice authentication for the enrollment process. The application of biometrics in account opening is certainly very supportive of sharia principles, which prioritize convenience and transparency, and reduce dependence on physical documents that are vulnerable to manipulation.⁹

Furthermore, in terms of transaction authentication, biometrics serve to ensure that transactions made by customers are legitimate and conducted by authorized parties. Before a transaction is processed, the customer may be asked to authenticate through facial recognition or fingerprint scanning. This reduces the risk of fraud that may occur if the customer uses conventional authentication methods, such as PIN or password. In addition, voice biometrics have also become more widely used in some banks, especially in conducting certain transactions. The use of biometrics in transaction authentication in Islamic banking provides a guarantee that all transactions carried out remain safe and in accordance with applicable regulations.¹⁰

Based on the official Privacy Policy of PT Bank Syariah Indonesia Tbk (BSI), the implementation of the management of customer personal data, including biometric data, is carried out comprehensively and refers to national regulations and sharia prudential principles. BSI collects various types of customer personal data, one of which is biometric data such as fingerprints, voice recordings, and videos, which is used to support identity verification, transaction security, and digital service development. This data collection is carried out through various channels, either directly when customers make transactions on the BSI network (such as tellers, ATMs, internet banking, and mobile banking), or through communication with certain officers or features that require data access on the customer's device.¹¹

Table 1. Types of Biometrics, Key Benefits, Potential Risks, and Implementation at Bank Syariah Indonesia (BSI)

NO	Types of Biometrics	Key benefit	Potential Risks	Implementation at BSI
1.	Fingerprint	High Accuracy, Hard to Counterfeit	Potential data theft, misuse if leaked	Yes

⁷ Jen Robinson, "Secure 3: An Application of the Multiplication Approach for Enhancing Online Banking Security," *Journal of Innovations*, June 1, 2023, <https://doi.org/10.62470/5A244480>.

⁸ V Manju and S Madhumathi, "Improving Net Banking Security with Face Recognition Based Bio-Metric Verification," 2019, <https://doi.org/10.32628/CSEIT195335>.

⁹ N. Subbarao, S. M. Riyazoddin, and M Janga Reddy, "FPR a Secure and Secured Biometric in Web Banking-Survey," *Global Journal of Computer Science and Technology Graphics & Vision* 13, no. 7 (2013): 25–30.

¹⁰ Ajay Kumar Ganguly, Subhajit Bhattacharya, and Subrata Chattopadhyay, "A Design of Efficient Biometric Based Banking System Through AI-Powered Transaction Security Fintech System for Secure Transactions," *2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024*, 2024, 492–96, <https://doi.org/10.1109/ICACITE60783.2024.10617391>.

¹¹ BSI Bank Syariah Indonesia, "Kebijakan Privasi Pt Bank Syariah Indonesia Tbk," n.d., accessed June 22, 2025.

2.	Facial Recognition	Practical for mobile banking, fast process	Risk of spoofing (fake photos/videos), facial privacy issues	Yes
3.	Sound recordings	Support call center services, hands free	Risk of recordings being misused, noise	Yes

Source: Adapted from Hamadou et al., (2024) (accessed June 22, 2025)¹²

The entire process of processing, storing, and using personal data, including biometric data, is carried out in accordance with Law No. 27 of 2022 concerning Personal Data Protection, Law No. 21 of 2008 concerning Sharia Banking, as well as OJK and Bank Indonesia regulations. BSI emphasizes that the protection of customer data is a top priority, where data is encrypted and only used for legitimate purposes and with the explicit consent of the customer. Customers are also given important rights, such as the right to obtain information, update or delete data, withdraw consent, restrict processing, and object to automated processing with legal implications.

In terms of purposes, biometric data is used for various purposes, ranging from providing and developing products, processing transactions, verifying identity, to fulfilling legal provisions and requests from the competent authorities. BSI also ensures that any disclosure of data to third parties is only for the sake of service, law enforcement, or with the customer's consent, with the third party's obligation to maintain the confidentiality and security of the data.

The Scholar's View of Biometric Validity

The application of biometric technology in Islamic banking, especially for the process of verifying customer identity, authenticating transactions, and fulfilling provisions, has raised various opinions among scholars. In general, many scholars are of the opinion that the use of biometric technology such as fingerprint scanning, facial recognition, and iris scanning does not contradict the basic principles of Islamic law, as long as its use is done for legitimate purposes and in accordance with Islamic values. This technology is considered legitimate in the context of Islamic banking because it helps improve transaction security and efficiency in verifying customer identity, as well as preventing fraud that can harm banks or customers.¹³

However, some scholars caution that any innovation in Islam, including the use of new technologies, must still consider its impact on the fundamental principles of sharia. In this regard, biometric technology should be applied carefully so as not to add to or detract from sharia values, such as fairness and transparency. Therefore, as long as biometric technology is used to ensure legitimate identity and secure financial transactions and is applied in a way that does not harm individuals or society, then its application can be considered legitimate. However, some scholars may consider the use of biometrics as

¹² Issa Hamadou et al., "Unleashing the Power of Artificial Intelligence in Islamic Banking: A Case Study of Bank Syariah Indonesia (BSI)," *Modern Finance 2*, no. 1 (June 22, 2024): 131–44, <https://doi.org/10.61351/mf.v2i1.116>.

¹³ Nurul Asikin Abdul Razak, Shofian Ahmad, and Zamzuri Zakaria, "Protecting Islamic Users In E-Payment Transaction: The Islamic Perspective," *Samarah: Jurnal Hukum Keluarga Dan Hukum Islam 9*, no. 1 (March 24, 2025): 299–320, <https://doi.org/10.22373/sjhk.v9i1.26391>.

makruh in certain contexts, especially if there is a potential misuse of personal data that may violate the principle of privacy that is highly respected in Islam.¹⁴

Privacy (*sirr*) is highly valued in Islamic law, so the use of biometric technology that involves the collection and storage of personal data should be done with caution. Some scholars are concerned that biometric technology could lead to potential misuse of personal data if there is no clear mechanism to protect such data. In this regard, it is important for banks and financial institutions to implement biometric technology to ensure that the use of biometric data does not violate privacy principles. This can be done by ensuring that customers give explicit consent for the use of their data and that the data is stored securely, used only for legitimate purposes, and not misused for other purposes¹⁵.

Therefore, while biometric technology is acceptable in Islamic banking, its use must comply with strict provisions regarding transparency, data security, and privacy protection. As a preventive measure, banks and financial institutions need to ensure that biometric data collected is only used for clear and legitimate purposes and take the confidentiality of such information seriously. In addition, the application of biometric technology should always be based on the explicit consent of the customer and should comply with applicable data protection regulations at both national and international levels.

Islamic scholarly perspectives on biometric technology in banking are grounded in *mu'āmalah* (commercial transactions) principles and *maqāṣid al-sharī'ah* (objectives of Islamic law). Key fatwas provide explicit guidance:

DSN-MUI Fatwa (Indonesia): “*The use of biometric data for verification of Islamic banking transactions is legally mubāḥ (allowed) as long as it meets the following conditions: (1) customer consent (iqrār), (2) does not violate ḍarūriyyāt al-khams (the five basic requirements of sharia), and (3) guarantees data confidentiality according to the principle of ḥifẓ al-‘irdh (protection of honor).*”¹⁶

AAOIFI Standard (Global): “*Biometric authentication is permissible (jā’iz) under Sharī’ah if it prevents fraud (tadlīs) and upholds ḥifẓ al-māl (protection of wealth). However, data storage must avoid makrūh (reprehensible) practices like indefinite retention without necessity.*”¹⁷

Scholars evaluate biometric validity through established fiqh principles, applying specific rulings to banking contexts. The foundational concept of *mubāḥ* (permissible) governs biometric use for core banking functions like fraud prevention in transactions, as it aligns with the protection of wealth (*ḥifẓ al-māl*). However, practices exceeding necessity such as indefinite retention of iris scans without consent fall under *makrūh* (discouraged) due to potential privacy violations. In exceptional cases like security emergencies (e.g., preventing systemic financial fraud), *ḍarūrah* (necessity) conditionally permits expanded biometric application, provided it adheres to proportionality principles under *maqāṣid al-*

¹⁴ Mahmoud A. El-Gamal, *Islamic Finance: Law, Economics, and Practice*, 1st ed. (Cambridge: Cambridge University Press, 2006),

<https://books.google.co.id/books?id=2EIRUvoVRxYC&printsec=frontcover&hl=id#v=onepage&q&f=false>.

¹⁵ Ala Abdulrahman Abdulqawi, “Investigating the Influencing Factors and Attitude towards Online Banking Using Biometric Technology” (Universiti Teknologi Malaysia, 2013),

<http://myto.upm.edu.my/find/Record/my-utm-ep.35862/Description?lng=ar>.

¹⁶ Dewan Syariah Nasional – Majelis Ulama Indonesia (DSN-MUI), “Fatwa Nomor 117/DSN-MUI/II/2018 Tentang Layanan Pembiayaan Berbasis Teknologi Informasi Berdasarkan Prinsip Syariah” (Jakarta, 2018).

¹⁷ The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), *Shari’ah Standards* (Manama: Dar AlMaiman for Publishing & Distributing, 2015).

sharī'ah.¹⁸

Ethical and Islamic Legal Aspects of Biometrics

The application of biometric technologies, such as fingerprint scanning, facial recognition, and iris scanning, in the Islamic banking sector demands study in terms of Islamic law and ethics. The use of human body data as an identification object for authentication and identity verification purposes needs to be carefully analyzed to comply with sharia principles, especially those related to privacy and individual rights. In the perspective of Islamic law, the collection of body data, such as fingerprints or faces, can be considered legitimate if it is done with the explicit permission of the individual concerned and for legitimate purposes and does not harm personal rights.

In general, the collection of bodily data is considered legal if it is done with the clear consent of the individual concerned and used for legitimate purposes, such as verification of customer identity in Islamic banking. Islam highly values the privacy (*sirr*) of every individual and safeguards the security of the body as part of the protection of basic rights in religion. Therefore, the use of biometric technology must be done with the precautionary principle by ensuring that the body data collected is not used for unauthorized purposes or to the detriment of the individual. Islam teaches that every action involving individuals should be done with full respect for their honor and personal rights¹⁹.

However, while biometric technology offers many benefits in improving security and efficiency, the risk of misuse of body data is a major concern. One of the main risks is the potential misuse of biometric data by third parties, be it irresponsible parties in financial institutions or unauthorized outsiders. If body data such as fingerprints or faces fall into the wrong hands, then this can be used for criminal acts, such as identity theft or fraud. From a Sharī'ah perspective, this is clearly against the principle of protecting the life (*nafs*) and property (*mal*) of individuals. Misuse of data to the detriment of individuals also violates the basic principles of justice and protection of personal rights²⁰.

In terms of Maqāṣid sharia, which focuses on protecting the five basic elements of religion, soul, mind, property, and offspring, the misuse of biometric data could undermine some of these important aspects. One of them is privacy (*sirr*), which is an integral part of protecting individual rights in Islam. In addition, if biometric data is used for harmful or unlawful purposes, it can damage a person's life and property and create injustice in society. Therefore, any technology or innovation in Islam must be viewed in terms of its impact on the welfare of the ummah and must not bring greater harm than benefit²¹.

The ethical and legal aspects of Islam in the use of biometrics in Islamic banking emphasize the importance of privacy protection, explicit consent of customers, and strict data governance, as reflected in the DSN-MUI fatwa and AAOIFI standards which state that biometrics are legal *mubāḥ* (permissible) as long as they meet the principles of maqāṣid al-sharī'ah such as *Hifẓ Al-Māl* And *Hifẓ Al-*

¹⁸ M. Kabir Hassan et al., "A Biometrics Analysis of Economics and Finance Concepts in the Hadith Literature," *International Journal of Islamic Thought* 25 (June 1, 2024): 37–58, <https://doi.org/10.24035/ijit.25.2024.284>.

¹⁹ Mohd Zulkifli Muhammad et al., "Internet Banking of Islamic Banks: Issues of Security and Privacy," *Society* 2, no. 5.0 (2021): 2–156, <https://doi.org/10.5281/zenodo.5203070>.

²⁰ Jordan Deliversky and Mariela Deliverska, "Ethical and Legal Considerations in Biometric Data Usage—Bulgarian Perspective," *Frontiers in Public Health* 6 (February 12, 2018): 345853, <https://doi.org/10.3389/FPUH.2018.00025/BIBTEX>.

²¹ Mohamed Fairouz Abdul Khir and Ismail Mohamed, "Applying Risk-Taking in Islamic Banking and Finance from the Perspective of Islamic Jurisprudence," *International Journal of Management and Applied Research* 10, no. 1 (2023): 63–80, <https://doi.org/10.18646/2056.101.23-005>.

Nafs. This view is in line with Western bioethical literature that emphasizes the principles of autonomy, justice, and non-maleficence, in which the protection of sensitive data and the privacy rights of individuals are top priorities.²² Thus, both the Islamic and Western ethical systems demand transparency, accountability, and protection of customer rights in the application of biometrics in the digital financial sector.

Discussion

Biometrics vs Digital Signatures

Are biometrics the most ideal option in an Islamic financial system, or are there alternatives that are more friendly to the ethical principles of Sharī‘ah? One alternative worth comparing is digital signatures. Unlike biometrics, which rely on taking biological elements, digital signatures work with encrypted data and electronic authorization, which is not invasive to the human body. Some people might consider this system to be more sharia-safe because it does not touch the boundaries of digital aurat (i.e. strategically valuable personal information).²³ states that, the validity of a contract in the Islamic system depends not only on its authentication method, but also on the transparency of intentions, voluntariness (*riḍā*), and fairness of treatment.

However, biometrics carries a very strong verification power. It can answer a classic problem in muamalah fiqh: how to guarantee that the party signing a contract is really the person? In practice, biometrics has a higher non-repudiation capability than ordinary digital signatures. This means that in situations that demand irrefutable proof, biometrics have the upper hand. Thus, this comparison is not simply about which technology is more sophisticated, but rather about the battle between efficiency and prudence, between benefit and potential harm. In this context, the author is of the view that the ideal system is one that can offer flexible options, where customers are given the freedom to choose the verification system that best suits their personal awareness and beliefs.

Biometric technology and digital signatures are both used for authentication in Islamic banking, but they have different characteristics and implications. Biometrics, such as fingerprints, facial recognition, and iris scans, offer higher security because they are difficult to forge and provide a fast and convenient verification process without the need to remember passwords. In contrast, digital signatures rely more on encryption and electronic certificates as legal and sharia legal forms of authentication.²⁴ However, biometrics present more complex privacy and data protection challenges than digital signatures, requiring stricter regulation. In the context of *sharia*, these two methods can be categorized as *mubāḥ* (permissible) if they meet the principles of justice, transparency, and explicit consent (*iqrār*) from the client.

Necessity For Contemporary Fatwas

The use of biometric technology in Islamic banking is not just a digitization trend but part of a deep transformation process in the way we understand trust, responsibility, and security in financial transactions. Based on studies, biometrics have been widely applied in

²² Auxane Boch et al., “Beyond the Metal Flesh: Understanding the Intersection between Bio- and AI Ethics for Robotics in Healthcare,” *Robotics* 12, no. 4 (August 1, 2023), <https://doi.org/10.3390/robotics12040110>.

²³ El- Gamal, *Islamic Finance: Law, Economics, and Practice*.

²⁴ Taekyoung Kwon and Jae Il Lee, “Practical Digital Signature Generation Using Biometrics,” *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 3043 (2004): 728–37, https://doi.org/10.1007/978-3-540-24707-4_85.

key stages such as KYC, account opening, and transaction authorization²⁵. Facial recognition, fingerprinting, and iris scanning are no longer futuristic but are now key instruments in ensuring the integrity of banking transactions.

From the point of view of Maqāsid sharia, this measure seems to parallel the objectives of safeguarding lives (*ḥifẓ al-nafs*) and property (*ḥifẓ al-māl*). Any effort to avoid fraud and identity theft, especially in a financial system that involves public trust, is a clear manifestation of the principle of *maṣlaḥah* (benefit). In fact, the principle of *'adl* (justice) is fulfilled when all customers are treated equally in objective and systematic identity verification, without discrimination based on physical or social status.

However, this efficiency hides a more philosophical concern: are we replacing personal and spiritual trust with cold and anonymous algorithmic instruments? In the Islamic context, individual honor (*karamah insaniyah*) is not just a technical issue but part of the core of the teachings. Biometrics that store a person's face, voice, or even retina should be treated not just as data, but as a part of human existence that should be respected wholeheartedly. As stated by Abdul Razak et al. (2025)²⁶, the principle of privacy (*sirr*) is not a legal complement but the essence of protecting human dignity.

The Dynamics of Technological Ijtihad: The Urgent Necessity of Contemporary Fatwas

As shown in various studies²⁷, the issue of biometrics goes beyond the boundaries of classical fiqh law. It touches a new realm that has not been fully touched by the books of *turats*, where data becomes identity and networks become a space for worship and *muamalah*. In this situation, *ijtihad* becomes not only relevant but urgent.

We need *ijtihad jamai'i* (collective *ijtihad*), which involves not only fuqaha, but also information technology experts, digital privacy experts, and civil society representatives. It is not enough to simply adopt old fatwas and attach them to new issues. We need a Maqāsid-oriented approach that looks at benefits and harms within the framework of social justice and protection of the *ummah*.

The author suggests that institutions such as DSN-MUI and OJK Syariah immediately establish a digital fatwa forum that specifically discusses the use of technology in the Islamic financial system, ranging from biometrics and blockchain to artificial intelligence. The resulting fatwa must be responsive, participatory, and have ethical authority in the eyes of the Muslim public.

Policy Recommendations

To support the implementation of sharia-compliant and secure biometrics, several policy recommendations can be submitted to the relevant authorities:

1. DSN-MUI needs to issue a special fatwa that regulates the standards for the use of biometrics in Islamic banking, including provisions for approval, data storage, and periodic sharia audit mechanisms.
2. The Islamic State Bank can integrate technical guidelines related to biometrics in Islamic banking regulations, emphasizing aspects of personal data protection,

²⁵ Desky and Maulina, "Digital Transformation in Islamic Banking"; Robinson, "Secure 3: An Application of the Multiplication Approach for Enhancing Online Banking Security."

²⁶ Abdul Razak, Ahmad, and Zakaria, "Protecting Islamic Users In E-Payment Transaction: The Islamic Perspective."

²⁷ Abdulqawi, "Investigating the Influencing Factors and Attitude towards Online Banking Using Biometric Technology"; Deliversky and Deliverska, "Ethical and Legal Considerations in Biometric Data Usage—Bulgarian Perspective."

transparency, and cybersecurity.

3. Bank Indonesia (BI) is advised to strengthen digital authentication regulations that accommodate biometrics as the primary authentication method, with high security standards and strict consumer protection.

The implementation of these recommendations will strengthen customer trust, improve transaction security, and ensure that technological innovation runs in line with sharia principles and national regulations.

Conclusion

The conclusion of this study confirms that the use of biometric technology in Islamic banking can be accepted in sharia if it meets the principles of privacy protection, explicit consent of customers, and strict data governance in accordance with *maqāṣid al-sharī'ah*. The implementation of biometrics has been proven to improve the security and efficiency of services but still require continuous monitoring to avoid the risk of data misuse. This research also highlights the importance of contemporary fatwas and regulations that are responsive to the development of digital technology in the Islamic banking sector. In the future, empirical studies that examine customer perceptions of the use of biometrics in Islamic banking are needed to provide more concrete input in policy development and fatwas. This study contributes to Islamic finance scholarship by bridging biometric technology and Islamic legal-ethical discourse, offering a *maqāṣid*-based framework for evaluating identity verification innovations. By integrating principles such as *hifz al-māl* (protection of property) and *hifz al-nafs* (protection of life), it provides a structured approach to assess the permissibility and ethical implications of emerging digital authentication methods within Islamic banking. Furthermore, this research strengthens the argument for a dynamic fatwa regime that is responsive to rapid digital disruptions in financial services, emphasizing the need for contemporary and adaptive jurisprudential guidance to ensure that technological advancements align with sharī'ah values and protect stakeholders effectively.

References

- Abdillah, Ulil Absor Faiq, Fawaid Fawaid, and Bakhrul Huda. 2024. "Penyelesaian Problem Akad Istishna Berdasarkan Fatwa DSN-MUI Nomor 06 DSN-MUI IV 2000 Di UD Putra Ngetos Meubel". *El-Jizya : Jurnal Ekonomi Islam* 12 (1):131-50. <https://doi.org/10.24090/ej.v12i1.11273>.
- Abdul Khir, Mohamed Fairouz, and Ismail Mohamed. "Applying Risk-Taking in Islamic Banking and Finance from the Perspective of Islamic Jurisprudence." *International Journal of Management and Applied Research* 10, no. 1 (2023): 63–80. <https://doi.org/10.18646/2056.101.23-005>.
- Abdul Razak, Nurul Asikin, Shofian Ahmad, and Zamzuri Zakaria. "Protecting Islamic Users In E-Payment Transaction: The Islamic Perspective." *Samarah: Jurnal Hukum Keluarga Dan Hukum Islam* 9, no. 1 (March 24, 2025): 299–320. <https://doi.org/10.22373/sjkh.v9i1.26391>.
- Abdulqawi, Ala Abdulrahman. "Investigating the Influencing Factors and Attitude towards Online Banking Using Biometric Technology." *Universiti Teknologi Malaysia*, 2013. <http://myto.upm.edu.my/find/Record/my-utm-ep.35862/Description?lng=ar>.
- Boch, Auxane, Seamus Ryan, Alexander Kriebitz, Lameck Mbangula Amugongo, and Christoph Lütge. "Beyond the Metal Flesh: Understanding the Intersection

- between Bio- and AI Ethics for Robotics in Healthcare.” *Robotics* 12, no. 4 (August 1, 2023). <https://doi.org/10.3390/robotics12040110>.
- BSI Bank Syariah Indonesia. “KEBIJAKAN PRIVASI PT BANK SYARIAH INDONESIA Tbk,” n.d. Accessed June 22, 2025.
- Deliversky, Jordan, and Mariela Deliverska. “Ethical and Legal Considerations in Biometric Data Usage—Bulgarian Perspective.” *Frontiers in Public Health* 6 (February 12, 2018): 345853. <https://doi.org/10.3389/FPUBH.2018.00025/BIBTEX>.
- Desky, Harjoni, and Isra Maulina. “Digital Transformation in Islamic Banking.” *International Journal of Multidisciplinary Research and Analysis* 05, no. 12 (December 30, 2022). <https://doi.org/10.47191/IJMRA/V5-I12-42>.
- Dewan Syariah Nasional – Majelis Ulama Indonesia (DSN-MUI). “Fatwa Nomor 117/DSN-MUI/II/2018 Tentang Layanan Pembiayaan Berbasis Teknologi Informasi Berdasarkan Prinsip Syariah.” Jakarta, 2018.
- El- Gamal, Mahmoud A. *Islamic Finance: Law, Economics, and Practice*. 1st ed. Cambridge: Cambridge University Press, 2006. <https://books.google.co.id/books?id=2EIRUvoVRxYC&printsec=frontcover&hl=id#v=onepage&q&f=false>.
- El-Gama, Mahmoud A. *Islamic Finance: Law, Economics, and Practice*. Islamic Finance: Law, Economics, and Practice. Cambridge University Press, 2006. <https://doi.org/10.1017/CBO9780511753756>.
- Fitria, Tira Nur. “Islamic Banking Digitalization: Challenges and Opportunities in the Era of Industrial Revolution 4.0.” *Jurnal Ilmiah Ekonomi Islam* 11, no. 01 (2025). <https://doi.org/10.29040/JIEI.V11I1.16855>.
- Ganguly, Ajay Kumar, Subhajit Bhattacharya, and Subrata Chattopadhyay. “A Design of Efficient Biometric Based Banking System Through AI-Powered Transaction Security Fintech System for Secure Transactions.” 2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering, ICACITE 2024, 2024, 492–96. <https://doi.org/10.1109/ICACITE60783.2024.10617391>.
- Hamadou, Issa, Aimatul Yumna, Hawaou Hamadou, and Mamadou Salieu Jallow. “Unleashing the Power of Artificial Intelligence in Islamic Banking: A Case Study of Bank Syariah Indonesia (BSI).” *Modern Finance* 2, no. 1 (June 22, 2024): 131–44. <https://doi.org/10.61351/mf.v2i1.116>.
- Hassan, M. Kabir, Hasan Kazak, Ahmet Tayfur Akcan, and Müşerref Arik. “A Biometrics Analysis of Economics and Finance Concepts in the Hadith Literature.” *International Journal of Islamic Thought* 25 (June 1, 2024): 37–58. <https://doi.org/10.24035/ijit.25.2024.284>.
- Huda, Bakhrol. 2022. “Analisis Keabsahan Penyaluran Harta Zakat Dalam Bentuk Al-Qardh Al-Hasan: Studi Atas Materi Ijtima’ Ulama Komisi Fatwa MUI 2021”. *Management of Zakat and Waqf Journal (MAZAWA)* 3 (2):66-86. <https://doi.org/10.15642/mzw.2022.3.2.66-86>.
- Irimia-Diéguez, Ana, Gema Albort-Morant, Maria Dolores Oliver-Alfonso, and Shakir Ullah. “Predicting the Intention to Use Paytech Services by Islamic Banking Users.” *International Journal of Islamic and Middle Eastern Finance and Management* 17, no. 1 (January 16, 2024): 1–15. <https://doi.org/10.1108/IMEFM-07-2022-0298/FULL/PDF>.
- Kwon, Taekyoung, and Jae Il Lee. “Practical Digital Signature Generation Using Biometrics.” *Lecture Notes in Computer Science (Including Subseries Lecture*

- Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) 3043 (2004): 728–37. https://doi.org/10.1007/978-3-540-24707-4_85.
- Manju, V, and S Madhumathi. “Improving Net Banking Security with Face Recognition Based Bio-Metric Verification,” 2019. <https://doi.org/10.32628/CSEIT195335>.
- Muhammad, Mohd Zulkifli, Farah Hanan, Caturida Meiwanto Doktoralina, Dzulkifli Mukhtar, Mohd Fahmi Ghazali, and Muhammad Khalilur Rahman. “Internet Banking of Islamic Banks: Issues of Security and Privacy.” *Society* 2, no. 5.0 (2021): 2–156. <https://doi.org/10.5281/zenodo.5203070>.
- Nurhidayatullah, Achmad Syawal, and Oman Fathurohman SW. “Maqāṣid Syariah Sebagai Kerangka Kerja Untuk Inovasi Produk Keuangan Non Bank Dalam Era Digital.” *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah* 9, no. 5 (December 13, 2024). <https://doi.org/10.30651/JMS.V9I5.24835>.
- Robinson, Jen. “Secure 3: An Application of the Multiplication Approach for Enhancing Online Banking Security.” *Journal of Innovations*, June 1, 2023. <https://doi.org/10.62470/5A244480>.
- Subbarao, N., S. M. Riyazoddin, and M Janga Reddy. “FPR a Secure and Secured Biometric in Web Banking-Survey .” *Global Journal of Computer Science and Technology Graphics & Vision* 13, no. 7 (2013): 25–30.
- The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). *Shari’ah Standards*. Manama: Dar AlMaiman for Publishing & Distributing, 2015.
- Wildan Fawa, Muhamad, Yopi Yudha Utama, Nandita Eka Saputri, Nur Aziza, Institut Agama Islam Negeri Kediri, and Kediri-Indonesia Author. “Palm Payment System: Islamic Finance Perspective.” *Proceeding of International Conference on Islamic Economics, Islamic Banking, Zakah and Waqf*, September 25, 2023, 597–608. <https://doi.org/10.24090/IEIBZAWA.V1I1.832>.