**Legal and Socio-economic Issues of Automated Islamic Banking in Uganda: Lesson from Indonesia**

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***Abstract***

*The global environment has seen the surge and development of digital technology and virtually all sectors of the global environment have been enhanced and improved with technology. In this regard, it suffices to state that, while Indonesia has incorporated digital technology in automating its Islamic banking system over time, though there are several prospects in automating the Uganda Islamic banking system, given its nascent stage, there seem to be several legal and socio-economic issues. It is concerning that this study adopts a hybrid method of study in examining the challenges and prospects concerning an automated Islamic banking system in Uganda, to learn from the Indonesian system. Concerning this, 306 questionnaires were distributed to respondents residing in Uganda, and the data obtained was analyzed, using a descriptive and analytical approach. The study found that given the fact that the Islamic banking system in Indonesia has improved through automation, the same can be replicated in Uganda's Islamic banking system. However, there several legal and socio-economic challenges that may limit the viability of an automated Islamic banking system. The study therefore concludes and recommends that automating the Islamic banking system in Uganda comes with several prospects such as enhancing the banking system, executing banking activities seamlessly, and inclining to international best practice. The study therefore recommended that, for an effective automated banking system in Uganda, there is a need to review the legal framework for incorporating and regulating a digitalised Islamic banking system. Therefore, appropriately remedy the socio-economic challenges that may limit its viability.*

***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 (Tlemsani et al., 2023). 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 (Patma et al., 2021; Rogers, 1995). Furthermore, it has also aided in resolving the barrier of distance, that negotiation, communication, campaign, and awareness have been made easy with digital technology. Concerning this, virtually all sectors of the global environment including the banking system have integrated digital technology into their daily activities (Susilo et al., 2022; Blokdyk, 2020; Endress, 2024). Concerning this, 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 (Maharani et al., 2020; Guloba and Atwine, 2021). 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 (Hamadou et al., 2024). 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 (Hakimu, 2024; Guo et al., 2020). This is concerning the fact that in Indonesia Islamic banking system is fully automated, given the fact that that incorporates blockchain technology, apps for mobile banking, and online banking systems that are sharia compliance to improve and enhance an effective service delivery of the established Islamic banking system within its territory (Mergaliyev et al., 2019). 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 (Nyarko, 2022).

However, it must be noted that the establishment of the Islamic banking system is still at its nascent stage (Kakembo et al., 2022). 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 (Abubakar & Aduda, 2017). 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 (Suhartanto et al., 2022; Islami et al., 2020). Furthermore, haram (forbidden) prohibits any forbidden activities such as gaming, gambling, and engaging in piggery business or hotel business for prostitution (Aziz et al., 2022). 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. RESEARCH METHOD**

The study focuses on legal issues and prospecting as they relate to the automated Islamic banking system in Uganda, to take a leap or learn from the Indonesia experience. To effectively execute this research, the study utlise a doctrinal method of study. In this regard, primary and secondary sources of authority such as laws, articles, and other relevant material from Indonesia, Uganda, and other relevant jurisdictions were relied on. The data obtained from the primary and secondary sources were duly analysed using descriptive and analytical approaches.

Concerning the above, the essence of adopting the doctrinal method in this study is to aim at effectively theorise and conceptualise the concept and development of an automated Islamic banking system in Indonesia to enhance the Islamic banking system in Uganda by incorporating digital technology in automating the Uganda Islamic banking system.

**3. RESULTS AND DISCUSSION**

**The Prospect, Legal, and 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 Indonesia (Riza & Hafizi, 2020; Kohli and Melville, 2019). 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 (Hasan & Putri, 2021; Li et al., 2018). Concerning 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 (Rafiki & Nasution, 2021).

However, the global environment has gradually turned into a digitalized village where every sector has been severely injected and enhanced with the introduction of digital technology. In this regard, the Indonesian Islamic banking system has sought to integrate digital technology in automating its banking activities to enhance and improve its banking activities to the satisfaction of its customers and in line with international best practices. Concerning this, Indonesia has successfully incorporated advanced digital financial technology such as blockchain, fintech, and artificial intelligence into its Islamic banking activities. In this regard, automating the Indonesia Islamic banking system has brought with it the following socio-economic impact such as:

1. Am enhance and improve operation efficiency
2. Expanding of banking activities to remote area
3. Cost-effective and reduction
4. Accelerated financial transaction services
5. Improve customer satisfaction
6. Creating more opportunities for financial transactions
7. It saves time in rendering financial services
8. Enhancing safety and security in financial-related activities

Concerning the above, 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 (Wibowo, 2021;Lokuge and Sedera, 2018).

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 (Nurjannah & Santoso, 2022). 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 (Febriani et al., 2021). 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, the Indonesian government through legal and policy frameworks has also ensured that automating and advancing the Islamic banking system through digital technology must be Sharia compliance. This is concerning the fact that Indonesia has well well-organised and structured legal framework that is primarily focused on the Islamic banking system. This law is known as the Islamic Banking Act (Law No. 21 of 2008). The Act stipulates that all Islamic bank transactions and products must be sharia compliance. Concerning this, article 2 of the Law, is geared towards ensuring Islamic banks comply with Islamic principles and tenants, hence it stipulates the core principles of sharia that Islamic banks must adhere to and they are:

1. Prohibition of Riba (Usury), this principle prohibits Islamic banks from charging interest on any loan issued to a customer or any loan transactions.
2. Adherence to profit and loss-sharing method
3. Furthermore, Islamic banks must adhere to the principles of gharar (ethical investment), in this regard, businesses that fall or consider haram (forbidden) are strictly prohibited.

 In this regard, it suffices to state that any digital technological products or services not regulated by the Act or Sharia principles regulating Islamic banking activities are not permissible or prohibited by law. To ensure that Islamic banking activities are well coordinated and supervised, Article 21 of the Indonesia Islamic Banking Act provides for establishing a Sharia Supervisory Board to ensure Islamic banking activities do not function out of their scope (Patria, 2021).

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 (Masnitaa et al., 2019). 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 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 (Abudirbala & Mukhtar, 2019). 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 (Haruna et al., 2023).

Concerning the above, 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.

**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 (Kayongo et al., 2022). 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 (Kitunzi et al., 2023), 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 and they are:

1. That there should be a transparent and fair formula for risk-sharing
2. Islamic bank is allowed to venture into joint ventures (also known as Musharakah)
3. Islamic bank is allowed to execute a leasing agreement (also called Ijarah)
4. Participate in Islamic bonds (Sukuk),
5. Prohibition of interest on loan (also known as riba)

Concerning the above it suffices to state that the business or banking activities of Islamic banks in Uganda are streamlined and limited. 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 (Ibrahim et al., 2024).

Concerning the above, it suffices to state that given the limited banking activities of Islamic banking activities in Uganda and considering its nascent stage, it may limit its viability and service delivery (Ibrahim, 2013). 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 (Nambisan at al., 2019). 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.

In this regard, it suffices to state that an automated Islamic banking system in Uganda could lead to cost reduction of banking activities, fast transactions, and service delivery, Automated systems can handle complex financial transactions with accuracy. Furthermore, an automated Islamic banking system could extend financial services to underserved populations, offering accessible, convenient, and ethical banking solutions (Abbasi et al., 2012). This can lead to greater financial empowerment, encouraging more Ugandans and businesses in Uganda to participate in the formal economy. In essence, attaining this height could also result in boosting economic growth and an inclusive financial system. Furthermore, an automated Islamic banking system in Uganda could also attract more international investors and position itself as the hub of Islamic banking financing institutions within East Africa, Africa, and the global environment, given its inclination to international Islamic banking standards.

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 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.

**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. Concerning this, it suffices to state that several legal and socio-economic challenges may mitigate against its effectiveness (Aidonojie et al., 2024). 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 (Alqahtani et al., 2017). 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 (Lubogo, 2022). 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. In this regard, it is apt to state that automated Islamic banking is a special banking system that requires specialized laws tailored to suit its purpose which is meant to operate.

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 (Sennanda et al., 2023). 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 (riba), speculative transactions to increase profit generation (gharar), and investments or transactions that are considered prohibited (haram) by Sharia principles (Okongwu et al., 2022). 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 that can filter and manage such transactions. 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 (Alziyadat & Ahmed, 2019).

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.

Concerning the above, it suffices to state that other legal and socio-economic issues may also limit and affect automated Islamic banking in Uganda and they are:

1. Inadequate technological infrastructure
2. Lack of awareness among the Uganda citizens
3. Illiteracy
4. Inadequate technical personnel of Islamic banking staff learn digital technology

**Data Presentation and Analysis**

The study utilized a questionnaire distributed to respondents residing in various regions of Uganda. Concerning this, the data generated through the questionnaire are therefore presented and analysed as follows.

**Sample Size and Selection Method**

Concerning the fact that the study focuses on legal and socio-economic issues concerning an automated Islamic bank in Uganda with a view of learning from the Indonesia experience. In this regard, the study focuses on a sample size of 306 of respondents residing in the various regions (Western Region, Eastern region, Central region, and Northern region) of Uganda. However, in selecting the respondents to respond to the questionnaire, the study utilizes simple random sampling techniques (Harjoni & Maulina, 2022). A random sampling method is considered preferable in this study given the focus of the study identifying respondents from different regions of Uganda (Aidonojie et al., 2024). Furthermore, a simple random sampling technique is considered to possess the following relevance as follows (Aidonojie et al., 2023):

1. Result often generated through the use of simple random sampling techniques is considered unbiased
2. There is credibility of the result obtained through a sampling method
3. It is simple and devoid of complication
4. It is considered preferable to sample respondents from diverse regions and cultural practice

**Data Analysis**

The data generated through the questionnaire as responded to by the respondents, are therefore presented and represented in tabular and graphical format for clarity and proper interpretation of the result generated. This is to enable the readers and audience to comprehend and decode the results generated through the questionnaire.

**Research Question One**



**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Figure 1:** **Regions resided by the respondents to the questionnaire**

|  |  |  |  |
| --- | --- | --- | --- |
| S/N | Regions in Uganda | Responses of Respondents | Percent |
| 1 | Northern Region | 57 | 18.6% |
| 2 | Eastern Region | 95 | 31% |
| 3 | Western Region | 82 | 26.8% |
| 4 | Central Region | 72 | 23.5% |
|  | **TOTAL** | **306** | **100%** |

**Table 1: Valid verification of regions resided by the respondents to the questionnaire**

**Figure 1 and Table 1** are valid graphical and tabular presentations of the respondents identifying the various regions in Uganda where they reside.

**Research Question Two**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Figure 2: Respondents** **identifying automated Islamic banking could result in quality service delivery**

|  |  |  |
| --- | --- | --- |
|  | Response | Percent |
| Valid Yes | 247 | 80.7% |
| Valid No | 59 | 19.3% |
| Total | **306** | **100%** |

**Table 2: Valid respondents identifying automated Islamic banking could result in quality service delivery**

**Figure 2 and Table 2** are respondents identifying and confirming the fact that an automated Islamic banking system could result in an effective service delivery.

**Research Question Three**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Figure 3: Prospect concerning automating Islamic banking in Uganda as identified by the respondents**

|  |  |  |
| --- | --- | --- |
| Prospect concerning automating Islamic banking in Uganda | Cluster of Response | Percentage |
| Automated Islamic banking enables fast transactions and service delivery | 201 | 81.7% |
| It reduces the level of cost operation | 128 | 52% |
| It enhances financial transparency  | 154 | 62.6% |
| It facilitated better risk management  | 183 | 74.4% |
| An automated Islamic bank increases and creates an awareness of the operation of the Islamic banking system | 198 | 80.5% |
| It promotes and encourages a cashless society  | 146 | 59.3% |

 **Table 3: Valid cluster of the prospect of automating Islamic banking in Uganda as identified by the respondents**

**Figure 3 and Table 3** are clusters of identification of the prospect of automating the Islamic banking system in Uganda.

**Research Question Four**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Figure 4:** **Respondent confirming that if Islamic banks in Uganda are automated it may pose some challenges**

|  |  |  |
| --- | --- | --- |
|  | Response | Percent |
| Valid Yes | 243 | 79.7% |
| Valid No | 62 | 20.3% |
| Total  | **305** | **100%** |

**Table 4: Valid respondent confirming possible challenges if Islamic banks in Uganda are automated**

**Figure 4 and Table 4** are confirmation by the respondent that if the Islamic banking system in Uganda is automated there are socioeconomic and legal challenges that may limit its effectiveness.

**Research Question Five**



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**Figure 5: identification of the challenges concerning automating Islamic banking system in Uganda**

|  |  |  |
| --- | --- | --- |
| Legal and socio-economic challenges in automating Islamic banks in Uganda | Cluster of Responses | Percentage |
| Lack of primary legal framework tailored towards regulating automated Islamic banking system that is Sharia compliance  | 209 | 85% |
| Religious barriers that may result in non-compliance of digital technology products or transactions to Islamic principles  | 191 | 77.6% |
| Inadequate human resources possessing technical knowledge in operating digital technology  | 199 | 80.9% |
| The challenge of illiteracy  | 121 | 49.2% |
| Incidence of fraud | 105 | 42.7% |
| Inadequate digital technological infrastructure  | 177 | 72% |

**Table 5: Valid cluster of identification of the challenges concerning automating the Islamic banking system in Uganda**

**Figure 5 and Table 5** are valid clusters of respondents identifying possible legal and socio-economic challenges that could limit and affect the viability of an automated Islamic banking system in Uganda.

**Research Question Six**



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**Figure 6: Possible** **lesson from Indonesia to remedy the challenges of automating Islamic banks in Uganda**

|  |  |  |
| --- | --- | --- |
| Possible lesson learned for Indonesia to remedy the challenges | Cluster of Responses | Percentage |
| Enactment of primary legislation as it concerns automated Islamic banking system | 182 | 74% |
| Incorporate a robust Sharia advisory body and scholars to guide on incorporating digital technology in the Islamic banking system | 201 | 81.7% |
| Strict prosecution of anyone involved in internet fraud related to automated Islamic banking system | 192 | 78% |
| Training of Islamic bank personnel concerning an automated Islamic banking system | 174 | 70.7% |
| Provision of funding concerning acquiring sufficient digital technological infrastructure  | 141 | 57.3% |
| Launching of national campaign, awareness, and education of the general public concerning automated Islamic banking system  | 169 | 68.7% |

**Table 6: Valid cluster of lessons from Indonesia to remedy the challenges of automating Islamic banks in Uganda**

**Figure 6 and Table 6** are valid clusters of identification by the respondents concerning the possible remedies that could adopted from the Indonesia experience in mitigating the challenges that could limit the effectiveness of automating the Islamic banking system.

**Discussion of Findings**

Given the questionnaire distributed to the respondents residing in the various regions in Uganda, the data obtained, presented, and analysed in the tabular and graphical representation above is therefore discussed as follows. In this regard, table and Figure 1 above show that 306 respondents in Uganda responded to the question. Concerning this, it suffices to state that the respondent being a resident of Uganda well learned and knowledgeable concerning the issues of the Islamic banking system in Uganda and the possible legal and socio-economic challenges that could mitigate automating 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 automating the Islamic banking system tends to provide, 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:

1. 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
2. 77.6% identify religious barriers that may result in non-compliance of digital technology products or transactions to Islamic principles
3. 80.9% were of the view that inadequate human resources possessing technical knowledge in operating digital technology is a major challenge
4. 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
5. 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.

**Conclusion**

Concerning the above, it suffices to state that the Islamic banking system in Indonesia has contributed immensely to Indonesia's economic and financial system. This is pertaining to 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 stage for 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. Concerning this, 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. Concerning this, the study, therefore, recommends that for the effective viability of an automated Islamic banking system, there is a need for a primary legal framework tailored to provide and regulate the automated Islamic banking system, training of staff of Islamic banks to be digital technology compliance, provision of funding for digital technological infrastructure and strict prosecution of an internet fraudster.

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