AZKA-PPZ AKADEMI ZAKAT

AZJAF
AZKA INTERNATIONAL JOURNAL OF ZAKAT & SOCIAL FINANCE ISSN : 2735-1890 e-ISSN : 2716-6643

Vol. 4 No. 2 (Special Issue 2023)

azka.zakat.com.my

DOI: 10.51377/azjaf.vol4no2.171

ROLE OF ISLAMIC FINANCIAL INSTITUTIONS IN ADDRESSING FINANCIAL EXCLUSION: A METHODOLOGICAL MIX APPROACH

TIJJANI MUHAMMAD
Department of Islamic Studies (Islamic Banking and Finance) Federal University, Gashua, Yobe State Nigeria. Email: hajiteee@gmail.com / hajiteee@fugashua.edu.ng

FAHD AL-SHAGHDARI
Institute of Islamic Banking and Finance, International Islamic University Malaysia. Email: alshaghdari@iium.edu.my

BESAR BIN NGAH
Faculty of Finance and Administrative Science, Al-Madinah International University, Malaysia. Email: drbesar.ngah@mediu.edu.my

A PEER-REVIEWED ARTICLE
(**RECEIVED** – 15TH MAY 2023: **REVISED** – 18TH JUNE 2023: **ACCEPTED** – 25TH JULY 2023)

ABSTRACT

This paper elucidates the mediating role of Islamic Financial Institutions in addressing financial exclusion in northern Nigeria, using poverty, awareness, religiosity, and attitude toward government policy as explanatory factors. The study employed a random sampling of 450 respondents using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) was used for data analysis. The secondary data were generated from Nigerian Security Exchange Commission under Islamic Finance Development Indicator. The study identified some theoretical and managerial contributions. The research indicates a highly effective mediation of Islamic financial institutions' performance in addressing financial exclusion in northern Nigeria. The study also contributed significantly to the literature by using the mediating variable to address financial exclusion. The present study developed an integrated model which defines financial exclusion and its approach through the mediation role of Islamic financial institutions in addressing the financial exclusion and poverty reduction in northern Nigeria.

Keywords: Financial Exclusion, Mediation, Islamic Financial Institution, Poverty, Awareness, Religiosity, Government policy.

INTRODUCTION

In The global spread of Islamic financial institutions (IFIs) has immensely transformed the Muslim financial system in developed and developing countries since the 2009 financial crisis. Islamic finance operates based on *Shari'ah* compliance, and it is free from interest, gambling, uncertainty, and speculation and promotes risk-sharing. Financial exclusion has become a significant challenge worldwide, especially in African countries. Financial exclusion refers to the inability of the less privileged to participate in a country's financial system (Muhammad et al., 2018). According to Ricciuti et al. (2019), financial exclusion in the developed world has attracted public interest since late 1990. Academically, numerous researches have indicated the challenges and solutions. However, developing countries are yet to adopt a solution. Most developing countries have yet to have the whole idea of the financial system. Perhaps, the generalised research consensus is the precise term of financial exclusion between cause and consequences (Muhammad and Ngah, 2021). According to Lenka and Barik (2018), Ratnawati (2020), Aziz and Naima (2021), and Gosztonyi and Hayran (2022), there needs to be more accessible to mainstream financial services. Therefore, Muhammad et al., 2018) indicate that financial exclusion is a process that prevents a particular group of people from gaining access to financial services.

Muhammad et al. (2018) stated the total number of financial exclusions worldwide is approximately 2.3 billion people, and the majority are from developing countries. However, low-income and other denominators across the board are the causes of financial exclusion (Hsuan et al., 2022). The earlier review discussed various financial exclusions between developed and developing countries. Different empirical studies provided evidence and proved that the same group of people are merged as financially excluded, such as include single parents who cannot work due to family pressure, an illiterate person without educational qualifications, the immigrant community, and ethnic minority influence, long-term unemployed, a person with a criminal history, and history of bad debt, or an account that supersedes with an overdraft as a result of unable to settle overdraft which led to restriction to reopen another account, poverty, awareness, and attitude of the government policy, cultural and religious reason (Fløttum et al., 2022). Several trials have been explored in Nigeria, and policies were applied to financial exclusion, but the financial exclusion remains. Muganyi et al. (2022) and Ogunleye and Bamidele (2022) showed that the microfinance banks in Nigeria accommodated 3.2 million Nigerians, representing 3.8 per cent of the adult's population in the country.

Further, microfinance is key in eradicating poverty, creating job employability, and fighting financial exclusion (Hsuan et al., 2022). However,

microfinance bank is based on promoting the interest of low-income earners to access financial institution at a lower level of banking; however, they exploit vulnerable individual using interest rate as conventional banking (Muhammad et al., 2022). Furthermore, Fløttum et al. (2022) predict that if only microfinance overemphasises the poor, the poverty level will be reduced, and evidence regarding the mitigation of poverty will be addressed.

Although basic problem and curiosity about financial exclusion has declined over the last decade, Nigeria is below the goal of National Strategy 2020, which is expected to reach 70 per cent of Nigerians in formal financial services by 2020. The actual number was 50per cent. This strategy has also set a target to reach 80 per cent by 2020. However, by the end of 2020, only 64 per cent of adults were financially included (EFInA, 2021). This means that 36 per cent of Nigerian adults, or 38 million adults, are financially excluded. For the first time, the EFInA Access 2020 Survey in Nigerian Financial Services measures the financial health of Nigerian Adults, with only 27 per cent of Northern adults considered financially healthy, 39 per cent financially manageable, and 34 per cent financially vulnerable. Nigerians, particularly Northern Nigeria, need convenient, affordable and accessible financial services to meet their needs, whereas most Northerners are Muslims. However, between 2018 and 2020, financial exclusion decreased by only 1 per cent, from 37 per cent in 2018 to 36 per cent in 2020, and religion and poverty are the main problems. Bridging the above gap level of financial exclusion in Northern Nigeria, the mediating role of IFIs is needed to address financial exclusion and poverty reduction in Northern Nigeria. The study is organised as follows; section 2 discusses the review and theoretical background. Section 3 method and approach used. Section 4 presentation of the results, hypotheses tested, implications and findings. Section 5 discussion, conclusion, recommendation and future research.

LITERATURE REVIEW

Poverty

Lal (2018) studied access to finance, particularly by poor and vulnerable groups who need help, the pre-requisite, social cohesion, and poverty reduction. It also provides them with an opportunity to have access to a bank account and invest to break the chain of poverty. Providing and enhancing credit for the poor enables the development and addresses microfinance credit and integrates microenterprises and human capital through reducing poverty and financial exclusion (Fadlallah et al., 2018). The relationship between poverty and financial exclusion is based on income inequality and the implementation of policymakers based on bias and lack of programmes that enhance and broaden access to financial inclusion and lead towards addressing poverty reduction and financial

exclusion in the country (Kabakova and Plaksenkov, 2018). Muhammad Ngah and Obad (2022) stated that poverty is a major cause of financial exclusion. Whereas Náñez Alonso et al. (2022) stated poverty linked with financial exclusion. Dogan et al. (2022) indicate that the financial inclusion strategy has been affected by poverty in Turkish households. Wang and Fu (2022) show that poverty directly affects the digital financial inclusion policy in Chinese rural households.

In addition, financial exclusion is predicted to be avoided through IFIs by reducing poverty and enhancing the socio-economic conditions of the poorest and lowest income deciles. IFIs are essential in addressing socioeconomic development in an agrarian society, leading to poverty reduction and financial inclusion (Ajide, 2015). In an attempt to fulfil effective ways of addressing poverty and financial exclusion, a new delivery mechanism needs to be considered based on the need of the weaker and vulnerable societies that have been sanctioned and those individuals who lack proper financial services and such underprivileged. Low-income communities require reform to address their wants and benefit from financial inclusion and affordable financial services (Ozili, 2018).

H_1 Poverty (PO) significantly affects Financial Exclusion (FE).

Awareness of Financial Exclusion

Candiya et al. (2017) state that financial inclusion promoters observed that a lack of awareness and financial literacy has significantly contributed to financial exclusion, especially among vulnerable and lower-income earners. They are assumed to be financially illiterate. Candiya et al. (2017) reveal that a lack of financial awareness increases financial literacy, which leads to the lack of access to financial services and products, often indicating a failure by the financial institution. Abubakar (2015) argues that limited financial awareness serves as a significant barrier and hinders demand for financial services and products, especially if poor households are not comfortable or familiar with such products and services, which are classified as less significant than the demand for products that were not achieved. The study's findings confirmed that financial awareness worldwide is significantly higher while financial literacy is low. However, financial literacy is regarded among the poor and low-income earners who live in developing countries. There is a need to address the level of financial literacy by creating financial awareness of the products and services of the financial institution, which will reduce the percentage of financial exclusion and attract inclusion among the poor at the bottom of the economic pyramid.

H_2 Awareness (AW) significantly affects Financial Exclusion (FE).

Religiosity

The measurement scale of religiosity has different understandings and views of scholars and researchers in the field. Kallström et al. (2022) discussed religiosity using the Extrinsic-Intrinsic Religious Orientation. Generally, the religiosity dimension covers the commitment to the religion's strength and beliefs, encompassing participation in religious activities and congregation (Mróz and Roszak, 2022). Many studies identify that religiosity influences practices and customers' attitudes. However, empirical evidence on studies conducted on financial decisions indicates that the role of religiosity in Islamic banking and adoptions among Muslim individuals is highly significant (Mindra et al., 2022). The literature also identifies a range of Islamic religious factors that obstruct access, specifically of Muslim individuals, to financial services (Abdullah Hassan and Masron, 2016). Mohit et al. (2017) argue that financial institutions and religiosity attract and adhere to the faith and belief in the financial institution operations for both conventional and Islamic financial intermediaries. A similar study examines the two variables signifies a positive relationship (Chowdhury et al., 2022).

Furthermore, empirical research shows that a developed financial system and the inclusiveness of Muslims have a significant issue which shows the uses of the conventional institution for both macro and micro influence on the exclusion within the Muslim community (Kadirov et al., 2020). Based on a theoretical understanding, Abdul-Majeed and Alalubosa (2019) investigate that Islamic microfinance can significantly address the menace of financial exclusion in countries with majority-dominant Muslims. Muhammad and Zanna (2021) investigate the scene where the result is encouraging IFIs to adhere to their offer by attracting inclusion and addressing exclusion. Bittar (2017) mentions that Islamic microfinance is regarded as a solution to the demand for financial services needed by most Muslims in both developed and developing countries. Thus, it was generally accepted that devoid of interest on any loan provided to SMEs and other entrepreneurs to reduce poverty, attract inclusion of the majority of Muslim exclusion in financial services and promote human capital through financial demands of the Muslim community and real economic development.

H_3 Religiosity (RE) significantly affects Financial Exclusion (FE).

Attitude of Government Policy

Boitan (2016) establishes a witness under certain nations on financial exclusion due to regulatory policy and sound regulation, complete on the environmental ground that allows the banks and non-banks to magnify access and innovate financial products and services to address exclusion. The most significant areas

that require the attention of the regulator or regulatory body from the government to refine the financial infrastructure and regulation of Islamic financial products and services to design and innovate an enabling environment to address the financial exclusion. Mollah and Zaman (2015) suggested that the outcome of the international financial crisis related strong regulatory framework and transparent system of Islamic banks with necessary regulation and supervision that ensure stability, safety regulation, and standard *Shari'ah* regulation for authenticity satisfaction and suitability. Good supervisory and regulatory practices will enhance the banking industry with excessive reliance on government policy and banking undertakings. Shinkafi et al. (2020) indicate that the absence of legal, regulatory, and supervisory teams in IFIs make the *Shari'ah* tenet substandard with the mixed approaches and policies. For Islamic Banks and conventional such as the interbank, capital market and money market are considered common obstructive in the capital market, and non-existing legal support from the Central Bank, such will evade the risks associated with IFIs. Delle Foglie, et al. (2022) suggest some ways and approaches that would address and permit certain benefits to flow through the structural regulation and supervision of the IFIs. They further indicate challenges confronting IFSB in framing and developing appropriate supervisory and regulatory capital adequacy regimes in corporate governance. Asnawi et al. (2020) focused on the relevant contribution of literature towards existing laws and regulations, which provide a reflective mixture of the Shari'ah governance across the different perceptions of legal power, which typically indicates the duties and functions of supervisory and regulatory that significantly differ from one country to another. Asnawi et al. (2020) further suggest that the regulatory authorities and IFSB should synergise to design *Shari'ah* governance systems that enhance the standard and other *Shari'ah* governance activities worldwide. Consequently, there is a need to restructure Islamic banking regulations to maintain sound and strict *Shari'ah* compliance (Ardo and Saiti, 2017).

H_4 Attitude of Government Policy (AG) significantly affects Financial Exclusion (FE).

Islamic Finance Institutions (IFIs)

IFIS are considered a mediator that examines the relationship between the variables that impact the financial exclusion in northern Nigeria. Since there is a relationship between the four independent variables to financial exclusion, IFIs mediating role is considered a third explanatory variable. The variables influence IFIS in addressing financial exclusion in Northern Nigeria. Sakib et al. (2022) mention that Islam has potential benefits and strategic models set as an alternative approach that can lead to poverty reduction and addressing inequality

in the Muslim world with such techniques and strategies. The potential of Islamic institutions in achieving goals and redefining financial regulatory infrastructure enables IFIs to be considered adequate to address financial exclusion (Ayadi et al., 2015). The profit and loss sharing principles of Islamic redistributive networks of IFIs are entirely under-utilised by many Muslim countries (Storm, 2021). Todorof (2018) stated that *Shari'ah*-compliant products are limited within society. Despite the existing literature and financial exclusion and IFIs, many Muslim countries suffered from the menace of financial exclusion (Zulkhibri, 2019). The Muslim world needs to rethink the development and design of the strategic commitment to readdress the state of financial exclusion to reduce poverty and promote inclusion and sustainable development. H_5 Islamic Financial Institution (IFI) significantly affects Financial Exclusion (FE).

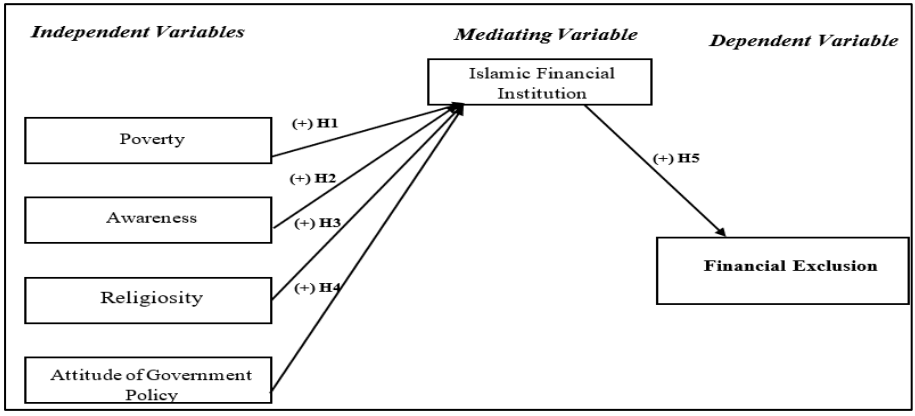


Figure 1: Research Framework
Source: Authors' own

Table 1: Research Hypotheses Code and Description
Direct Effect of constructs

Code	Description	Path
H1	Poverty (PO) significantly affects Financial Exclusion (FE)	PO → FE
H2	Awareness (AW) significantly affects Financial Exclusion (FE)	RE → FE
H3	Religiosity (RE) significantly affects Financial Exclusion (FE)	AW →FE
H4	Attitude of Government Policy (AG) significantly affects Financial Exclusion (FE)	AG → FE

Code	Description	Path
H5	Islamic Financial Institution (IFI) significantly affects Financial Exclusion (FE)	IFI → FE
Mediation effects on Islamic financial institution		
H6	Islamic Financial Institution (IFI) mediates the relationship between Poverty (PO) and Financial Exclusion (FE)	PO → IFI →FE
H7	Islamic Financial Institution (IFI) mediates the relationship between Religiosity (RE) and Financial Exclusion	RE → IFI →FE
H8	Islamic Financial Institution (IFI) mediates the relationship between Awareness (AW) and Financial Exclusion (FE)	AW → IFI→FE
H9	Islamic Financial Institution IFI mediates the relationship between Attitude of Government Policy and Financial Exclusion (FE)	AG→ IFI →FE
Comparing the mean value of the financial exclusion (FE) among the different groups of demographic analysis		
H10	The mean value of Financial Exclusion (FE) is significantly changed between male and female	
H11	The mean value of Financial Exclusion (FE) is significantly changed between age groups	
H12	The mean value of Financial Exclusion (FE) is significantly changed between education levels	
H13	The mean value of Financial Exclusion (FE) is significantly changed between household income	

Source: Authors' own

METHODOLOGY

The study employed a mixed approach to the experimental results to verify the hypotheses shown in Table 1 using SPSS 23 and AMOS 24 software packages. The analyses consist of different major parts. The first section discusses an overview, while the subsequent section discusses the general assumptions of Structural Equation Modeling (SEM). The study distributed 500 questionnaires to nine (9) branches of IFIs in the North, consisting of (Jaiz Bank, Taj Bank and Jaiz Takaful) and three universities in Northern Nigeria (Federal University, Gashua, University of Maiduguri and Bayero University Kano); 450 questionnaires were returned for analysis from January 2022 to March 2022. The latent constructs proposed met the assumption and considered unobserved variables in identifying the comparative measurement offered. The study

assessed measurement models' results using Confirmatory Factor Analysis (CFA) and confirmed the dimensionality of validity and reliability for constructive items. However, the constructs items of the descriptive outcomes and reporting part of the outcomes through the structural models evaluated the hypotheses directly. Therefore, the models consist of three significant areas of the goodness-of-fit indices, absolute fit assessment such as Chi-square, Goodness-of-fit statistic (GFI), Incremental Fit Index (IFI) and Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and (NFI), Tucker Lewis Index (TLI). Adding incremental fit measures such as Normed Fit Index Chi-square ($\chi 2$) generally can be considered of utmost significance.

The Chi-square ($\chi 2$) indicated the significant value and considered the significant p-value (Smalls et al., 2015). Goodness-of-Fit Index (GFI) is known as a non-statistical ranging index from 0 (poor fit) and 1 (perfect fit) (Ho, 2006). In other words, the Goodness-of-Fit Index (GFI) indicates that any value above 0.90 shows a good fit for the model (Leff and Hoyle, 1995). While the Root Mean Square Error of Approximation (RMSEA) is another absolute fit, it is considered lower than 0.1 to indicate a good fit (Smalls et al., 2015). However, the RMSEA value considered the range between 0.03 and 0.08 shows the better-fit model as justified by (Hair et al., 2006; Ho, 2006). The incremental fit under indices includes NFI, TLI, CFI, and IFI values ranging from 0 (poor fit) to 1 (perfect fit).

The regression and coefficients between Poverty (PO), Awareness (AW), Religiosity (RE), and Attitude of Government Policy (AG) are considered as independent variables (IVs), Islamic Financial Institutions' Performance (IFI) as Mediator (M), and Financial Exclusion (FE) as Dependent Variable (DV) were observed to determine the mediation occurrence and effect on its mediating degree. However, the four hypotheses (H10, H11, H12, and H13) mean comparing the Financial Exclusion (FE) value under ANOVA. Furthermore, the secondary data were generated from Nigerian Security Exchange Commission under Islamic Finance Development Indicator to support the survey results as indicated in Table 15, Figures 3 and 4.

Table 2: Variables and Constructs Information

Variables with Constructs	References
POVERTY (PO)	Abdul-Majeed Alaro, A. and Alalubosa, A.H. (2019). Lal, T. (2018), Park, C. Y., &
1. Islamic Financial Institutions can reduce the level of poverty in Northern Nigeria	
2. Islamic Financial Institution scheme increases the well-being of society and reduces poverty.	
3. Islamic Financial Institutions should be highly encouraged	

to fight a war against poverty 4. Islamic Financial Institutions witness a revolution in providing finance for alleviating poverty 5. I understand the legal issues and scholarly knowledge on poverty reduction	Mercado, R. (2015), Ajide, F. (2015).
AWARENESS (AW) 1. 1have a foundation knowledge of Islamic financial institutions 2. I am aware of the existence of the Islamic Financial Institutions 3. I am aware of the principles of Islamic financial institutions and Shariah Compliant 4. I understand Islamic Financial Institutions as essential for financing microcredit and SMEs 5. I am aware of the activities of Islamic financial Institutions towards Financial exclusion	Muhammad T. & Khalil Z. (2021), Candiya Bongomin, G.O., Munene, J.C., Ntayi, J.M. and Malinga, C.A. (2017),
RELIGIOSITY (RE) 1. I am very mindful of religion and my duties as a Muslim 2. I strictly adhered to my obligatory duties as a Muslim, in line with Shariah-compliant principles 3. I always like to participate in Shariah-compliant products and activities of Islamic Financial Institution 4. I used to seek Islamic religion knowledge to understand religion better 5. I am planning to use Islamic microfinance as soon as its start operations in my locality 6. I am planning to use Islamic Microfinance for SMEs business promotion 7. I am planning to use Islamic Microfinance as Shariah-compliant because it renders the best services in microcredit institutions religiously Shariah compliant 8. Islamic Microfinance is the best financial system for microcredit and poverty Alleviation	Muhammad T., Dauda S. A & Mamman D (2019), Echchabi, A., & Aziz, H. A. (2012). Lehrer, E. L. (2004).
ATTITUDE OF GOVERNMENT POLICY (AG) 1. Islamic Financial Institutions is good in enhancing entrepreneurship and business arena 2. Islamic Financial Institution enhances access to finance 3. Nigerian Government should provide more micro-financing policy through Islamic financial institution 4. All Nigerian Government's Credit policy should involve	Muhammad T. Duku, M. & Yakasai U.M (2019), Zulkhibri, M. (2019), Souiden, N.

Islamic financial institutions 5. I prefer Islamic Financial Institutions than Conventional Institutions 6. I prefer Islamic financing compared to conventional financing project 7. Islamic bank provides essential services to customers 8. I don't care about using any of the Financial Services (Both Islamic Financial Institutions and Conventional institutions	and Rani, M. (2015)
ISLAMIC FINANCIAL INSTITUTION PERFORMANCE (IFI) 1. Islamic Financial Institution and motivate people to participate 2. I can agree to partner with a fully Shariah compliant financial institution due to the interest-free system 3. I am aware of the religious view based on Islamic transaction 4. I prefer to participate in enhancing sustainable growth and addressing poverty through microfinance for the SMEs 5. I can relate Islamic Financial Institution and other financial transactions through technological driven	Muhammad T., Dauda S. A & Mamman D (2019), Ardo, A. A., & Saiti, B. (2017). Ahmed, H., Mohieldin, M., Verbeek, J., & Aboulmagd, F. (2015).
FINANCIAL EXCLUSION (FE) 1. I am aware that there are a lot of people financially excluded in Northern Nigeria 2. I have information feedback on poverty escalation 3. Islamic financial institution users are satisfied with the preference services for inclusiveness 4. Religious contribute significantly to the financial exclusion in Northern Nigeria 5. Several policies adhere by the Government to address financial exclusion.	Asnawi, N., Sukoco, B.M. and Fanani, M.A. (2020) Beckzada, M., & Fouad, J. M. (2018), Boitan, I. A. (2016), Evans, O. (2016).

Source: Authors' own

We report the variables used in the research-based constructs; the first variables of **Poverty (PO)** consist of five (5) contracts extracted from (Abdul-Majeed Alaro and Alalubosa, 2019); (Lal, 2018), Park and Mercado, 2015), Ajide, 2015). The second variable of **Awareness (AW)** carries five (5) constructs and is also derived from (Candiya et al., 2017); (Muhammad and Khalil, 2021). Subsequently, the **Religiosity (RE)** have eight (8) constructs which also

extracted from these references (Muhammad et al., 2019), (Echchabi, and Aziz, 2012), (Lehrer, 2004). Further, the **Attitude of Government Policy** (**AG)** has eight (8) constructs that have been derived from these references (Muhammad et al., 2019), (Zulkhibri, 2019), (Souiden and Rani, 2015). The **Islamic Financial Institutions** variables also have **five (5) constructs and are extracted from these references** (Muhammad et al., 2019), (Ardo and Saiti, 2017); (Ahmed et al., 2015). Finally, the **Financial Exclusion (FE)** contains five (5) constructs with these references (Beckzada and Fouad, 2018); (Boitan, 2016), (Evans, 2016).

UNIVARIATE OUTLIERS

The univariate technique detects the histograms and plot box whereby every single variable is the study variable to check and justify the standardized (z) score. Hair et al. (1998) recommended that extreme observation evidence every sample size exceeded 200 above for absolute (z), greater than 4, and the case is shown in Table 3.

Table 3: Result of Univariate Outlier based on Standardized values

Construct Item Standardised value (z

Construct	*Item*	*Standardised value (z-Score)*	
		Lower Bound	*Upper Bound*
Poverty (PO)	PO1	-2.691	1.072
	PO2	-2.861	1.189
	PO3	-2.941	1.247
	PO4	-3.082	1.078
	PO5	-3.190	1.096
Awareness (AW)	AW1	-3.172	0.958
	AW2	-3.483	1.095
	AW3	-3.483	0.977
Religiosity (RE)	RE1	-3.846	0.779
	RE2	-3.647	0.948
	RE3	-3.626	1.001
	RE4	-3.683	0.735
	RE5	-2.991	1.008
	RE6	-2.925	1.081
	RE7	-3.132	1.044
	RE8	-2.736	0.975
Attitude of Government Policy (AG)	AG1	-2.772	1.200
	AG2	-3.279	1.051
	AG3	-3.197	1.053
	AG5	-3.427	0.923
	AG6	-3.435	0.952
	AG7	-3.138	0.991
	AG8	-2.645	1.153
Islamic Financial Institutions Performance (IFI)	IFI1	-3.540	1.028
	IFI2	-3.421	0.977
	IFI3	-3.518	0.967
	IFI4	-3.144	1.088
	IFI5	-2.918	1.083
Financial Exclusion (FE)	FE1	-2.855	1.044
	FE2	-3.239	1.155
	FE3	-3.068	1.066
	FE4	-3.010	0.997
	FE5	-2.935	1.109

Source: Authors' own

Table 3 shows the result of the standardized (z) scores of the variables ranged in the research from -3.846 to 1.247, indicating that none of the results exceeded the threshold of 4. This shows there are no univariate outliers between the variables as indicated.

ASSESSMENT OF DATA NORMALITY

The normality evaluation has been piloted, and maximum likelihood approximation is conducted to examine the distribution of data normality based on construct items. Table 4 indicates and validates the accurate outcomes and normality of variables factors in the study model.

Table 4: Assessment of Normality for Measurement Model

Construct	*Item*	*Skewness*	*CR*	*Kurtosis*	*CR*
Poverty (PO)	PO1	-1.024	-7.825	0.584	2.229
	PO2	-0.969	-7.399	0.812	3.103
	PO3	-0.758	-5.786	0.363	1.385
	PO4	-0.972	-7.427	0.754	2.879
	PO5	-0.887	-6.777	0.519	1.982
Awareness (AW)	AW1	-1.148	-8.769	1.010	3.858
	AW2	-1.167	-8.917	1.847	7.055
	AW3	-1.087	-8.300	1.250	4.773
Religiosity (RE)	RE1	-1.692	-12.921	3.421	13.063
	RE2	-1.180	-9.011	1.605	6.128
	RE3	-0.982	-7.498	0.880	3.360
	RE4	-1.776	-15.561	3.571	13.63
	RE5	-1.171	-8.943	1.239	4.730
	RE6	-0.999	-7.631	0.675	2.577
	RE7	-0.980	-8.684	0.719	2.745
	RE8	-1.137	-9.159	0.860	3.284
Attitude of Government Policy (AG)	AG1	-0.940	-7.182	0.649	2.480
	AG2	-0.952	-7.275	0.516	1.971
	AG3	-1.092	-8.339	1.164	4.445
	AG5	-1.345	-10.273	1.887	7.205
	AG6	-1.285	-9.814	1.696	6.478
	AG7	-1.160	-8.858	1.112	4.246
	AG8	-0.848	-6.473	0.226	0.865
Islamic financial Institution (IFI)	IFI1	-1.273	-9.719	2.116	8.081
	IFI2	-1.114	-8.507	1.258	4.803
	IFI3	-1.000	-7.639	0.839	3.203
	IFI4	-0.963	-7.355	0.855	3.264
	IFI5	-0.920	-7.028	0.671	2.562
Financial Exclusion (FE)	FE1	-1.229	-9.385	1.448	5.530
	FE2	-1.109	-8.470	1.513	5.778
	FE3	-0.964	-7.362	0.617	2.358
	FE4	-0.880	-6724	0.431	1.647
	FE5	-1.199	-9.159	1.287	4.913

Source: Authors' own

The result of the assessment of the normality shows that the skewness and kurtosis of all items and the variables are placed among ±2 and ±9, respectively. However, the data set of all items constructs was well-modelled by a normal distribution. Table 5 shows that the skewness ranged from -0.848 to -1.776, and kurtosis ranged from 0.226 to 3.571.

Demographic Analysis

Table 5: Demographic and Frequency percentile Sample Profile

Group	Frequency	Percentage (%)
Gender		
Male	213	47.4
Female	237	52.6
Age		
18-30	164	37
31-40	117	26
41-60	98	21
61-Above	72	16
Education		
Primary	153	34
Secondary	143	31.7
Degree	94	21.4
Master –above	58	12.9
Household-income monthly		
1000 -10,000 (2.8 -28 US Dollar)	126	28
11,000 – 50,000 (30 -139 US Dollar)	100	22.5
51,000 – 100,000 (142 -278 US Dollar)	140	31
110,000 – Above (306 US Dollar)	83	18.5

450 respondents were collected, whereby (47.4 per cent) of responses were received from male respondents and (52.6 per cent) from female respondents. The age of the respondents was also identified. As a result, 37 per cent of the respondents are between 30 and below years old, 26 per cent are above the range of 31- 40 years old, 21 per cent of the respondents are between 41-60 years old, and 16 per cent of the respondents are 61 years old and above. Furthermore, the respondents were also asked to indicate their educational qualifications. As a result, 34 per cent of the respondents stated that they have a primary certificate, 31.7 per cent have a secondary certificate, 21.4 per cent have a bachelor's degree, and 12.9 per cent have Masters and/or PhD qualifications.

The study also asked for the monthly income of the household that indicates 28 per cent of them obtained monthly, which is equivalent to USD 2.8 - 28, 22.5 per cent obtained 11,000-50,000 monthly, and that is equivalent to USD 30 -139, 31 per cent, which is equal to USD 142 - 278, and 18.5 per cent obtained and above Naira.

Reliability and Validity

Reliability accessed Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). Table 6 represents the result of validity and Cronbach's alpha for the iterative model under CFA.

Table 6: Cronbach and Convergent validity for Measurement Model

Construct Item	Cronbach Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Poverty (PO)	**0.753**	**0.757**	**0.618**
Awareness (AW)	**0.700**	**0.698**	**0.651**
Religiosity (RE)	**0.825**	**0.799**	**0.604**
Attitude of Government Policy (AG)	**0.801**	**0.802**	**0.604**
Islamic Financial Institution (IFI)	**0.725**	**0.725**	**0.587**
Financial Exclusion (FE)	**0.718**	**0.720**	**0.582**

"[a]: Average Variance Extracted = above 0.5 [b]: Composite reliability =0.7 [c]: denotes for discarded item due to insufficient factor loading below cut off 0.5." [d]; Cronbach alpha=>0.7

Table 6 shows that the AVE, which reflects the overall variance in the indicators of Poverty (PO), Awareness (AW), Religiosity (RE), and Attitude of Government Policy (AG), Islamic Financial Institution's performance (IFI) and Financial Exclusion (FE) are in between 0.618, and 0.582, respectively. All these values are above the cut-off of 0.5, as Nunnally and Bernstein (1994) indicated. The composite reliability value of the construct indicators indicates that the latent construct of Poverty (PO), Awareness (AW), Religiosity (RE), Attitude of Government Policy (AG), Islamic Financial Institution's Performance (IFI), and Financial Exclusion (FE) are in between 0.698 and 0.802 respectively. These values exceeded the recommended value of 0.6 for social science (Bagozzi and Yi, 1988). The Cronbach's alpha value, which explains the degree to which a measure is error-free, which are 0.700 and 0.825 for Poverty (PO), Awareness (AW), Religiosity (RE), Attitude of Government Policy (AG), Islamic Financial Institution's Performance (IFI) and Financial Exclusion (FE), respectively. All these values have met the threshold of 0.7 as only Awareness is at the near point with 0.698, as Farrell (2010) suggested. Therefore, the assumption of Cronbach's alpha for all constructs was error-free and sufficiently achieved.

MEASUREMENT MODEL (CFA)

The first stage of SEM considered the operationalization of item constructs, which is very important. The subsequent procedure of confirming correctness through numerous views of scholars that have chosen a specific scale to confirm the theoretical accuracy and exactitude of the study.

However, the current research consists of 33 items that are used to measure six constructs, namely Poverty (PO), Awareness (AW), Religiosity (RE), Attitude of Government Policy (AG), Islamic Financial Institution (IFI), and Financial Exclusion (FE). The CFA model, with 33 items, is reported below.

Standardized loadings of the Model Items

Table 7 indicates the deleted items from the model and recalculated loading factor remaining items.

Table 7: Initial Standardized factor loadings of the Items in CFA Model

Construct	Item	Initial Factor Loading	Item Deleted	Second Factor Loading
Poverty (PO)	PO1	0.629		0.615
	PO2	0.662		0.685
	PO3	0.668		0.707
	PO4	0.650		0.546
	PO5	0.536		0.537
Awareness (AW)	AW1	0.576		0.775
	AW2	0.597		0.605
	AW3	0.698		0.573
	AW4	~~0.467~~	Deleted	
	AW5	~~0.410~~	Deleted	
Religiosity (RE)	RE1	0.603		0.580
	RE2	0.580		0.560
	RE3	0.624		0.575
	RE4	0.579		0.503
	RE5	0.704		0.672
	RE6	0.688		0.656
	RE7	0.676		0.657
	RE8	0.650		0.634
Attitude of Government Policy (AG)	AG1	0.769		0.537
	AG2	0.605		0.567
	AG3	0.576		0.650
	AG4	~~0.118~~	Deleted	
	AG5	0.628		0.594
	AG6	0.622		0.607
	AG7	0.556		0.627
	AG8	0.572		0.650
Islamic Financial Institution (IFI)	IFI1	0.633		0.635
	IFI2	0.533		0.534
	IFI3	0.596		0.595
	IFI4	0.559		0.557
	IFI5	0.618		0.616
Financial Exclusion (FE)	FE1	0.615		0.626
	FE2	0.685		0.624
	FE3	0.708		0.554
	FE4	0.545		0.574
	FE5	0.537		0.536

As indicated in Table 8, the results of the two evaluations indicate the factor loading model. In the first standardized loadings model, the two identified factors with less value as shown above (AW4, AW5, and AG4) showed 0.46, 0.410, and 0.118 while AW4, AW5, and AG4 were negatively indicated. The construct values removed were below 0.5, while the other items were deleted for the model fitness. The revised model with 33 remaining items was again tested to ensure whether the factor structure remained stable. The second standardized factor loadings for all items were considered with 36 items, and the three were deleted due to the low factor loading.

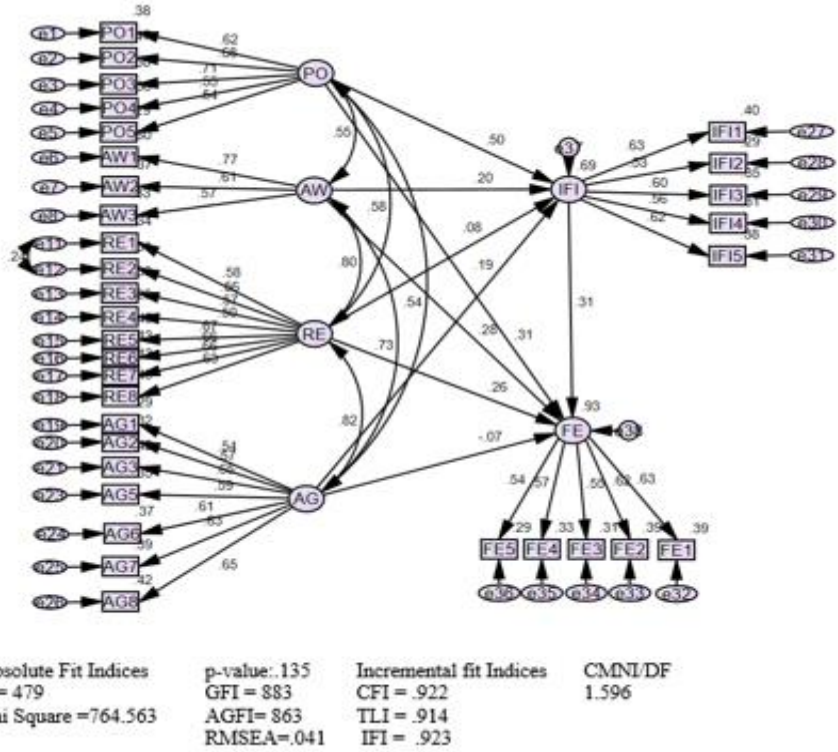


Figure 2: Measurement Model

Table 8: Direct Effect of The Hypotheses Constructs

Unstandardized			Standardized	Critical ratio		
Path	Estimate	Estimate		ratio		
	Estimate	S.E	Beta	(c.r)	P-value	Hypothesis Result
PO->IFI	0.421	0.075	0.495***	5.606	0.000	H1) Supported
AW->IFI	0.149	0.065	0.201**	2.292	0.02	H2) Supported
RE->IFI	0.092	0.167	0.083	0.553	0.580	H3) Rejected
AG->IFI	0.194	0.085	0.189*	2.282	0.028	H4) Supported
IFI->FE	0.363	0.140	0.314**	2.597	0.009	H5) Supported

Poverty (PO) significantly affects Islamic Financial Institution (IFI)

The proposed model and the hypothesis of the research model show that the construct of Poverty (PO) positively affects Islamic Financial Institutions' Performance (IFI). The results estimate the p-values of Poverty (PO) in predicting Islamic Financial Institution's Performance (IFI) is 5.606 and 0.000; however, the regression weight for Poverty (PO) in the prediction of Islamic Financial Institution's Performance (IFI) is significantly different from zero at the two-tailed level of 0.000. Thus, H1 is supported, and the hypothesis is positive and statistically significant.

Neaime and Gaysset (2018) indicate the effective instrument of the financial sector through addressing poverty, which reduces and alleviates poverty. The system's efficiency was in different ways of the performance of Islamic financial institutions, which generally increased access to financial services and inclusive of vulnerable Muslims. The research employed different variables to test the respective categories, such as the Poverty, Banking sector, Insurance, Bond market, and Stock market. The study used central bank assets, deposit money, and overhead variables. The study evaluates the relationship between poverty and financial institutions, which purely depends on the performance of financial institutions in poverty. Chen and Sivakumar (2021) indicate the role of financial institutions in promoting economic development by analyzing poverty within developed and developing countries. However, some indicate the impact of financial institutions on poverty as an advanced strategy based on the performance of such IFIS based on Islamic macro or micro-

financial institutions. The findings indicate that IFIs (micro and macro) are an instrument of fighting poverty as it is classified as poverty remains a concern around the globe.

Awareness (AW) significantly affects Islamic Financial Institution (IFI)

The proposed model and hypothesis of the research model show that Awareness (AW) has a positive effect on Islamic Financial Institution's Performance (IFI) in predicting Islamic Financial Institution's Performance (IFI) at 2.292 and 0.02, respectively. Thus, the probability of getting a critical ratio as large as 2.292 in absolute value is 0.02. As shown in Table 10.4, the results indicated a significant relationship between the Awareness (AW) and Islamic Financial Institution's Performance (IFI); $\beta = 0.201$, C.R = 2.292, and p=0.02. Thus, H2 is supported, and the hypothesis is positive and statistically significant.

Candiya et al. (2017) reviewed the perception and attitude of IFI's performance based on financial products and services. The study employed a survey for data analysis based on a comparison between conventional financial services and Islamic financial products. The research found that awareness and religion were essential factors of Islamic financial institutions, which led to customers' preferences in selecting financial institutions. The study employed several variables: quality services, bank reputation, awareness, pricing, IFIs' performance and conventional performance of products and services. However, the finding justifies and mitigate the management's complication in deploying knowledge based on financial products and service of Islamic financial institution (Nawi et al., 2013).

Religiosity (RE) significantly affects Islamic Financial Institution's (IFI)

The hypothesis shows that the results indicate no significant relationship between Religiosity (RE) and Islamic Financial Institution's Performance (IFI); $\beta = 0.083$, C.R = 0.553, p= 0.580. Thus, H3 is rejected.

The study investigates the purpose of structuring the social purpose of IFIs, which interrelated the reasons with religious obligation as an exemplary position as financial intermediaries. It is also evidently debated whether IFIs' structured social purpose and principles based on equity redistribution are considered the collective religious obligation and respective position of financial institutions. The study attempts to generate an efficient framework for the IFI by using the conceptualization of *Maslah* as proposed by contemporary scholars, the guidelines related to social responsibility that embellish and complement IFIs' policies based on religiosity as a claim to be the same (Jusoh and Ibrahim, 2020).

Attitude of Government Policy (AG) significantly affects IFI

The proposed model and hypothesis of the research model show that the Attitude of Government Policy (AG) positively affects Islamic Financial Institutions' Performance (IFI) at 2.282 and 0.02, respectively. It means the probability of getting a critical ratio is as large as 2.282 in absolute value 0.02. In other words, the regression weight for Attitude of Government Policy (AG) in the prediction of Islamic Financial Institutions' Performance (IFI) is significantly different from zero at the 0.02 level (two-tailed). Thus, H4 is supported. Further, the standardized estimate Beta is 0.189, indicating a positive relationship. It means when the Attitude of Government Policy (AG) increases by one (1) standard deviation, Islamic Financial Institution's Performance (IFI) increases by 0.189 standard deviations.

Despite different researcher's efforts in studying the effectiveness of Financial Institutions (macro and micro) and their impact on society, various opportunities were created for the poor and less privileged and vulnerable communities to curtail and reduce the level of poverty through deploying IFIs through government policies by promoting inclusion in Nigeria (Mustapha et al., 2020).

Islamic Financial Institution (IFI) significantly affects Financial Exclusion (FE)

The proposed model and hypothesis of the research model show that Islamic Financial Institution's Performance (IFI) positively affects Financial Exclusion (FE) are 2.597 and 0.009, respectively. It means that the probability of getting a critical ratio as large as 2.597 in absolute value is 0.009. In other words, the regression weight for Islamic Financial Institution's Performance (IFI) in the predicting of Financial Exclusion (FE) is significantly different from zero at the 0.009 level (two-tailed). Thus, H5 is supported. Further, the standardized estimate Beta was 0.314, indicating a positive relationship. It means that when the Islamic Financial Institution's Performance (IFI) increases by one (1) standard deviation, Financial Exclusion (FE) increases by 0.314 standard deviations.

Kurunkatil (2019) mentions that IFIs contribute immensely to financial inclusion and reduction of poverty alleviation, thus strengthening and promoting the growth and resilience of financial institutions. The Islamic financial system has tremendously helped tackle financial exclusion in Muslim countries. The study examines IFIs that promote financial inclusion and financial services in India, a minority Muslim country. The study employed discriminant analysis and data collected from 1000 individuals and customers in conventional and Islamic banks. The research indicates discriminating factors for both Islamic and

conventional banks. The findings suggest that IFIs be promoted directly or indirectly alternative finance and may lead to higher financial inclusion and tackling financial exclusion in Muslim minorities in India.

Table 9: Mediation Effect

		DV=Financial Exclusion (FE), M=Islamic Financial Institution's Performance (IFI)							
Independent Variables IVs	**Variables IV**	Total Effect	Direct Effect	Indirect Effect	Effect of Mediation	Mediation Path	Mediation Effect	Degree of Mediation	Hypothesis result
	Poverty	0.468 (sig:0.001)	0.312 (sig: 0.03)	0.156 (sig: 0.03)	0.314 (sig 0.009)	PO->IFI->FE	YES	Partial	Supported H6
	Awareness	0.343 (Sig: 009)	0.280 (sig:0.04)	0.152 (sig:0.03)	0.314 (sig 0.009)	AW->IFI->FE	YES	Partial	Supported H7
	Religiosity	0.181 (sig: 0.062)	0.261 (sig:0.02)	0.398 (sig:0.026)	0.314 (sig:0.009)	RE->IFI->FE	YES	Direct	Supported H8
	Attitude of Government Policy	-0.007 (sig 0.891)	-0.66 (sig: 0.687)	0.231 (sig:0.04)	0.314 (sig:0.009)	AG->IFI->FE	YES	FULL	Supported H9

As shown in Table 9, Islamic Financial Institution's Performance (IFI) mediates the effects of Poverty (PO), Awareness (AW), Religiosity (RE), and Attitude of Government Policy (AG) on Financial Exclusion (FE). Thus, hypotheses H6, H7, H8, and H9 are supported. The mediation analysis results are discussed as follows:

H6 Islamic Financial Institution's Performance (IFI) mediates the relationship between Poverty (PO) and Financial Exclusion (FE)

The result shows that there is a significant relationship between Poverty (PO) and Financial Exclusion (FE) in the absence of Islamic Financial Institution's Performance (IFI) with a standardized total effect of 0.468 and a p-value of 0.001. The total effect of Poverty (PO) as an independent variable without the mediation of Islamic Financial Institution's Performance (IFI) as a mediator at a significant level of <0.05. This relation was consistent significantly

after the mediation of Islamic Financial Institution's Performance (IFI) into the model with a standardized effect of 0.468 and a p-value of 0.001. Thus, the direct effect of Poverty (PO) as an independent variable on Financial Exclusion (FE) as a mediator was statistically significant.

As described in Table 9, the effect of Poverty (PO) as an independent variable on Islamic Financial Institution's Performance (IFI) with standardized effects of 0.468 and its mediation was statistically significant at the level of 0.001 (path b). Meanwhile, Islamic Financial Institution's Performance (IFI) as a mediation on Financial Exclusion (FE) as a dependent variable (path c) loaded the standardized effects of 0.314 with a statistically significant level at 0.009.

This result shows that the Islamic Financial Institution's Performance (IFI) mediates the relationship between Poverty (PO) and Financial Exclusion (FE). The degree of mediation was partial since, with or without mediation was found to be statistically significant. In the above scenario, the phenomenon supported hypothesis H6.

H7 Islamic Financial Institution's Performance (IFI) mediates the relationship between Awareness (AW) and Financial Exclusion (FE)

The result in Table 9 indicates that there is a significant relationship between Awareness (AW) and Financial Exclusion (FE) in the absence of Islamic Financial Institution Performance (IFI), with a standardized total effect of 0.343 and a p-value of 0.009. However, the total effect of Awareness (AW) as an independent variable on Financial Exclusion (FE) as a dependent variable without Islamic Financial Institution's Performance (IFI) as a mediator considered the total effect as statistically significant at the level of <0.05.

This relation is considered mediation occurred as an Islamic Financial Institution's Performance (IFI), the standardized model's direct effect of 0.280 and p-value of 0.04. The direct effect of Awareness (AW) as an independent variable on Financial Exclusion (FE) as the dependent variable with the mediation of Islamic Financial Institution's Performance (IFI) was statistically significant at the level of 0.04.

As described in Table 9, Awareness (AW) as an independent variable of Islamic Financial Institution's Performance (IFI) as a mediator, which is (path b), was statistically significant with a standardized effect of 0.280. In contrast, the effect of IFI Performance as a mediation on Financial Exclusion (FE) as a dependent variable (path c) was statistically significant at the level of 0.009 with a standardized effect of 0.314.

The above result indicated that the Islamic Financial Institution's Performance (IFI) mediates the relationship between Awareness (AW) and Financial Exclusion (FE), and the degree of mediation was partial since path as

the direct effect was found to be significant, which supported hypothesis H7. Furthermore, the result shows that Awareness (AW) has a significant indirect effect which is considered a positive effect on Financial Exclusion (FE) through Islamic Financial Institution's Performance (IFI) with a p-value of less than 0.04 and standardized effects of 0.152.

H8) Islamic Financial Institution's Performance (IFI) mediates the relationship between Religiosity (RE) and Financial Exclusion (FE)

Table 9 indicates that there is a significant relationship between Religiosity (RE) and Financial Exclusion (FE) without the mediation of Islamic Financial Institution Performance (IFI), with a standardized total effect of 0.181 and a p-value of 0.062. The total effect of Religiosity (RE) as an independent variable without the mediation of Islamic Financial Institution's Performance (IFI) is statistically insignificant at 0.062.

This relationship is insignificant after the Islamic Financial Institution's Performance (IFI) mediation with a standardized effect of 0.181 and a p-value of 0.062. Thus, the indirect effect of the independent variable on the dependent variable through the mediation of the Islamic Financial Institution's Performance (IFI) is statistically significant. As discussed above, the effects of Religiosity (RE) as an independent variable on Financial Exclusion as path c is considered significant at 0.009 with a standardized effect of 0.314.

Meanwhile, the effects of Islamic Financial Institution's Performance (IFI) as a mediator on Financial Exclusion (FE) as a dependent variable (path c) is statistically significant at 0.009 level with the standardized effects of 0.314.

The result shows that Islamic Financial Institution's Performance (IFI) mediates the relationship between Religiosity (RE) and Financial Exclusion (FE), and the degree of mediation was direct since path a of the direct effect is significant. The phenomenon supported hypothesis H8. Further, the result revealed that Religiosity (RE) had a significant indirect positive effect on Financial Exclusion (FE) through Islamic Financial Institution's Performance (IFI) with a standardized indirect effect of 0.398 and a p-value of 0.02.

H9) Islamic Financial Institution's Performance (IFI) mediates the relationship between the Attitude of Government Policy (AG) and Financial Exclusion (FE)

Table 9 indicates that there is a significant relationship between the Attitude of Government Policy (AG) and Financial Exclusion (FE) without the mediation of the Islamic Financial Institution's Performance (IFI), with a standardized total effect of -0.007 and p-value of 0.891. The total effect of

Attitude of Government Policy (AG) as an independent variable without the mediation of Islamic Financial Institution's Performance (IFI) is statistically insignificant at <0.891.

This relationship has become significant after the mediation of Islamic Financial Institution's Performance (IFI) with a standardized effect of 0.231 and a p-value of 0.04. Thus, the indirect effect of the independent variable on the dependent variable through the mediation of the Islamic Financial Institution's Performance (IFI) is statistically significant. As discussed above, the effects of Attitude of Government Policy (AG) as an independent variable on Financial Exclusion (FE) as path c is considered insignificant.

Moreover, the effects of Islamic Financial Institution's Performance (IFI) as a mediator on Financial Exclusion (FE) as a dependent variable (path c) are statistically significant at 0.009 level with the standardized effects of 0.314. The result shows that Islamic Financial Institution's Performance (IFI) mediates the relationship between the Attitude of Government Policy (AG) and Financial Exclusion (FE), and the degree of mediation was full since path a of the direct effect is insignificant. The phenomenon supported hypothesis H9. Further, the result revealed that the Attitude of Government Policy (AG) had a significant indirect positive effect on Financial Exclusion (FE) through Islamic Financial Institution's Performance (IFI) with a standardized indirect effect of 0.231.

Therefore, the results analyzed show that Islamic Financial Institution's Performance (IFI) has fully mediated the relationship between the Attitude of Government Policy (AG) and Financial Exclusion (FE). Religiosity (RE) has a direct Mediated relationship with Financial Exclusion (FE). Meanwhile, there is partial mediation between Awareness (AW) and Financial Exclusion (FE), and so is a partial mediation relationship between Poverty (PO) and Financial Exclusion (FE).

Comparative Tests

In this section, the two comparative parametric tests are examined, thus, identifying One-Way ANOVA and Independent Sample T-test for the mean difference of Financial Exclusion (FE) between the demographic variables in the below sub-section of the study, which highlight and discuss the comparative results test for the hypothesis's discoveries, and that consists of H10, H11, H12, and H13, respectively.

Independent Sample T-Test

Independent Sample T-test was examined to identify the mean difference of Financial Exclusion (FE) between males and females of the hypothesis (H11). Therefore, conducting the T-test determined whether the two populations are

variances and have equal variance. However, Levene's assumption was conducted to determine whether the T-test resolved the homogeneity of variances. The assumption that the p-value above >0.05 level indicates the difference in the sample variances likely to occur based on random sampling from the equal population variances. As the null hypothesis is accepted, it shows the test is non-significant and does not meet the equal assumption of the test. Conversely, if the test rejects the null hypothesis, the variance assumption is equally variance and assumed.

Homogeneity of Variance Levene's Test

Table 11 indicates how closely the variation of the mean difference tests Levene's test whether the variances of two different samples were approximately equal and same, and insignificant, which is considered to be greater than 0.05; at. At that point, equal variances are assumed.

Table 10: Group of Gender and Financial Exclusion (FE) based on Levene's test

Gender	Levene's test equality of variance
F- statistic	0.000
P-value	0.990
Equal Variances Assumed	Yes (as p-value is insignificant as null rejected)

Table 10, shows the Levene's test on gender and Financial Exclusion (FE) that indicated the equality of variance assumed as p-value was 0.990 which is greater than 0.05 at an insignificant level.

Table 11: Independent Sample T-Test

Gender	N	Financial Exclusion(FE)
Male	(213)	3.690
Female	(237)	3.730
Mean Differences		-0.40
T-statistic		-0.382
Degree of Freedom (df)		450
Significant Difference		0.990
Hypothesis Status		Rejected (H10)

*<0.05, **<0.01, ***<0.001

The results in Table 11 of the independent sample T-test indicated that the mean value of Financial Exclusion (FE), which shows the means of the male and female are 3.690 and 3.730, respectively. The mean difference of -0.40, which was not statistically significant, also indicates the p-value is higher than the value of 0.05 and the t-statistic at -0.382 with the degree of freedom (df) 450 and the p-value of 0.990. Therefore, it can be presumed that the Financial Exclusion (FE) for females is considerable compared to males, which was slightly lower, and hypothesis H10 was rejected, and equal variance was assumed.

Table 12: Levene's test for equality of variance testing

Groups	F	P-value	Status of Equal Variance
Age	0.011	0.915	Yes
Education	0.031	0.860	Yes
Monthly Income	0.029	0.882	Yes

*<0.05 **<0.01 ***<0.001

As indicated in Table 12, the results show equal variance assumption for three respective variables ages, education and monthly income, as their Levene's test p-values are all considered greater than 0.05. However, the One-Way ANOVA test was conducted to examine and evaluate the mean difference of Financial Exclusion (FE) amongst the groups, as all considered the equality assumptions.

Table 13 shows the One-Way ANOVA, Brown-Forsythe, and Welch ANOVA tests to examine the Financial Exclusion (FE) mean differences between the three groups.

Table 13: Results of One Way, ANOVA Tests

	One way ANOVA					
	F	**DF**	**p-value**	**F**	**DF**	**Decision**
Age	0.897	450	0.466	1.225	4	No (H15) R
Education	0.119	450	0.976	0.115	4	No (H16) R
Monthly Income	0.239	450	0.882	0.204	4	No (H17) R

*<0.05, **<0.01 ***<0.001 ***(R) Rejected***

As shown above, in Table 13, the One-Way ANOVA shows that the mean value of Financial Exclusion (FE) is insignificant in terms of change between age, education, and monthly income groups, as their respective p-values are above the significant level at 0.05. The results and hypotheses H11, H12, and

H13 are rejected as indicated above; therefore, the equal variance assumption is approximately met and assumed.

However, the ANOVA results are also not significantly changed between the groups and further indicated the equal variance assumption as proven with the One-Way ANOVA with greater than 0.05 significant levels. In this case, there is no need to run a post-doc as the equal variance assumptions are assumed and met.

The mean value of Financial Exclusion (IFI) is significantly changed between Males and Females.

The hypothesis in terms of mean value, considering the mean of the Financial Exclusion (FE) between the groups of the demographical settings variables, in the research model hypothesized that there is a significant relationship between that considered change in value between the Financial Exclusion (FE) under gender groups (male and female). However, the Independent Sample T-test results indicated the value of the mean of Financial Exclusion (FE) for females and males are 3.730 and 3.690, respectively. The mean difference was -0.400, which is not considered statistically significant due to the p-value above the significant level of >0.05 and p-value= 0.990. Therefore, the mean value of the Financial Exclusion (FE) for males was slightly lower than for females. However, the difference is small and is not statistically significant, and hypothesis H10 is rejected. The gender means groups of Financial Exclusion (FE) have no significant effect on Financial Exclusion.

The mean value of Financial Exclusion (FE) significantly changed between the age groups.

The mean value of the hypothesis in terms comparing the value of the mean of the Financial Exclusion (FE) between the groups in the demographic variables, the proposed model indicated the hypothesis has a significant positive relationship that has been changed in the value between Financial Exclusion (FE) and Age groups. However, the prediction was not considered significant to change between the age groups. One ANOVA test revealed no significant mean value of Financial Exclusion (FE), as shown, whereby the p-value is greater than the significant level of >0.05 with 0.305. Therefore, the predicted hypothesis of H11 is rejected. This indicated that the mean age groups have no effect and are unrelated to the Financial Exclusion.

The mean value of Financial Exclusion (FE) significantly changes between Education levels.

The mean value of the hypothesis in terms comparing the value of the mean of the Financial Exclusion (FE) between the groups in the demographic variables, the proposed model indicated the hypothesis has a significant positive relationship that is changed in the value between Financial Exclusion (FE) and education groups. However, the prediction was not considered significant as to change between the education groups. One ANOVA test revealed no significant mean value of Financial Exclusion (FE), as shown, whereby the p-value is greater than the significant level of >0.05 with 0.977. Therefore, the predicted hypothesis of H12 is rejected. This indicated that the mean education groups have no effect and are unrelated to the Financial Exclusion.

The mean value of Financial Exclusion (FE) is significantly changed between Household incomes.

The mean value of the hypothesis in terms of comparing the value of the mean of the Financial Exclusion (FE) between the groups in the demographic variables of the proposed model indicated that the hypothesis has a significant positive relationship that is changed in the value between Financial Exclusion (FE) and household income. However, the prediction needs to be considered significant regarding the change in household incomes. One ANOVA test revealed no significant mean value of Financial Exclusion (FE), whereby the p-value is greater than the significant level of >0.05 with 0.936. Therefore, the predicted hypothesis of H13 is rejected. This indicated that the mean household income has no effect and is unrelated to the Financial Exclusion.

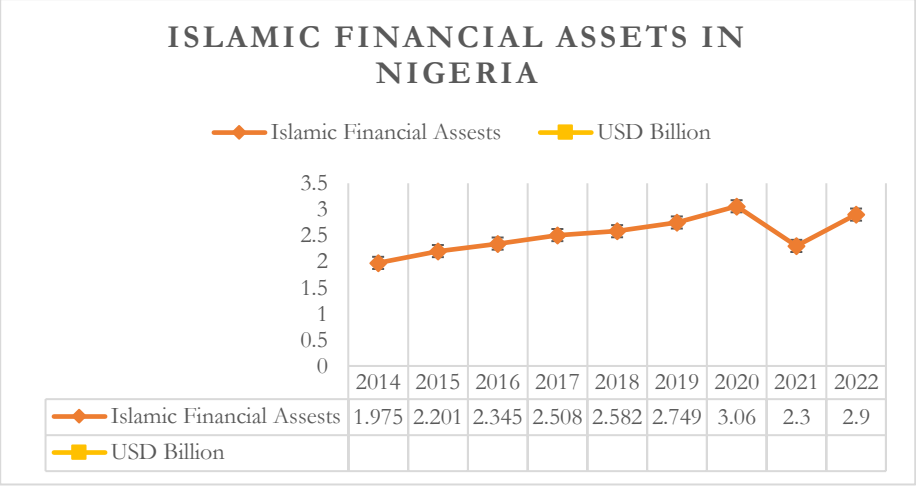
As shown above, the One-Way ANOVA shows that the mean value of Financial Exclusion (FE) was insignificant in terms of change between age, education, and monthly income groups, as their respective p-values are above the significant level at 0.05. Therefore, the results and hypotheses H15, H16, and H17 are rejected, as indicated above. Thus, the equal variance assumption is approximately met and assumed. However, the Welch ANOVA results are relatively the same between the groups. Further, the equal variance assumption is proven with the One-Way ANOVA with greater than 0.05 significant levels. A Post-Hoc is not required in this case as the equal variance assumptions are assumed and met.

Table 14: The Growth of Establishment of Islamic Financial Institutions

The Growth of Islamic Financial Institution in Nigeria						
POE	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
2020-2022	Lotus Bank	Third Sovereign Sukuk	First Islamic REIT (CHD)	First Corporate Sukuk	First Green Sukuk	Pension Fund VI
2018-2019	Suntrust NIB License	Second Sovereign Sukuk	Taj Bank	Cornerstone Takaful 2019	Salam Takaful 2019	
2017	First Sovereign SukuK					
2016	Noor Takaful	Jaiz Takaful	First fixed income fund			
2014	First Islamic ETF (Lotus)					
2013	Sterling NIB License	First subnational Sukuk				
2012	Jaiz Bank	Stanbic NIB	NGX Lotus Islamic Index			
2008	First Non-Interest mutual fund					***Period of Establishment**

Source: IFDI and IFSI SR

The growth of Islamic Financial Institutions in Nigeria is based on Table 15, which indicates the establishment period. The first Non-Interest mutual fund was founded in 2008. In 2012, the Jaiz Bank plc, Stanbic NIB, and NGX lotus Islamic Index were licensed, followed by Sterling NIB and the first sub-national Sukuk in 2013. While in 2014, the first Islamic ETF (Lotus) was launched. In 2016, Noor Takaful, Jaiz Takaful and First Fixed Income Fund were established. In 2017 the first Sovereign was issued; in 2018 and 2019, the license was issued to Suntrust NIB, and Second Sovereign Sukuk was issued. From 2020 to 2022, Lotus bank, the third sovereign Sukuk, First Islamic REIT (CHD) Taj Bank, First Corporate Sukuk, First Green Sukuk and Pension Fund VI. Therefore, the establishment period indicates tremendous achievement within thirteen years.



	2014	2015	2016	2017	2018	2019	2020	2021	2022
Islamic Financial Assests	1.975	2.201	2.345	2.508	2.582	2.749	3.06	2.3	2.9
USD Billion									

Figure 3: Islamic Financial Assets in Nigeria
Source: Nigerian Security Exchange Commission (SEC)

Islamic financial asset is one of the most significant indicators showing the sector's growth and development. The full-flagged Islamic financial Institutions started in 2014 with total industry assets of 1.975 billion USD. Currently, three full-fledged Islamic banks and two Islamic counters operate in Nigeria with small capital bases and limited distribution networks. Islamic bank deposit collections were limited to 0.4 per cent for industrial deposits, while financing was higher at 0.7per cent for industrial loans. Fitch rated Jaiz Bank holds more than 60 per cent market share in the domestic Islamic banking sector. Bank shareholders are determined to support the bank's strong growth

with further capital injections. Favourable regulatory requirements support the growth of Islamic banking. The CBN has set a 10 per cent liquidity ratio for non-interest financial institutions, which is lower than conventional institutions at 30 per cent. CBN also grants Islamic banks an "alpha factor" of 50 per cent. This is a discount when calculating risk-weighted assets but does not apply to conventional banks. This will significantly increase the capital adequacy ratio of Islamic banks, allowing Islamic banks to reduce capital constraints for growth and gain market share; as of 2020, the Islamic financial asset in Nigeria is 3.06 billion USD and dropped in 2021 due to the inflation and is reviving in 2022.

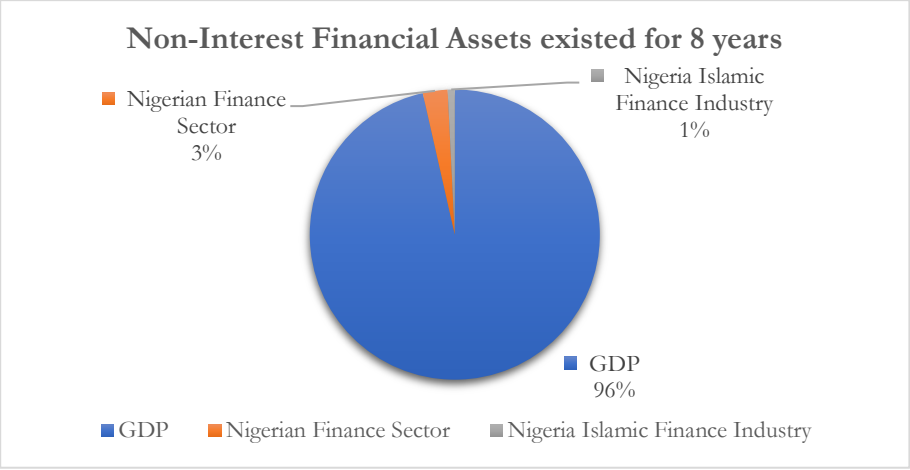


Figure 4: Contribution of Non-Interest financial market towards GDP within 8 years
Source: IFDI and IFSI SR

The Nigerian GDP in 2020 was estimated at 440 billion USD and is expected to continue growing despite inflation and the Covid-19 pandemic that crippled many global economies, not only Nigeria. In Nigerian finance, the sector contributed to a GDP of nearly 13 billion USD with a heavy concentration in banking (IFDI, 2021). The Nigerian non-interest finance market was valued at $3.06 billion in 2020 and dropped slightly in 2021 with 2.9 billion USD due to the Covid-19 pandemic at the end of 2021. Therefore, Islamic financial assets represent 1 per cent of Nigeria's non-interest Finance Market towards GDP and 3.6 per cent of the Nigerian financial sector, as indicated in figure 4 and table 15, respectively.

IMPLICATIONS OF RESEARCH FINDINGS

The implications of the research findings of the research are indicated in the theoretical implications and other ways of managerial implication as depicted in Table 15.

Table 15: Theoretical Implications and Managerial Implication

Theoretical	Managerial
The study contributed to the current literature while addressing Financial Exclusion in Nigeria.	Islamic Financial Institutions managers would develop comprehensive ways to accommodate individuals suffered exclusion as new products to be developed for the growth of the system in Nigeria.
The study result will assist in innovating and developing a new model for Financial Exclusion.	An essential offer to the Islamic Financial Institutions managers to adjust their strategies and accommodate all levels of financial excluders.
The role of religion is recognised as a result many individuals are financially excluded due to the religious and poverty reasons.	Islamic Financial institutions are highly influential in mediating the Financial Exclusion.
The awareness is highly needed for enlightening people through organizing seminars, conferences on Financial Exclusion.	The research emphasizes the need for Islamic Financial Institutions to develop ways to address poverty reduction and Financial Exclusion in Nigeria.
The researcher indicated the factors and how they affect financial exclusion.	The research suggested that Islamic Financial Institution's performance is paramount and significant. Thus, management should consider the factors discussed to improve and enhance activities of financial inclusion in Nigeria.
The attitude of government policy by highlighting several strategies and looking for measure to promote the Islamic financial institutions to address Financial Exclusion in Nigeria.	
Finally, the study aims to address the	

Theoretical	Managerial
situation of financial exclusion in Nigeria through the mediating role of Islamic Financial Institutions.	

DISCUSSION AND CONCLUSION

Following the measurement and structural models investigated to justify the proposed model under Figure 1 as the role of Islamic financial Institutions in tackling financial exclusion in Northern Nigeria. Table 2 highlighted the open-ended questionnaires served for the analysis of the respondents. However, Table 3 shows the univariate technique outliers to check and justify the standardized (z) score and shows a non-of the result exceeded the threshold of 4. Table 4 assessed the data normality with maximum likelihood based on the Skewness and Kurtosis of all items and variables used. Table 5, the demographic analysis, was used to describe the sample profile of the respondents. The factor loadings of the constructs were loaded above 0.05 in table 7 as recommended (Fornell & Lacker, 1981), which means the higher the factor loading, the more positive the construction of the measurement model. The Cronbach Alpha, composite reliability and average variance extracted were perfectly fit and met the requirement for reliability and validity of the model, as indicated in table 6. While figure 2 indicate a practical relationship between the variable based on measurement, as it describes the measurement of the model fit of GFI, AGFI, IFI, CFI, TLI, and RMSEA as recommended by (Byrne, 2013).

Moreover, Tables 8 and 9 indicate the results' direct effect and mediation. The hypotheses were supported, except H3 was rejected on the direct effect between RE and IFI considered the same thing. Therefore, the mediating results indicate partial mediation of two scenarios, Poverty and Awareness. At the same time, religion justifies the direct effect on financial exclusion while Government Policy has full mediation, as indicated in the relationship in table 9. Tables 10, 11 and 12 tested demographic based on Levene's test on gender and sample t-test, whereby rejected the assumption and confirmed by One way ANOVA test that equal variance was assumed for age, education and income towards financial exclusion.

In addition, the secondary data supported the assumption of the research outcome as reported in table 14; the period of establishment and operation of less than a decade contributed hugely to the country's GDP within eight (8) years of operation in Nigeria as indicated in figure 3 and figure 4 respectively.

The study confirmed the relationship between dependent and independent variables, which consists of (Poverty, Awareness, Religious and

Government Policy) promoting financial exclusion in Northern Nigeria. To address these factors, the government needs to license more Islamic financial institutions in the country and open up more branches in the Northern region, as the current Islamic financial institutions justified their market stand in just eight (8) years of operation. Therefore, financial exclusion can be drastically reduced and addressed if the factor were addressed through mediating role of Islamic financial institutions in Northern Nigeria. The study shows that Islamic financial Institutions can improve financial inclusion with sustainable development by providing opportunities for the Northern vulnerable to invest modestly in the system and address the exclusion of the region. The secondary data also provides support and justification for the performance of Islamic financial institutions towards financial inclusion and address exclusion in Nigeria, as indicated in Table 15 and Figures 3 and 4.

CONCLUSION

The study concluded by discussing various related areas and revealed the significant contribution to the literature by generating insight into the performance of Islamic Financial Institutions and its determinant towards financial exclusion in Nigeria. The research suggested an idea of objective criteria for evaluating the performance of Islamic Financial Institutions in addressing Financial Exclusion in Northern Nigeria. Furthermore, it can also use the study framework for poverty reduction and financial services to create religious awareness windows and provide a solution to government policy for massive financial inclusion. On the other hand, the manager or supervisor of financial institutions must concentrate on the Shariah-compliant aspect to accommodate the vulnerable who highly classify religion as a hindrance and denial to access to financial institutions.

The most enormous and significant contribution to the literature is inviting the mediator effect on Financial Exclusion. The study shows that the Islamic Financial Institution's Performance (IFI) fully mediates the attitude of government Policy (AG) on Financial Exclusion (FE). The study can consider the absence of IFI generates a significant setback in attracting financial inclusion. Government and the regulatory agency should consider their policy implementation seriously and co-opt *Shari'ah* advisory in attracting Northern Nigeria to participate in financial services as northern Nigeria considered the most populated area and Muslim-dominated area in Nigeria.

RECOMMENDATION

The study further recommends that Islamic financial institutions' performance is less significant and considered to partially mediate the effects of Poverty (PO)

and Awareness (AW) on Financial Exclusion (FE). If the Attitude of Government Policy is fully implemented, poverty and awareness become less concern as all are part of the issue to address policy implementation. Finally, the relationship between the Islamic Financial Institution as a mediator to Financial Exclusion, the ground-work for the financial manager to embark on addressing the issue of Financial Exclusion through Islamic financial institutions, especially in the northern part of Nigeria, by deploying experts and professionals to handle the sector to present time innovations and development.

REFERENCES

Ayadi, R., Arbak, E., Naceur, S. B., & De Groen, W. P. (2015). Financial development, bank efficiency, and economic growth across the Mediterranean. In *Economic and social development of the Southern and Eastern Mediterranean countries* (pp. 219-233). Springer, Cham.

Aziz, A., & Naima, U. (2021). Rethinking digital financial inclusion: Evidence from Bangladesh. *Technology in Society*, *64*, 101509.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models.*Journal of the academy of marketing science*, *16*(1), 74-94.

Boitan, I. A. (2016). Crowdlending and financial inclusion evidence from EU countries. *Economic Alternatives*, *4*, 418-432.

Chen, Y., & Sivakumar, V. (2021). Investigation of finance industry on risk awareness model and digital economic growth. *Annals of Operations Research*, 1-22.

Chowdhury, E. K., Dhar, B. K., Gazi, M., & Issa, A. (2022). Impact of Remittance on Economic Progress: Evidence from Low-Income Asian Frontier Countries. *Journal of the Knowledge Economy*, 1-26.

Delle Foglie, A., Boukrami, E., Vento, G., & Panetta, I. C. (2022). The regulators' dilemma and the global banking regulation: the case of the dual financial systems. *Journal of Banking Regulation*, 1-15.

Dogan, E., Madaleno, M., & Taskin, D. (2022). Financial inclusion and poverty: evidence from Turkish household survey data. *Applied Economics*, *54*(19), 2135-2147.

Farrell, A. M. (2010). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of business research*, *63*(3), 324-327.

Fløttum, K., Dankel, D. J., & Skiple, J. K. (2022). The Sustainable Development Goals Sensible Initiative or Just Nonsense? An

Investigation of Norwegian Citizens' Knowledge and Attitudes. *Sustainability*, *14*(7), 4305.

Gosztonyi, M., & Havran, D. (2022). Highways to Hell? Paths Towards the Formal Financial Exclusion: Empirical Lessons of the Households from Northern Hungary. *The European Journal of Development Research*, *34*(3), 1573-1606.

Hair, E., Halle, T., Terry-Humen, E., Lavelle, B., & Calkins, J. (2006). Children's school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, *21*(4), 431-454.

Ho, Y. S. (2006). Review of second-order models for adsorption systems. *Journal of hazardous materials*, *136*(3), 681-689.

Hsuan, C., Zebrowski, A., Lin, M. P., Buckler, D. G., & Carr, B. G. (2022). Emergency departments in the United States treating high proportions of patients with ambulatory care sensitive conditions: a retrospective cross-sectional analysis. *BMC Health Services Research*, *22*(1), 1-10.

Jusoh, W. N. H. W., & Ibrahim, U. (2020). Corporate social responsibility of Islamic banks: Malaysian practitioners' outlook. *Journal of Islamic Accounting and Business Research*.

Kallström, A., Al-Abdulla, O., Parkki, J., Häkkinen, M., Juusola, H., & Kauhanen, J. (2022). I don't leave my people; They need me: Qualitative research of local health care professionals' working motivations in Syria. *Conflict and health*, *16*(1), 1-11.

Leff, S. S., & Hoyle, R. H. (1995). Young athletes' perceptions of parental support and pressure. *Journal of youth and adolescence*, *24*(2), 187-203.

Lenka, S. K., & Barik, R. (2018). Has expansion of mobile phone and internet use spurred financial inclusion in the SAARC countries?. *Financial Innovation*, *4*(1), 1-19.

Mindra, R., Bananuka, J., Kaawaase, T., Namaganda, R., & Teko, J. (2022). Attitude and Islamic banking adoption: moderating effects of pricing of conventional bank products and social influence. *Journal of Islamic Accounting and Business Research*.

Mollah, S., & Zaman, M. (2015). Shari'ah supervision, corporate governance and performance: Conventional vs. Islamic banks. *Journal of Banking & Finance*, *58*, 418-435.

Mróz, F., & Roszak, P. (2022). The Ministry of Religious Congregations to People Affected by the SARS-CoV-2 Coronavirus in Poland: Geographies of Care During the COVID-19 Pandemic. *Journal of religion and health*, *61*(3), 2279-2301.

Muganyi, T., Yan, L., Yin, Y., Sun, H., Gong, X., & Taghizadeh-Hesary, F. (2022). Fintech, regtech, and financial development: evidence from China. *Financial Innovation*, *8*(1), 1-20.

Muhammad, T., Dauda, S. A., & Mamman, D. (2018). The contemporary Islamic banking system (Jaiz bank) in tackling financial exclusion in Nigeria. *International journal of Islamic economics and finance studies*, *4*(1), 24-40.

Muhammad, T., Ngah, B. B., & Obad, A. S. F. M. (2022). Financial Exclusion in Northern Nigeria: A Lesson From the Developed Countries. *AFEBI Islamic Finance and Economic Review*, *7*(01), 45-62.

Mustapha, Z., Kunhibava, S. B., & Muneeza, A. (2020). Legal and Sharīʿah non-compliance risks in Nigerian Islamic finance industry: a review of the literature. *International Journal of Law and Management*.

Náñez Alonso, S. L., Jorge-Vazquez, J., Reier Forradellas, R. F., & Ahijado Dochado, E. (2022). Solutions to financial exclusion in rural and depopulated areas: Evidence Based in Castilla y León (Spain). *Land*, *11*(1), 74.

Nawi, F. A. M., Yazid, A. S., & Mohammed, M. O. (2013). A critical literature review for Islamic banks selection criteria in Malaysia. *International Business Research*, *6*(6), 143.

Neaime, S., & Gaysset, I. (2018). Financial inclusion and stability in MENA: Evidence from poverty and inequality. *Finance Research Letters*, *24*, 230-237.

Ogunleye, T. A., & Bamidele, A. P. (2022). Are the northern and southern regions equally affected by the COVID-19 pandemic? An empirical evidence from Nigeria. In *Data Science for COVID-19* (pp. 631-645). Academic Press.

Ogunleye, T. A., & Bamidele, A. P. (2022). Are the northern and southern regions equally affected by the COVID-19 pandemic? An empirical evidence from Nigeria. In *Data Science for COVID-19* (pp. 631-645). Academic Press.

Ratnawati, K. (2020). The impact of financial inclusion on economic growth, poverty, income inequality, and financial stability in Asia. *The Journal of Asian Finance, Economics and Business*, *7*(10), 73-85.

Ricciuti, R., Savoia, A., & Sen, K. (2019). What determines administrative capacity in developing countries?. *International tax and public finance*, *26*(5), 972-998.

Sakib, N. H., Islam, M., Shishir, M., & Jaman, F. (2022). National integrity strategy implementation in land administration to prevent corruption in Bangladesh. *SN Social Sciences*, *2*(4), 1-17.

Smalls, B. L., Gregory, C. M., Zoller, J. S., & Egede, L. E. (2015). Direct and indirect effects of neighborhood factors and self-care on glycemic control in adults with type 2 diabetes. *Journal of Diabetes and its Complications*, *29*(2), 186-191.

Storm, S. (2021). Lessons for the Age of Consequences: COVID-19 and the Macroeconomy. *Review of Political Economy*, 1-40.

Taha, R., Muhamad Ali, N. N., Zulkifli, M. F. and Nor Paizin, M. (2015). Disclosure of Zakat Information: Is It Important?. International *Conference on masjid, zakat and waqf* (IMAF 2015), Shah Alam, Selangor.

Todorof, M. (2018, August). Shariah-compliant FinTech in the banking industry. In *era Forum* (Vol. 19, No. 1, pp. 1-17). Springer Berlin Heidelberg.

Wang, X., & Fu, Y. (2022). Digital financial inclusion and vulnerability to poverty: Evidence from Chinese rural households. *China agricultural economic review*, *14*(1), 64-83.

Zitouni, T., & Jedidia, K. B. (2022). Does Islamic microfinance contribute to economic empowerment in Tunisia?: a case study of Zitouna Tamkeen. *Journal of Business and Socio-economic Development*.

Zulkhibri, M. (2019). Macroprudential policy and tools in a dual banking system: insights from the literature. *Borsa Istanbul Review*, *19*(1), 65-76.