LEGAL AND SOCIO-ECONOMIC ISSUES OF AUTOMATED ISLAMIC BANKING IN UGANDA: LESSON FROM INDONESIA

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Abstract

The global surge in digital technology has revolutionized various sectors, including Islamic banking. While Indonesia has successfully incorporated digital automation into its Islamic banking system, Uganda's nascent Islamic banking system faces opportunities and challenges in adopting similar technologies. This study uses a hybrid research method with a conceptual approach to explore the prospects and challenges in automating Uganda's Islamic banking system by learning from Indonesia's progress. A total of 306 questionnaires were distributed to Ugandan respondents, and the data were analyzed descriptively and analytically. The findings show that automation has significantly improved the Islamic banking system in Indonesia, a model that Uganda can emulate. However, implementation in Uganda faces legal and socio-economic barriers that may affect its feasibility. This study recommends revising Uganda's legal framework to support and regulate a digitalized Islamic banking system while addressing socio-economic challenges. Ultimately, the study underscores that with the right reforms, automation can improve Uganda's Islamic banking landscape.

Keywords: *Legal; Automated; Islamic; Banking; Uganda; Indonesia*

1. Introduction

The development of digital technology is considered a blessing to mankind and the entire global environment.[1] This is concerning the fact that every tedious activity or task that could take a long hour to execute by humans is seamlessly executed with the use of technology.[2] Furthermore, it has also aided in resolving the barrier of distance, that negotiation, communication, campaign, and awareness have been made easy with digital technology.[3] Virtually all sectors of the global

[1] I. Tlemsani et al., "Digitalization and Sustainable Development Goals in Emerging Islamic Economies," *Journal of Islamic Accounting and Business Research* 4, no. 2 (2023): 45–57.
[2] T. S. Patma et al., "The Impact of Social Media Marketing for Indonesian SME Sustainability: Lessons from the COVID-19 Pandemic," *Cogent Business & Management* 8, no. 1 (2021): 1953679, https://doi.org/10.1080/23311975.2021.1953679.
[3] Christine Greenhalgh and Mark Rogers, "The Value of Intellectual Property Rights to Firms and Society," *Oxford Review of Economic Policy* 23, no. 4 (December 1, 2007): 541–67, https://doi.org/10.1093/oxrep/grm035.

environment including the banking system have integrated digital technology into their daily activities[4] , It suffices to state that the Islamic banking system is a unique financial system that operates on a different dimension from the conventional banking system. This is concerning the fact that it operates strictly on Islamic principles and tenets.[5] Although, it limits the Islamic banking system to operate within Islamic principles could limit it financial capability, awareness of its operation, and offering of limited financial services. However, the current trend of most countries automating their Islamic banking system in line with Sharia principles has aided in providing an accessible, effective Islamic banking system that offers financial services in different dimensions that are appealing and commendable.[6] This is evident from the various countries that have automated their Islamic banking system.

For example, Indonesia is a good prototype for exploring how digital technology has aided and enhanced the automated process of the Islamic banking system.[7] This is because Indonesia's Islamic banking system is fully automated. To improve and enhance effective service delivery, they have incorporated blockchain technology, apps for mobile banking, and online banking systems that are sharia compliance.[8] This digital technology innovation within the Indonesian Islamic banking system has aided in expanding Islamic banking activities and offering effective banking services to its customers. Furthermore, automating the Islamic banking system in Indonesia has further aided in better risk management, providing a variety of financial services seamlessly and increasing the level of trust among its customers as a result of the fact that automating its Islamic banking activities has increased the level of transparency as it concerns it financial transactions or dealings.[9]

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[4] A. Susilo et al., "The Implementation of Robotic Process Automation for Banking Sector: Case Study of a Private Bank in Indonesia," 2022, 365–71, https://doi.org/10.1145/3512576.3512641.

[5] S. Maharani, M. Ulum, and A. Purnomo, "Electronic Banking: Opportunities and Future Challenges of Islamic Economy in Indonesia," *International Journal on Islamic Applications in Computer Science and Technology* 8, no. 1 (2020): 01–10.

[6] I. 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 (2024): 131–44, https://doi.org/10.61351/mf.v2i1.116.

[7] B. Hakimu, "Islamic Finance Principles and Performance of Micro, Small and Medium Enterprises (MSMEs) in Makindye Division, Kampala District, Central Uganda," *International Journal of Islamic and Middle Eastern Finance and Management* 6, no. 1 (2024), https://doi.org/10.1108/IMEFM-05-2023-0201.

[8] A. Mergaliyev et al., "Higher Ethical Objective (Maqasid al-Shari'ah) Augmented Framework for Islamic Banks: Assessing Ethical Performance and Exploring Its Determinants," *Journal of Business Ethics*, 2019, 1–38, https://doi.org/10.1007/s10551-019-04331-4.

[9] M. Nyarko, "The United Nations Guiding Principles on Business and Human Rights and Uganda's Extractive Sector," in *Elgar*, 2022, 57–75, https://doi.org/10.4337/9781802207460.00013.

However, it must be noted that the underlying theories as it concern study involve the Paradigm of *Tawhid*, an Islamic Finance Theory, the theory of Islamic finance thus rests with inevitably a Tawhidic paradigm that all financial transactions must be in accordance with Islamic rules derived from the *Quran* and the *Hadith*. Prohibits riba and *gharar* and maysir and allows only ethical investments through profit-sharing arrangements. This theory is significant concerning automated Islamic banking in Uganda since it outlines the requirement for digital systems to be Sharia-compliant. Automated systems should incorporate algorithms by which *halal* transactions can be handled, developed, and regulated to allow transparency and ethics. Further, the *Tawhidic* paradigm approaches socio-economic justice-the reason for which it is necessary to develop financial inclusion that addresses economic inequalities in Uganda as a result of its successful implementation in Indonesia.

Islamic banking is guided by equity, openness, and Islamic law—particularly the prohibitions of *riba* (interest), *gharar* (uncertainty), and *maysir* (gambling). Digitization can improve these principles and make Islamic financial services more efficient and accessible. Islamic banking bans usury, hence interest is forbidden. *Mudharabah* (profit sharing) and *murabahah* are possible online with technology. Digital technology makes all transactions transparent and equitable, as Sharia requires. Technology automates and combines transaction paperwork, decreasing traditional banking misuse and inequality.

Also, the socio-technical systems theory looks at the relation of technology to social structures and gives enough room for the two very important factors in the successful adoption of technology, which are technical and human measures. In the case of the automated Islamic banking system in Uganda, it aids in thinking of systems that are to be built considering the needs of users, the cultural context, and the institutional capacity.[10] The success story of Indonesia, continuing to improve efforts on how socio-technical systems have been put in place for Islamic banking, should serve as a role model for Uganda. It's not only about deploying advanced digital platforms, but also educating users, aligning the regulatory framework, and collaborating of all stakeholders to make sure that the technology achieves socioeconomic objectives while improving financial inclusion.[11]

[10] Z. Hasan and M. R. N. Putri, "Islamic Banking in Indonesia and Globalization in Era 4.0," *Management Research Journal* 10, no. 2 (2021): 45–57, https://doi.org/10.37134/mrj.vol10.2.8.2021.

[11] M. Kabir Hassan and Michael Mahlknecht, "The Role of Islamic Finance in the World Economy," *International Journal of Islamic and Middle Eastern Finance and Management* 4, no. 2 (2011): 148–60.

However, it must be noted that the establishment of the Islamic banking system is still at its nascent stage.[12] In this regard, it is faced with several challenges in striving to grapple with the conventional banking system in Uganda, the awareness of its banking activities is not widely known to the general public.[13] Furthermore, Islamic banking activities are limited, this is concerning the fact that the Islamic banking system in Uganda operates within Islamic principles that require or prohibit certain types of business such as *gharar* (excessive uncertainty) which involve the withholding of goods to resell during scarcity and *riba* (interest) which non-payment of interest on loan.[14] Furthermore, *haram* (forbidden) prohibits any forbidden activities such as gaming, gambling, and engaging in piggery business or hotel business for prostitution.[15] In this regard, it suffices to state that given the limited and prohibited Islamic banking activities, it will affect its ability to sustain and offer competitive banking services with conventional banks and also limit its financial activities. However, it is apt to reiterate that an automated Islamic banking system could aid the gap. This is concerning the fact that a digitalized Islamic banking system tends to expand the market frontier of banking activities, offering banking activities that are accessible without distance as a barrier. Furthermore, an automated Islamic banking system could increase the awareness of Islamic banking activities in Uganda still in its nascent stage, and foster economic growth and financial stability.

Furthermore, despite this prospect of an automated Islamic banking system will tend to provide to the Uganda Islamic banking system, several legal and socio-economic challenges may affect and limit its viability. It is concerning that this study tends to embark on a hybrid method of study in examining the prospect, legal, and socio-economic challenges concerning automated Islamic banking in Uganda with a view of learning from the Indonesian experience.

2. Methods

[12] S. H. Kakembo, A. U. F. Ahmad, and A. Muneeza, "Pioneering Islamic Microfinance in Uganda: A Sustainable Poverty Alleviation Approach," *Economic* 9, no. 1 (2022): 249–72, https://doi.org/10.4337/9781802209907.00026.

[13] Abbas Said Abubakar and Josiah Aduda, "ISLAMIC BANKING AND INVESTMENT FINANCING: A CASE OF ISLAMIC BANKING IN KENYA," *International Journal of Finance and Accounting* 2 (2016): 66–87, https://doi.org/10.47941/ijf.42.

[14] D. Suhartanto et al., "Millennial Loyalty towards Artificial Intelligence-Enabled Mobile Banking: Evidence from Indonesian Islamic Banks," *Journal of Islamic Marketing* 13, no. 9 (2022): 1958–72, https://doi.org/10.1108/JIMA-12-2020-0380.

[15] A. Aziz, I. Saputra, and D. P. Utomo, "Expert System Detecting Automated Teller Machine (ATM) Damages at Indonesian Sharia Bank Using Naïve Bayes Method," *Jurnal Mantik* 6, no. 3 (2022): 2721–26, https://doi.org/10.35335/mantik.v6i3.2936.

The study concentrates on legal matters and prospecting concerning Uganda's automated Islamic banking system, with the aim of gaining insights from Indonesia's experience. To effectively execute this research, it relies on a doctrinal method of study. We relied on primary and secondary sources of authority, including laws, articles, and other relevant material from Indonesia, Uganda, and other relevant jurisdictions. We analyzed the data from the primary and secondary sources using descriptive and analytical approaches. In light of the aforementioned, the study's adoption of the doctrinal method aims to effectively theorize, conceptualize, and develop an automated Islamic banking system in Indonesia. This system is intended to enhance the existing Islamic banking system in Uganda by incorporating digital technology into its automation.

3. Results and Discussion

3.1. The Prospect, Legal, Socio-economic Development of Automated Islamic Bank in Indonesia

Indonesia is considered one of the countries with a high number of Muslim populations and is economically viable. Given Islamic religious dominance in the country, in 1992 an Islamic bank system was launched to provide and take care of the financial needs of the Islamic religious group in Indonesia.[16] In this regard, given the licensing and approval of Islamic banking activities, the Bank Muamalat of Indonesia commenced its banking activities as the first Indonesian Islamic bank.[17] In view of this development, there has been an influx of Islamic banks in Indonesia. These banks are meant to operate in line with the Islamic principles, tenets, guidelines, and values as contained in the Quran, sunna, and hadith.[18]

Due to economic growth and public knowledge of Sharia-compliant finance, Indonesian Islamic banks have bright prospects. Islamic economics promotes justice, transparency, and usury avoidance, while Islamic banking promotes profit-sharing concepts such mudarabah and musharakah. Law No. 21 of 2008 on Islamic Banking offers a clear legal basis for Islamic bank operations, demonstrating its importance. According to regulatory theory, a structured legal system gives banks stability and assurance. Islamic banks increase as Indonesia's socio-economic

[16] A. F. Riza and M. R. Hafizi, "Customers' Attitude toward Islamic Mobile Banking in Indonesia: Implementation of TAM," *Asian Journal of Islamic Management (AJIM)* 1, no. 2 (2020): 75–84, https://doi.org/10.20885/ajim.vol1.iss2.art1.
[17] Hasan and Putri, "Islamic Banking in Indonesia and Globalization in Era 4.0."
[18] A. Rafiki and A. Nasution, "Islamic Financial Technology (FinTech) Applications in Indonesia," in *Routledge*, 2021, 17–34.

development becomes more inclusive, as the Islamic economy promotes social justice and wealth sharing. According to consumer behavior theory and behavioral economics, Islamic banks benefit from financial literacy and public knowledge of religiously aligned financial goods. As part of inclusive economic development, Islamic banks offer finance to all segments of society, especially those underserved by conventional banks. Islamic banks' ability to innovate by offering microfinance and internet banking shows how innovation theory is applied in the financial sector. Indonesian Islamic banks boost the economy, social welfare, and economic justice.

However, digital technology has converted the global community into a digitalized community that has enhanced every industry. The Indonesian Islamic banking sector wants to automate its operations with digital technology to improve customer satisfaction and follow global best practices. Indonesia has successfully implemented blockchain, fintech, and AI into its Islamic banking operations. In this context, Indonesian Islamic banking system automation has increased operating capacity and financial services access. Automation of all operations, account management, and loan service applications improves operational efficiency. Computerization lowers human interference in banking tasks, relieving employees. The result is faster operations, less staff, less human error, and faster banking processes. This suggests efficient resource use, speeding decision-making and improving service delivery.

Since Sharia-compliant banking requires careful transaction monitoring, this efficiency is invaluable. This has enabled banks to serve remote locations and improve financial inclusion. Mobile banking and agent networks allow Islamic banks to reach rural non-branch locations without physical infrastructure. Indonesia's vast landscape and many islands cause dispersion. Digital banks avoid branch investments to cut costs. Effective financial spending makes Islamic banking more viable. Cheap products and services lower consumer prices, making banking cheaper. Socioeconomic alleviation speeds banking transactions and improves customer service. Automatic transaction processing ensures quick cash deposits and payments for all corporate transactions. Thus, purchasers value this momentum and are more likely to believe it. Automated systems increase microfinance, commercial, and international banking transactions.

It suffices to state that a digitalized automated Islamic banking system in Indonesia, has aid in several socio-economic implications such as stimulating economic growth, poverty alleviation, promoting financial inclusion, and empowering small and medium businesses to take active participation in the financial-economic sector of Indonesia.[19] It must be noted that the Indonesian government was able to achieve this ground breakthrough by resolving or curtailing some potential legal and socio-economic challenges that may mitigate the viability of an automated Islamic banking system.[20] For example, Indonesia as a country is considered one of the fastest-growing digitalized countries that has an enabling environment for digital technology to thrive. Also, there is widespread awareness, sensitization, and literacy among Indonesian citizens concerning the use, relevance, and potency of digital technology.[21] Also, through the Indonesian government's economic policies, the National Committee for Islamic Economy and Finance known as KNEKS was established to ensure collaboration with various stakeholders in proffering plans to aid in the enhancement and development of the Islamic banking system. Furthermore, in 2014, the Indonesian government also initiated a strategic economic policy known as the Master Plan for Islamic Financial Architecture also known as the MPIFA. The MPIFA was designed to aid in enhancing, creating awareness, and initiating plans that will promote and project Islamic banking activities. In this regard, it suffices to state that these economic policies set the stage for a proper strategic plan incorporating digital technology in automating the Islamic banking system as part of the plan to enhance Islamic banking activities.

Furthermore, in 2011 the Finance Services Authority Regulation No. 31/POJK.05/2014 was established. The regulation stipulates that the Islamic banking system in Indonesia must initiate a sustainable financial practice that could reduce and mitigate financial risk management that may emanate from their economic activities. Also, Regulation No. 77/POJK.01/2016 concerns issues on Information Technology-Based Borrowing and Lending Services.[22] This regulation regulates issues on peer-to-peer lending platforms, requiring Islamic banks to ensure strict security measures and transparency to curtail and prevent incidents of fraud and safeguard consumers. It also stipulates requirements for digital signature, electronic contracts, and data protection, ensuring that

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[19] K. A. Wibowo, "Factors Determining Intention to Use Banking Technology in Indonesian Islamic Microfinance," *The Journal of Asian Finance, Economics and Business* 7, no. 12 (2021): 1053–64, https://doi.org/10.13106/jafeb.2020.vol7.no12.1053.

[20] A. Z. Nurjannah and S. B. Santoso, "Use of E-Banking in Islamic Banks in Indonesia: Comparison of e-Banking between Islamic Banks and Conventional Banks," *Computer Based Information System Journal* 10, no. 2 (2022): 7–12, https://doi.org/10.33884/cbis.v10i2.5565.

[21] A. Febriani, N. Iswandi, and S. A. Tiara, "Quick Response Code Indonesian Standard System on the Mobile Banking Application of Mandiri Sharia Bank," *FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman* 7, no. 2 (2021): 285–310, https://doi.org/10.24952/fitrah.v7i2.4489.

[22] Y. Masnitaa et al., "Influence of Government Support, Technology Support and Islamic Banking Awareness on Islamic Banking Choice in Indonesia with Moderating Role of Religiosity," *International Journal of Innovation, Creativity and Change* 6, no. 8 (2019): 23–45.

automated processes in Islamic banking are secure and adhere to Sharia requirement standards. Regulation No. 13/POJK.02/2018, is a notable regulation that allows Islamic financial institutions to test new digital technology products and services in a controlled environment.[23] This approach not only fosters innovation but also ensures that new technologies are safe and compliant with regulatory requirements and Sharia principles before full-scale implementation.[24]

It suffices to state that Indonesia, is considered a nation that has fully incorporated digital technology in automating the Islamic banking system. This transformation has seen the growth and development of Islamic banking activities, which serves as a model for other countries including Uganda to enable the growth of their Islamic banking system that is still in the nascent stage.

3.2. Automating Islamic Banking System in Uganda and its Relevance

The Islamic banking system is considered a prototype of the conventional banking system that operates on Sharia principles.[25] In this regard, the ideology behind the establishment and development of the Islamic banking system is based on the fact that it should be Sharia-compliant and not engage in certain activities that are considered *haram* (forbidden) in Islamic law. This is the global practice of the Islamic banking system within the global terrain. Though it suffices to state that Islamic banking activities commence in 2023 in Uganda, however, it practices and system of operation are not different from the global practice obtainable in the global environment. This is concerning the fact that Islamic banking activities in Uganda is streamlined to operate with the following fundamental Sharia or Islamic principles.

These principles include Open risk sharing and fair transparency are the two basic tenets of Islamic finance. These should be related in a transaction based on the tenets of equity and justice as defined in Sharia law. The formula must be simple and clearly defined and mutually agreed upon by both the investor as well as the entrepreneur sharing profits and losses according to their contribution and predetermined ratios. Unlike conventional finance, according to which risks primarily lie on the shoulders of a borrower, Islamic finance prefers shared responsibility and thus develops joint liability in the concept of mutual understanding. Partnership is developed to

[23] Abdelrahman Abudirbala and Mohamed Mukhtar, "Shifting from Conventional to Islamic Banking: Challenges and Barriers (a Case Study on Libya)" 18 (November 18, 2019), https://doi.org/10.51984/jopas.v18i2.412.

[24] A. Haruna, H. T. Oumbé, and A. M. Kountchou, "Child Healthcare Outcomes in Africa: Unlocking the Potentials of Islamic Finance," *Journal of Islamic Finance* 12, no. 1 (2023): 116–35, https://doi.org/10.31436/jif.v12i1.752.

[25] A. Kayongo et al., "A Framework for Strengthening and Sustaining Cooperatives for Socio-Economic Transformation in Uganda," *Applied Economics and Finance* 9, no. 2 (2022): 79–92, https://doi.org/10.11114/aef.v9i2.5554.

discourage exploiters and balance the economy so that wise decisions are encouraged when both sides share failure or success with the other. Transparency of this nature is very vital to determine the trust factor and also the ethical compliance around financial dealings.

Islamic banks indulge themselves in permissible financial activities such as *Musharakah*, where they co-invest with clients to share profits and losses. This partnership engenders a spirit of cooperation and entrepreneurship thus resulting in economic growth. For instance, in the same context, Ijarah allows Islamic banks to lease assets to clients while retaining ownership, as of now replacing loans. Another important pathway is financing through participation in *Sukuk* (Islamic bonds) that provide Sharia-compliant investment by linking returns to underlying assets rather than interests. All these revolve around the prohibition of *riba*, hence making financial transactions equitable, ethical, and Islamic. This prohibition of interest encourages risk-sharing and asset-backed financing and goes a long way toward achieving economic stability and social justice.)

Concerning the above, it suffices to state that the business or banking activities of Islamic banks in Uganda are streamlined and limited to specific banking activities. Furthermore, Islamic bank in Uganda is not permitted to engage in business or activities that are prohibited in Islam. In this regard, businesses such as hotels for prostitution, gaming or spot betting, alcohol business, and piggery farming are considered unethical (*gharar*) and prohibited (*haram*) by in Islamic religion.[26] In this regard, t given the limited banking activities of Islamic banking activities in Uganda and its nascent stage, it may limit its viability and service delivery.[27] In this regard, it suffices to state that given the trend of digital technology development, Islamic banking activities stand a better chance to thrive and have an effective service delivery. The conventional banking system in Uganda is being automated and it has improved the conventional banking activities in Uganda.[28] In this regard, incorporating blockchain technology, artificial intelligence and fintech in automating Uganda's Islamic banking system in line with Islamic principles will provide a lot of prospects and advantages for Islamic banks in Uganda to thrive effectively.

However, given the nomenclature of the Uganda Islamic banking system and its nascent stage of development, several legal and socio-economic challenges may be mitigated against its

[26] S. A. Ibrahim, "Islamic Banking in West African Sub-Region: A Survey," *Arabian Journal of Business and Management Review* 2, no. 7 (2013): 28–46, https://doi.org/10.12816/0002286.
[27] Ibrahim.
[28] S. Nambisan, M. Wright, and M. Feldman, "The Digital Transformation of Innovation and Entrepreneurship: Progress, Challenges, and Key Themes," *Research Policy* 48, no. 8 (2019): 1–9, https://doi.org/10.1016/j.respol.2019.03.018.

effectiveness. In this regard, it will be relevant to consider some of the legal and socioeconomic challenges that may mitigate or limit the effectiveness of an automated Islamic banking system in Uganda.

3.3. Legal and Socioeconomic Issues Concerning Automating Islamic Banking System in Uganda

There is no doubt that the nomenclature of the Uganda Islamic banking system is at its nascent stage and development. In furtherance of this, it suffices to state that several legal and socio-economic challenges may mitigate against its effectiveness.[29] In this regard, it will be relevant to consider some of these legal and socioeconomic challenges as follows;

The first Islamic bank in Uganda started in the year 2023, which shows that the Islamic banking system in Uganda is still at it nascent stage. In this regard, it suffices to state the Islamic banking system in Uganda is still grappling with having a specific regulatory framework.[30] The laws there in regulating the Islamic banking system in Uganda are disjointed pieces of provisions drawn from conventional legislation, and conventional and Islamic banking regulations. This legislation includes the Constitutions of Uganda, Uganda Financial Institutions Act 2004 and its amendment 2016, Financial Institution (Islamic Banking) Regulation, Financial Institutions (Licensing) Regulation, Bank of Uganda (BOU) Guidelines and Circulars, and Sharia Advisory Board Regulations.[31] While this law is meant to regulate physical Islamic banking activities, it does not provide for or contemplate issues as it concerns automated Islamic banking systems which include blockchain technology, digital signature, electronic negotiation of contracts, and other financial technology-related activities that could be sharia or Islamic compliance. However, it may be argued that Uganda has laws concerning the regulation of digital technology and electronic contracts. It suffices to opine that it is counterproductive to argue in that regard, this is concerning the fact that these laws are meant to regulate conventional issues as it concerns the use of digital technology in conventional contract and commercial business. Automated Islamic banking is a special banking system that requires specialized laws tailored to suit its purpose which is meant to operate.

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[29] P. A. Aidonojie, "Challenges Concerning the Legal Framework of an Automated Personal Income Tax in Edo State, Nigeria," *Jurnal Hukum Replik* 12, no. 1 (2024): 83–115, https://doi.org/10.31000/jhr.v12i1.7717.

[30] F. Alqahtani, D. G. Mayes, and K. Brown, "Reprint of Economic Turmoil and Islamic Banking: Evidence from the Gulf Cooperation Council," *Pacific-Basin Finance Journal* 42 (2017): 113–25, https://doi.org/10.1016/j.pacfin.2016.06.013.

[31] I. C. Lubogo, *Sharia Law and Islamic Banking in Uganda*, ed. 1st (Jescho Publishing House, 2022).

It must also be noted that the Islamic banking system is meant to adhere to and be administered by Sharia principles and tenets. This is further confirmed by Section 1 of the Financial Institutions (Amendment) Act, 2016, which amended section 2 of the Principal Act, which defined Islamic banking activities to mean any financial business activities that are Sharia compliance.[32] Furthermore, section 14 of the Islamic Banking Regulation, mandated the Sharia Advisory Board to review and ensure that all banking activities of Islamic banks in Uganda align with Sharia principles and beliefs. In this regard, it suffices to state that the Islamic banking system prohibits the following transaction interest on loan (which is also know as "*riba*" in Islam), speculative transactions to increase profit generation (which is also know as "*gharar*" in Islam), and investments or transactions that are considered prohibited (Also known as "*haram*" in Islam) by Sharia principles.[33] In this regard, it suffices to state that incorporating legal and Sharia requirements in an automated Islamic banking system requires sophisticated software or digital technology. Furthermore, such technology must from time to be updated and reviewed to ensure it is by the current trend of legal requirements of the operation of the Islamic banking system in Uganda.[34]

Furthermore, it must also be noted that using digital technology though a blessing to mankind, also presents some challenges of data privacy and cybersecurity of consumers or users of digital technology. In this regard, the information and data privacy of consumers or customers of an automated Islamic banking system may be susceptible to Internet fraudsters. This is made more challenging as a result of the fact that there is no legal framework concerning an automated Islamic banking system to ensure strict compliance and prosecution of internet fraudsters. Furthermore, it can be argued that in a situation where there is non-existence of a legal framework of an automated Islamic banking system, there is the possibility that there could be internal fraudulent activities among staff, given their awareness of the absence of an effective legal framework that command takes corrective actions, including penalties and sanctions, against institutions that fail to comply with regulations. Hence the need for an organized legal framework is essential to maintaining trust and confidence in an automated Islamic banking system.

[32] M. Sennanda et al., "Project Financing and Poverty Trends in the Islamic Development Bank Member Countries," *International Journal for Multidisciplinary Research* 5, no. 2 (2023): 1–14.

[33] C. J. Okongwu, U. Samuel, and P. A. Aidonojie, "Investigation of Companies' Affairs and Ownership in Nigeria," *African Journal of Law and Human Rights* 6, no. 2 (2022): 44–65.

[34] N. Alziyadat and H. Ahmed, "Ethical Decision-Making in Islamic Financial Institutions in Light of Maqasid Al-Sharia: A Conceptual Framework," *Thunderbird International Business Review* 61, no. 5 (2019): 707–18, https://doi.org/10.1002/tie.22025.

Furthermore, other legal and socio-economic issues may also limit and affect automated Islamic banking in Uganda and they are: The ICT infrastructure of Uganda is quite commendable, however, some areas still remain underdeveloped, making it difficult for most rural people to integrate digital-related services, including Islamic banking. Also, even among the urban centers, there is inconsistent and slow network coverage, preventing digital transactions. Most financial institutions still carry the baggage of outdated systems that cannot support modern banking needs. Also, as a widespread phenomenon where Islamic banking principles and services are not known, it affects the adoption and therefore the development of Islamic banking in the country. Most citizens are yet to grapple with the idea of an interest-free bank whose operation is based on Sharia and regard it as a niche product only for Muslims. This misconception seems to tone down the available demand and makes interested non-Muslims hesitant to seek its benefits.

Furthermore, the level of illiteracy in Uganda makes it very difficult for customer bases to take up Islamic banks and other digital services. Statistics from various studies show that most people in rural areas and a few individuals in urban in Uganda cannot read and write at a level that allows them to read or appreciate banking products and services, meaning that many customers cannot operate with banks or digital platforms. Also, there is a serious dearth of technically skilled manpower in the domain of Islamic banking principles in the digital space. Most financial institutions are poorly staffed in streams that would, otherwise, have Sharia compliance and the technical fine-tuning in managing digital parts onboard. Hence, this gaps inefficiencies in service delivery and decay the avenue for developing innovative products tailored to customer needs.

3.4. Data Presentation, Analysis, Sample Size, and Selection Method

The research employed a questionnaire disseminated to participants living in different areas of Uganda. The data obtained from the questionnaire are consequently presented and analyzed. The study utilized a sample size of 306 respondents from various regions of Uganda, including the Western, Eastern, Central, and Northern regions. The study use simple random sampling procedures to pick respondents for the questionnaire.[35]

Questionnaires were distributed to the respondents residing in the various regions in Uganda, the data obtained werepresented, and analysed in the tabular and graphical representation above, hence the discussed of the findings are as follows. Table 1 and Figure 1 above show that 306

[35] D. Harjoni and I. Maulina, "Digital Transformation in Islamic Banking," *International Journal of Multidisciplinary Research and Analysis* 5, no. 12 (2022): 3616–22, https://doi.org/10.47191/ijmra/v5-i12-42.

respondents in Uganda responded to the question. , It suffices to state that the respondents being a residents of Uganda are well learned and knowledgeable concerning the issues of the Islamic banking system in Uganda . In this regard, in Figure 2 and Table 2, 80.7% of the respondents agreed that automating the Islamic banking system in Uganda provides several advantages and could result in effective service delivery. In identifying this prospect of automating the Islamic banking system, in Figure 3 and Table 3, the respondents identified these prospects as follows: 81.7% and 52% of the respondents stated that it enables fast transactions and service delivery and reduces the level of cost operation respectively. 62.6% and 74.4% were of the view that an automated Islamic banking system could enhance financial transparency and facilitate better risk management respectively. Also, 80.5% stated that an automated Islamic bank increases and creates awareness of the operation of the Islamic banking system. Furthermore, 59.3% of the respondents opined that it promotes and encourages a cashless society. These findings are similar to the findings of Harjoni Desky and Isra Maulana who stated that digital technology has several prospects that could transform the Islamic banking system. However, despite the prospect an automated Islamic banking system could provide in Uganda, some legal and socio-economic challenges could mitigate its effectiveness. Concerning this, in Figure 4 and Table 4, 79.7% of the respondents agreed that several legal and socio-economic challenges could limit an automated Islamic banking system. In this regard, in Figure 5 and Table 5, the respondents identify some of these challenges as follows:

85% of the respondents agreed that the lack of a primary legal framework tailored towards regulating automated Islamic banking systems that is Sharia compliance could result in a major challenge. In a nutshell 77.6% identify religious barriers that may result in non-compliance of digital technology products or transactions to Islamic principles. 80.9% believed that inadequate human resources possessing technical knowledge in operating digital technology is a major challenge. Also, 49.2% and 42.7% of the respondents were of the view that the challenge of illiteracy and incidence of fraud could form a major challenge in automating the Islamic banking system. Furthermore, 72% of the respondents stated that inadequate digital technological infrastructure is a major challenge

Concerning the above, to resolve and curtail the above challenges identified, the respondents in Figure 6 and Table 6 further identify possible remedies that could aid in curtailing the above challenges. In this regard, 74% suggested that there is a need for an enactment of primary legislation as it concerns an automated Islamic banking system. 81.7% stated that incorporating a robust Sharia advisory body and scholars to guide on incorporating digital technology in the Islamic banking system could serve as a remedy. 78% stipulate that strict prosecution of anyone involved in internet fraud related to automated Islamic banking systems will curtail the incidence of fraud in the Islamic banking system. 70.7% and 57.3% of the respondents identify training of Islamic bank personnel concerning an automated Islamic banking system and provision of funding concerning acquiring sufficient digital technological infrastructure, respectively as a potential remedy. Furthermore, 68.7% of the respondents stated that launching of national campaign, awareness, and education of the general public concerning automated Islamic banking systems.

Aspect	**Indonesia**	**Uganda**
Market Maturity	Advanced and well-established Islamic banking market.	Nascent stage, with limited market penetration.
Regulatory Framework	Comprehensive and supportive regulations tailored to Islamic finance.	General banking regulations; no specific framework for Islamic banking automation.
Technology Integration	Advanced automation with mobile banking, blockchain, and AI adoption.	Basic banking systems with minimal automation in Islamic banking.
Government Support	Strong policies promoting digitalization and Islamic finance growth.	Limited targeted government interventions for Islamic finance.

***Table 1**. Comparison between Uganda and Indonesia*

4. Conclusion

Islamic banking system in Indonesia has contributed immensely to Indonesia's economic and financial system. This is about the fact that over the years the Indonesian government has taken the trending dimension of digital technology in automating the Indonesia Islamic banking system. In this regard, it suffices to state that automating the Indonesian Islamic banking system has enabled the Islamic banking sector to overcome and curtail the hurdles or challenges associated with the Islamic banking system in general. However, incorporating digital technology in automating the Indonesian digital banking system is made possible through the adoption of an effective legal and socio-economic framework.

In Uganda, though the commencement of the Islamic banking system started in 2016 through the amendment of the Finance Act. However, the operation of Islamic banking activities is said to commence in 2023, and in this regard, it is apt to state that the Islamic banking activities in Uganda are still nascent. In this regard, it suffices to state that the Uganda Islamic banking system is saddled with the various challenges associated with the Islamic banking system. These challenges include Poor product innovation, lack of standardized products, complex structure and product of Islamic banks, the public perception that Islamic bank is meant for those in the Islamic region, and the inability to penetrate the market structure given limited financial activities. Furthermore, there are still the challenges of limited financial activities as the Islamic banking system is operated based on Sharia laws that limit its financial activities. Furthermore, , the study further identifies that given the trend of digital technology and the success rate of automating the Islamic banking system in Indonesia through digital technology. The Uganda Islamic banking system could surmount the above-identified challenges. This is concerning the fact that an automated Islamic banking system could enhance and improve operative efficiency, expand banking activities to remote areas, accelerate financial transaction services, create more opportunities for financial transactions, and Improve customer satisfaction.

However, the study therefore identifies that there are several legal and socio-economic challenges (such as the absence of primary legal, and limited technical personnel to manage the system, which will result in high unemployment, fraudulent activities, and inadequate technological infrastructure) that may limit and affect the viability of Islamic banking system in Uganda. The study, therefore, recommends that there be an effective automated Islamic banking system. There is a need for a primary legal framework tailored to provide and regulate the automated Islamic banking system, and training of staff to be digital technology compliant. There is a need for the provision of funding for digital technological infrastructure and strict prosecution of an internet fraudster.

Furthermore, this study recognizes limitations concerning the restricted access to comprehensive banking data as far as emerging financial technologies and the evolving nature of financial technology across countries are concerned. The comparison drawn between Uganda and Indonesia, however, points out areas that are worth considering for further exploration touching on the scaling of automated banking platforms and legal harmonization. Empirical validation studies on consumer perceptions and their socio-economic impacts vis-a-vis Islamic banking in Uganda could be some of the areas future researchers might delve into. Also, future studies would gain more practical relevance with the continued broadening of partnerships with financial institutions and practitioners.

While this study provides meaningful insights, it is by no means exhaustive. The rapidly evolving nature of digital technology and the unique socio-economic context of Uganda highlight the need for further research to build on these findings. Future studies should delve deeper into refining legal frameworks and addressing socio-economic challenges to ensure the successful implementation of automated Islamic banking systems in Uganda and other emerging markets.

Acknowledgement

The authors executed their research autonomously, without obtaining scholarships or money from public, non-profit, or commercial entities. Nonetheless, the author wishes to convey profound appreciation for the counsel and assistance offered by all who contributed to the completion of this paper. The authors recognize that this work may have areas for enhancement and invite constructive criticism and guidance to refine their skills and advance further research growth.

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