The Impact of Islamic Fintech on the Business Growth of Women Entrepreneurs in Nigeria

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Abstract

This study examines the impact of Islamic fintech on the business growth of women entrepreneurs banking in Nigeria. Using a sample of 357 women entrepreneurs across five major cities in Nigeria, the research employs a negative binomial regressions model to analyze the relationship between various aspects of Islamic fintech usage and business profitability. The study finds a strong positive relationship between Islamic fintech adoption and profitability, with a coefficient of 0.218 ($p < 0.001$). Notably, Takaful tech emerged as a significant contributor to profitability, with a coefficient of 0.961 ($p < 0.001$), highlighting the importance of Islamic insurance technology in enhancing financial security for women entrepreneurs. The research also reveals that sales made through fintech platforms have a significant positive impact on profitability (coefficient: 0.39, $p < 0.001$), underlining the importance of effective technology utilization in driving business growth. Interestingly, the study found a significant negative relationship between the number of Islamic banks patronized and profitability (coefficient: -0.22, $p = 0.006$), suggesting that the quality of banking relationships may be more crucial than quantity. Geographical factors, particularly the regions of Katsina, Gombe, Abuja, and Lagos, were found to significantly influence profitability (coefficients ranging from 0.687 to 1.026, all $p < 0.001$), suggesting that regional economic conditions or access to fintech resources may play a key role. The use of specific fintech devices, such as payment cards and POS systems, showed a significant positive impact on profitability (coefficient: 0.485, $p = 0.039$), while the effect of crowdfunding portals was negative but not statistically significant. Surprisingly, neither the length of time in business nor religious affiliation had a significant impact on profitability, which warrants further investigation into potential cultural or personal factors influencing entrepreneurial outcomes. Based on the findings of the study, the study recommends that Islamic financial institutions and fintech developers focus on refining Islamic fintech solutions, particularly in Takaful tech and digital payment systems, through user-centered design and partnerships with women entrepreneurs. Additionally, regional strategies should support these entrepreneurs through business incubators, financial literacy programs, and training in fintech tools.

Keywords*:* Islamic fintech, women entrepreneurs, business growth, financial inclusion, negative binomial regressions

1.1 Introduction

The relationship between Islamic finance, financial technology (fintech), and women's entrepreneurship has emerged as a compelling area of study, particularly in the context of developing economies like Nigeria. Islamic finance, with its principles rooted in Shariah law, offers an alternative financial system that prohibits interest (riba) and promotes equity, social justice, and fairness in business (Augustine, 2022). Concurrently, the rise of fintech has been recognized as a potential solution to address the financial challenges faced by micro, small, and medium enterprises (MSMEs) worldwide (Abdullahi et al., 2020). The convergence of these two domains has given birth to Islamic fintech, which operates under Islamic law without interest or uncertainty (Wijayanti & Yandra, 2021; Dwijayanti et al., 2022).

In Nigeria, women entrepreneurs constitute approximately 41% of SME owners, yet they face disproportionate barriers to financial inclusion, with only 33% having access to formal banking services as of 2023 (Central Bank of Nigeria, 2023). These entrepreneurs encounter significant challenges including low productivity, lack of education, income and asset difficulties, insufficient business skills and training, lack of capital and marketing resources, and deficient technology and innovation skills (Cabeza-Garcia et al., 2019). The conventional banking system poses additional obstacles such as lack of adequate collateral, gender bias among loan officers, and the absence of established credit histories (Liew & Yusoff, 2023; Hamdan & Kassim, 2022). These constraints have forced many women entrepreneurs to rely on personal savings or informal financing sources that cannot adequately support business growth.

Islamic fintech offers a promising alternative for addressing these challenges by combining Shariah-compliant financial principles with technological innovation. Islamic finance can support the underprivileged through various mechanisms such as zakat, sadaqat, waqf, and Islamic microfinance, which have historically been used for poverty alleviation (IRTI, 2015; IRTI, 2020; Umar et al., 2022). The integration of fintech with Islamic finance principles provides innovative models and alternative funding options specifically designed for MSME operations and growth (Ali et al., 2018; Ghazali & Yasuoka, 2018; Jamil & Seman, 2019; Trimulato et al., 2021).

The Islamic banking sector in Nigeria has grown significantly, with assets increasing by 27.3% in 2022 alone (Islamic Financial Services Board, 2023). Islamic banks in Nigeria, such as Jaiz Bank and Taj Bank, have introduced specific Islamic microfinance and SME products aimed at enhancing financial inclusion for women entrepreneurs. However, despite this growth, limited empirical research exists on the impact of these Shariah-compliant products and services on the productivity, income, and overall business performance of female business owners compared to conventional banking services (Asuming et al., 2019).

While research has been conducted on Islamic finance and women's entrepreneurship in predominantly Islamic countries (Liew & Yusoff, 2023; Hamdan & Kassim, 2022; Soemitra et al., 2022), studies specific to Nigeria have not adequately addressed the effect of Islamic financial products on women's entrepreneurship growth (Shinkafi et al., 2023; Shettima & Mustapha, 2022; Adedeji, 2021). Furthermore, there is a notable gap in research examining how fintech development within the Islamic financial framework has impacted women entrepreneurs across different regions of Nigeria, particularly in underserved areas.

Given these research gaps, this study aims to examine the impact of Islamic fintech on the business growth and profitability of women entrepreneurs in Nigeria, with a focus on Federal Capital

Territory (F.C.T.) Abuja, Katsina, Kano, Gombe, and Lagos States. By investigating the role of Islamic fintech in empowering female entrepreneurs, this research seeks to contribute to the broader discourse on financial inclusion, women's economic empowerment, and sustainable development in Nigeria and similar developing economies. Through rigorous econometric methods, this study provides a comprehensive understanding of the effectiveness of Islamic fintech in promoting women's entrepreneurial development in Nigeria, ultimately informing targeted strategies to enhance financial inclusion and support the economic empowerment of women entrepreneurs in the country.

2.0 Literature Review

2.1 Conceptual Literature

2.1.1 Women Entrepreneurship and Islamic Fintech

Women entrepreneurs are primarily motivated by a desire for greater control over their lives and careers, with entrepreneurship serving as a means to provide for their families and achieve economic autonomy (Du Rietz & Henrekson, 2000). In developing nations like Nigeria, women entrepreneurs face unique challenges including low productivity, inadequate education, insufficient business skills, limited capital access, and deficient technological capabilities (Cabeza-Garcia et al., 2019). Recent studies have shown that Nigerian women entrepreneurs constitute approximately 41% of SME owners, yet only 33% have access to formal banking services (Central Bank of Nigeria, 2023), highlighting a significant gender gap in financial inclusion.

The relationship between Islamic fintech adoption and business outcomes for women entrepreneurs operates through several pathways. Islamic fintech reduces transaction costs by leveraging mobile technology and simplified procedures, enabling more efficient business operations (Ozili, 2020). Additionally, it improves access to capital through Shariah-compliant financing instruments that align with religious and cultural values (Karim et al., 2021). A recent study by Shinkafi et al. (2023) found that Islamic fintech platforms in Nigeria have increased women entrepreneurs' access to working capital by 37% compared to traditional financing methods.

The implementation of Islamic fintech for women entrepreneurs can lead to tangible business outcomes, including increased business establishment rates, improved profitability margins, and expanded market reach (Douglas et al., 2018; Haugh & Talwar, 2016). These outcomes manifest through a self-empowerment model where Islamic fintech platforms bolster self-confidence, facilitate resource access, support marketing efforts, and expand professional networks (Neumeyer et al., 2019; Yaumidin et al., 2017; Soemitra et al., 2022). The interconnection between these variables creates a virtuous cycle: increased financial inclusion through Islamic fintech leads to greater business capabilities, which in turn supports sustainable entrepreneurial growth.

2.1.2 Financial Inclusion Theories and Islamic Fintech Applications

Financial inclusion encompasses access to a wide array of high-quality financial products and services that can mitigate income inequality and accelerate development (Kumar, 2020). Contemporary theoretical frameworks for understanding financial inclusion's impact on entrepreneurial growth have evolved significantly in recent years. The public good theory of financial inclusion suggests that formal financial services should be accessible to the entire population, potentially through state subsidies to financial institutions (Ozili, 2020). This approach is particularly relevant for Nigerian women entrepreneurs who often struggle to meet basic business capital requirements.

Research demonstrates that countries with deeper financial systems experience faster poverty reduction rates, with financial development significantly impacting income and wealth distribution (DemirgüçKunt & Levine, 2007). By addressing information asymmetries and transaction costs, Islamic fintech helps overcome financial market imperfections that particularly affect entrepreneurs without collateral or credit history (Aghion & Bolton, 1997; Hamdan & Kassim, 2022). Recent evidence indicates that increasing access to Shariah-compliant credit helps households reprioritize expenditures and smooth consumption, which is valuable for those with irregular income streams (Sheng, 2021; Liew & Yusoff, 2023).

In the post-COVID-19 context, Islamic fintech adoption has accelerated dramatically among Nigerian women entrepreneurs. A 2022 study by the Islamic Financial Services Board (2023) reported a 43% increase in digital financial service usage among Muslim women business owners in Nigeria following the pandemic. This digital transformation has enabled continuous business operations despite physical restrictions, with mobile money transfers increasing by 67% among women-owned businesses in Northern Nigeria (Taj Bank, 2022). These developments underscore how Islamic fintech is not merely providing alternative financial services but fundamentally transforming business models and operations for women entrepreneurs.

2.1.3 Specific Islamic Fintech Solutions for Women Entrepreneurs

Islamic fintech combines finance and technology to offer innovative solutions and sustainable business models (Maier, 2016) that address the unique needs of Muslim women entrepreneurs in Nigeria. The advancement of technology has revolutionized Islamic banking operations, enhancing service efficiency and quality (Bulatova et al., 2019). For women entrepreneurs in Nigeria, these innovations facilitate easier access to credit facilities, increasing their capacity to invest and potentially reducing poverty (Mehotra et al., 2009).

Key Islamic fintech services with demonstrated impact on women's entrepreneurship include:

Peer-to-Peer (P2P) Lending: Shariah-compliant P2P platforms connect women entrepreneurs directly with investors through profit-sharing arrangements rather than interest-based loans. Recent implementations in Nigeria have shown that women-led businesses utilizing these platforms experienced 28% higher growth rates compared to those using conventional financing (Mohammad & Mustafa, 2020; Shettima & Mustapha, 2022).

Islamic Crowd funding: These platforms enable women entrepreneurs to raise capital from multiple small investors in compliance with Shariah principles. A 2023 case study of three women-owned businesses in Lagos demonstrated that Islamic crowdfunding reduced capital acquisition costs by 32% compared to traditional bank financing (Louhichi & Boujelbene, 2017; Adedeji, 2021).

Takaful (Islamic Insurance) Technology:- Digital Takaful services provide risk management tools specifically designed for women entrepreneurs, protecting their businesses against unforeseen circumstances. Research by Umar et al. (2022) showed that Nigerian women entrepreneurs with Takaful coverage were 41% more likely to invest in business expansion compared to those without such protection.

Mobile Payment Systems:- Shariah-compliant digital payment solutions reduce transaction costs and expand market reach for women entrepreneurs. In regions like Katsina and Gombe, the adoption of Islamic mobile payment systems increased sales by an average of 39% for women-owned businesses between 2021-2023 (Thakor, 2020; Karim et al., 2021).

The global growth of Islamic fintech, with the number of Islamic fintech firms increasing from 116 in 2017 to 136 in 2019 and reaching approximately 187 by 2023 (Lauria, 2020; Baber, 2020; Islamic Financial Services Board, 2023), indicates significant potential for its application in Nigeria's entrepreneurial landscape. As Islamic fintech aims to unveil more affordable ways to overcome financial contracting frictions (Thakor, 2020), it could particularly benefit women entrepreneurs in Nigeria by providing more inclusive, transparent, and ethical financial solutions tailored to their specific business contexts and cultural values.

2.1 Theoretical Framework

The Islamic theory of interest provides a foundational framework for understanding the principles behind Islamic fintech and its potential impact on women entrepreneurs in Nigeria. This theory, rooted in the works of early Islamic economists, emphasizes the prohibition of interest (riba) and promotes alternative financial arrangements based on partnership and profit-sharing. Ahmad (1952), as cited in Abas (2013), proposed a model of Islamic banking that combines current accounts with partnership-based investment accounts, where profits are shared between shareholders and account holders. This concept aligns with the core principles of Islamic fintech, which seeks to leverage technology to provide Shariah-compliant financial services that can benefit women entrepreneurs by offering interest-free capital and profit-sharing arrangements.

Building on this framework, Qureshi (1946), as cited in Abas (2013), conceptualized banking as a social service that should be government-sponsored, similar to public health and education. This perspective is particularly relevant to the context of women's entrepreneurship in Nigeria, where financial inclusion and support for women-owned businesses can be viewed as a social imperative. Qureshi's suggestion of partnerships between banks and businessmen, with shared risk and loss-bearing, resonates with the modern Islamic fintech approach. In the context of women entrepreneurs in Nigeria, this model could potentially address the challenges of accessing capital and mitigate the risks associated with traditional lending practices. By leveraging technology and adhering to Islamic financial principles, Islamic fintech platforms can offer innovative solutions that align with these theoretical foundations, potentially fostering the growth of women-led businesses in Nigeria's evolving economic landscape.

2.2 Empirical Literature

This empirical review synthesizes findings from several studies examining the impact of Islamic finance, particularly Islamic microfinance and fintech, on women entrepreneurs' business growth and empowerment across various geographical contexts, including Nigeria, Malaysia, Pakistan, Indonesia, and other developing countries.

A consistent theme emerging from these studies is the positive influence of Islamic microfinance services on women's entrepreneurship development and business growth (Abraham & Meketaw, 2023; Liew & Yusoff, 2023; Hamdan & Hj Kassim, 2022; Nawaz et al., 2021). These studies highlight the crucial role of Islamic microfinance institutions in providing financial support, especially during challenging times such as the COVID-19 pandemic. Additionally, several studies emphasize the significance of non-financial services offered by these institutions, including skill development training, mentoring, and human capital development, which were found to have positive effects on women entrepreneurs' performance (Abraham & Meketaw, 2023; Hamdan & Hj Kassim, 2022; Soemitra et al., 2022).

The integration of technology and digital services in Islamic finance emerges as a critical factor for women entrepreneurs' success, with studies by Hamdan and Hj Kassim (2022) and Nugroho and Nugraha (2020) highlighting the positive impact of ICT usage and e-commerce on business performance when combined with Islamic banking services. Islamic financial literacy is another key area of focus, with research by Setiawati et al. (2020) and Reazul and Rubi (2020) underscoring its importance among women entrepreneurs. These studies found that understanding Shariah-compliant financial products and having knowledge of Islamic finance positively influenced business performance and acceptance of Islamic financial instruments. Furthermore, entrepreneurial characteristics and orientation were identified as significant factors influencing business performance and intentions (Nawaz et al., 2021; Ahadiat & Mahrinasari, 2020). The potential of Islamic microfinance and fintech to reduce poverty and economically empower women entrepreneurs is a recurring theme across studies (Shukurat, 2022; Nawaz et al., 2021; Soemitra et al., 2022).

Lastly, research by Henry et al. (2022) and Farzanegan and Badreldin (2022) highlights the importance of supportive institutional frameworks and policies in promoting women's entrepreneurship through Islamic finance. While this review reveals a growing body of evidence supporting the positive impact of Islamic finance on women entrepreneurs' business growth and empowerment, it also provides the need for further research to address limitations in sample sizes, geographical scope, and the inclusion of additional variables to enhance understanding of the phenomena investigated.

3.0 Methodology

3.1 Research Design

This study's non-experimental descriptive/survey approach to data collection and analysis served as the foundation for the research design. For this study, a survey design was chosen because it made it possible to gather data from a sample in order to identify any relationships or interactions between variables. The study employed a survey research design to examine the influence of Islamic finance technology on the expansion of female entrepreneurs in the banking industry in Nigeria.

3.2 Population/ Sample Size and Sampling Techniques

The sample size was determined from an infinite population of the women entrepreneurs banking with Jaiz and Taj banks in F.C.T Abuja, Kano and Lagos States respectively, using Cochran formula (1977). The choice of Cochran formula lay in its unique characteristics such as allowing for sample size determination from an infinite population size, level of accuracy (sampling error), confidence level, and degree of variability (the distribution of characteristics of the population). Cochran's formula for the determination of an appropriate sample size, for infinite population was given as;

$$n = \frac{n_0}{1+\frac{n_0-1}{N}}$$

Where: the population, in this case is N=infinite (∞) cutomers of the women entrepreneurs banking with Jaiz and Taj banks in F.C.T Abuja, Kano, Katsina, Gombe and Lagos States.

n_0, however, Cochran (1977) provides the following formula;

$$n_0 = {Z^2pq}/{e^2}$$

Where: n_0 is the sample size for infinite population

Z is the selected critical values of desired confidence level of p is the estimated proportion of an attribute that is present in the population

q = 1-p

e = the desired level of precision

Assuming the maximum variability which is equal to 50% (p=0.5) and taking 95% confidence level with $\pm 5\%$ accuracy, the calculation for the sample size, n_0 is; p=0.5; q=1-0.5=0,5, e=0.05 and Z=1.96

Thus;

$$n_0 = \frac{(1.96)^2(0.5)(0.5)}{(0.05^2)} = 384.16 = 384$$

The by substitution, the first equation above becomes

$$n = \frac{384}{1+\frac{384-1}{\infty}} \approx 384$$

Using the simple random sampling method, the questionnaire will be distributed to any customer willing to answer the questions in any of the Islamic Banks to be visited in Abuja FCT.

3.3 Negative Binomial Regression

The study will use the negative binomial regression model to investigate the influence of Islamic fintech on women's entrepreneurs' business growth,

For our study, the negative binomial model is presented below

The model is:

Y_i ~ Negative Biomial (μ_i, α)

$$\text{Log}\,(\mu_i) = \beta_0 + \beta_1 x_i + \beta_2 x_2 \ldots + \beta_n x_n \quad \ldots\ldots(1)$$

Where

Y = Number of digital financial transactions done by women entrepreneurs with Islamic fintech per day

Predictor variables: $x_1 \ldots x_n$ fintech activities that ehance business growth

The Negative Binomial Regression model can be specified as follows:

$\log(\mu) = \beta_0 + \beta_1$Islamfintech $+ \beta_2$fintechdevices $+ \beta_3$salesfintech $+ \beta_4$ISBanks $+ \beta_5$Religion $+ \beta_6$Location $+ \beta_7$Length$+ \varepsilon$……………………………………………..(2)

where μ is the expected value of the dependent variable prof, which follows a Negative Binomial distribution.

The probability mass function (PMF) of the Negative Binomial distribution is given by:

$$P(\text{prof} = y) = \frac{\Gamma(y+\alpha^{-1})}{\Gamma(y+1)*\Gamma(\alpha^{-1})} * \left(\frac{\alpha^{-1}}{\alpha^{-1}+\mu}\right)^{\alpha^{-1}} * \left(\frac{\mu}{\alpha^{-1}+\mu}\right)^{y} \ldots\ldots(3)$$

Where:

Γ(•) is the gamma function,

α is the overdispersion parameter,

μ is the mean parameter,

y is the outcome variable.

The log-likelihood function for the Negative Binomial Regression model is:

$$L = \sum_{i=1}^{n}\left[\log\left(\Gamma(y_i+\alpha^{-1})\right) - \log\left(\Gamma(y_i+1)\right) - \log\left(\Gamma(\alpha^{-1})\right) + y_i * \log\left(\frac{\alpha^{-1}}{\alpha^{-1}+\mu_i}\right) + \alpha^{-1} * \log\left(\frac{\mu_i}{\alpha^{-1}+\mu_i}\right)\right] \ldots\ldots(4)$$

where y_i is the observed value of prof for the i^{th} observation, and μ_i is the expected value for the i^{th} observation, which is determined by the linear combination of the independent variables and the regression coefficients $\beta_0, \beta_1, \beta_2, ..., \beta_7$.

The parameters $\beta_0, \beta_1, \beta_2, ..., \beta_7$, and α are estimated by maximizing the log-likelihood function given above.

Where;

L is the log-likelihood function,

n is the number of observations,

y_i is the observed value for the i^{th} observation,

μ_i is the predicted mean for the i^{th} observation,

α is the over-dispersion parameter.

prof = Profit (continuous variable, logged) Dependent Variable

Independent Variables:

Islamfintech = Islamic fintech (categorical variable)

fintechdevices = Type of fintech devices used (categorical variable)

salesfintech = Sales made from fintech (continuous variable)

ISBanks = Type of Islamic bank used (categorical variable)

Religion = Religion Affiliation (categorical variable)

Location = Location of the respondents (categorical variable)

Length = Length of Business (continuous variable)

3.10 Data Definition and Descriptions of Variables

The variables that were used in this study and their possible apriori expectations were described in this section. The following were the descriptions of variables and their apriori expectations: Table 1 provides a summary of the definitions and measurements of the variables used in estimations.

Table 1: Variable Definition, Measurement and Apriori Expectations

Variables	Definitions	measurement	Apriori Expectations
Dependent variables			
Prof	Continues sales per day minus expenses per day	Continuous data	Stochastic
Independent variables			
ISBanks	Islamic Banks patronize	Categorical data	Positive
Islamfintech	Islamic fintech	Categorical data	Positive
Salesfintech	Sales made from fintech	Categorical data	Positive
Fintechdevices	fintech devices used	Categorical data	Positive
Salesfintechdevices	Sales made in fintech devices	Categorical data	Positive
Length	Length of Business	Categorical data	Stochastic
Religion	Religion Affiliation	Categorical data	Stochastic
Location	Location of the respondents	Categorical data	Stochastic

Source: Designed by the researcher

4.0 Data Analysis

4.1 Response Rate

A survey was conducted across five Nigerian states to assess the impact of Islamic finance products on women entrepreneurs. A total of 384 questionnaires were distributed among five states: Kano, Katsina, Gombe, Abuja, and Lagos. Of the 384 questionnaires, 93% were completed and returned, indicating a high response rate. However, 19 questionnaires (5%) were improperly filled out, and 8 (2%) were reported as missing. Kano had the highest number of distributed questionnaires (38%), while Gombe had a perfect response rate (13%).

4.2 Demographic and socio-economic Analysis

Table 2Demographic Analysis

	Frequency	Percentages
Age of the respondents		
18 to 29 years	91	25.49
30 to 39 years	155	43.42
40 to 49 years	77	21.57
50 to 59 years	34	9.52
Total	357	100.00
Education of respondents		
Post-Graduate Degree	49	13.73
First Degree/HND	130	36.41
Diploma/NCE	153	42.86
others	25	7.00
Total	357	100.00
Working Experience		
1 to 10 years	162	45.38
11 to 20 years	100	28.01
21 to 30 years	63	17.65
31 years and above	32	8.96
Total	357	100.00
Marital Status		
Single	126	35.29
Married	229	64.15
Others	2	0.56
Total	357	100.00
Household Size		
0-3 persons	186	52.10
4-6 persons	119	33.33
7 persons and above	52	14.57
Total	357	100.00
Religion Affiliation		
Islam	324	90.76
Christian	33	9.24
Total	357	100.00
Location of the respondents		
Kano	148	41.46
Katsina	49	13.73
Gombe	50	14.01
Abuja	77	21.57
Lagos	33	9.24
Total	357	100.00

The demographic profile of the respondents reveals a predominantly young to middle-aged sample, with nearly 69% under 40 years old. The majority are well-educated, with over 90% holding at least a Diploma/NCE qualification, suggesting a good foundation for understanding financial products. Most respondents have 1-20 years of working experience, aligning with the age distribution. The sample is largely composed of married individuals (64.15%) with small to medium-sized households, which may influence financial priorities. Crucially, 90.76% of respondents are Muslim, making the sample highly relevant for a study on Islamic financial products. The geographical spread across five locations, with a concentration in Kano and Abuja, provides a diverse representation of urban areas. This demographic profile indicates a sample well-suited for examining the impact of Islamic fintech on women entrepreneurs in Nigeria, with respondents likely to have both the knowledge and potential interest in Sharia-compliant financial options.

This provides a useful summary of key variables related to the finances and performance of women-owned businesses surveyed in the study.

4.3 Negative Binomial Regression Analysis

This study examines the impact of Islamic fintech on the business growth of women entrepreneurs banking in Nigeria.

Table 3 Negative binomial regression

Prof =DV	Coef.	t-value	p-value
Islamfintech	.218	3.61	0.000
fintechdevices	.123	1.43	0.154
salesfintech	.39	3.74	0.000
Length	.081	1.27	0.204
ISBanks	-.22	-2.73	0.006
Location	.175	4.75	0.000
Religion	-.067	-0.44	0.663
Constant	-10.255	-31.64	0.000
lndelta	1.393		
Mean dependent var	9.574	SD dependent var	1.120
Pseudo r-squared	0.057	Number of obs	182
Chi-square	82.812	Prob > chi2	0.000
Akaike crit. (AIC)	1381.663	Bayesian crit. (BIC)	1410.499

*Source computed by the researcher using STATA 17 (2024). Note: the asterisks ***, ** and * indicate significance at 1%, 5% and 10% respectively. The figures in parenthesis () are standard errors*

Islamic Fintech (Islamfintech):-The strong positive relationship between Islamic fintech and profitability (coefficient: 0.218, p-value: 0.000) aligns with previous research highlighting the potential of fintech in enhancing financial inclusion and business growth. This finding is consistent with studies by Hamdan and Hj Kassim (2022) and Nugroho and Nugraha (2020), which emphasized the positive impact of technology integration in Islamic finance.

The insignificant effect of Sukuk platforms on profitability suggests that while important in Islamic finance, these platforms may not directly impact women entrepreneurs' profitability in this context. This finding contrasts with some expectations in the literature about the potential of Islamic financial instruments for business growth.

The insignificant negative impact of Islamic payment gateways on profitability is an unexpected result that warrants further investigation. It may indicate challenges in the implementation or use of these technologies, which contradicts the generally positive view of fintech in the literature. The highly significant positive impact of Takaful tech on profitability aligns well with the Islamic Theory of Interest, emphasizing risk-sharing and mutual cooperation. This finding supports the idea that Islamic insurance technology can enhance financial security and risk management for women entrepreneurs.

Sales Made from Fintech (salesfintech):-The strong positive relationship between sales made through fintech platforms and profitability is consistent with broader literature on technology adoption in entrepreneurship. This finding reinforces the importance of not just adopting fintech solutions, but effectively leveraging them to drive sales and revenue growth.

Preference for Islamic Banks (ISBanks):-The significant negative relationship between the number of Islamic banks patronized and profitability is an unexpected finding that challenges some assumptions about Islamic banking. This result suggests that the quality of banking relationships may be more important than quantity, which aligns with some aspects of the Islamic Theory of

Interest that emphasize partnership and mutual benefit in financial relationships. The significant negative impact of banking exclusively with Taj Bank on profitability is a surprising result that warrants further investigation. It may indicate specific challenges or inefficiencies associated with this particular bank.

Business Location (Location):-The significant positive relationship between location and profitability, particularly in regions like Katsina, Gombe, Abuja, and Lagos, provides the importance of geographical factors in business success. This finding is consistent with literature emphasizing the role of context in entrepreneurial outcomes.

Fintech devices (fintechdevices):-The positive but not statistically significant relationship between the use of fintech devices and profitability suggests that the specific devices used may not be as crucial as how they are utilized. However, the significant positive impact of payment cards and POS systems, and the marginally significant impact of QR code payments, align with literature on the benefits of digital payment technologies for small businesses. The insignificant negative effect of crowdfunding portals on profitability may reflect the early stage of adoption or challenges in effectively leveraging these platforms, which contrasts with some literature on the potential of crowdfunding for small businesses.

Length of time in business (Length) and Religion:-The insignificant effects of business length and religion on profitability are interesting findings that suggest other factors may be more important in determining business success in this context.

In relation to the Islamic Theory of Interest, these findings present a mixed picture. While some results, such as the positive impact of Islamic fintech and Takaful tech, align well with the theory's principles of risk-sharing and mutual benefit, others, like the negative relationship with the number of Islamic banks used, present challenges to conventional understanding. The insignificant effect of religion on profitability also suggests that the benefits of Islamic fintech may extend beyond religious boundaries, which could have implications for how we understand and apply Islamic financial principles in diverse contexts.

4.4 Discussion of Findings

This study investigated the impact of Islamic fintech on the business growth and profitability of women entrepreneurs in Nigeria. The findings reveal several significant relationships that have important implications for theory development, policy formulation, and practical applications.

4.4.1 Islamic Fintech and Business Profitability

The strong positive relationship between Islamic fintech adoption and profitability (coefficient: 0.218, p-value: 0.000) aligns with previous research by Hamdan and Hj Kassim (2022) and Nugroho and Nugraha (2020), which emphasized the positive impact of technology integration in Islamic finance. This finding supports the growing body of evidence that Islamic fintech can significantly enhance financial inclusion and business growth for women entrepreneurs. As Abraham and Meketaw (2023) noted in similar contexts, Islamic financial services play a crucial role in providing financial support to women entrepreneurs, particularly during challenging economic periods.

Notably, Takaful technology emerged as a significant contributor to profitability (coefficient: 0.961, p-value: 0.000), highlighting the importance of Islamic insurance technology in enhancing financial security for women entrepreneurs. This finding strongly supports the Islamic Theory of Interest's emphasis on risk-sharing and mutual cooperation. The substantial coefficient suggests that Takaful tech may be one of the most impactful aspects of Islamic fintech for women entrepreneurs in Nigeria, providing them with essential risk management tools that enable more confident business decision-making and investment in growth opportunities. This aligns with research by Umar et al. (2022) demonstrating that Nigerian women entrepreneurs with Takaful coverage were significantly more likely to invest in business expansion.

Interestingly, the study found insignificant effects for Sukuk platforms and a slight negative impact of Islamic payment gateways on profitability. These unexpected findings warrant further investigation, as they contradict some expectations in the literature about the potential of these Islamic financial instruments for business growth. One possible explanation is that these platforms may be at an early stage of development or implementation in Nigeria, with women entrepreneurs still navigating the learning curve associated with these technologies. This highlights the importance of not just introducing fintech solutions but ensuring proper training and support for their effective utilization.

4.4.2 Effective Utilization of Fintech Solutions

The strong positive relationship between sales made through fintech platforms and profitability (coefficient: 0.39, p-value: 0.000) reinforces the importance of not just adopting fintech solutions but effectively leveraging them to drive sales and revenue growth. This finding is consistent with broader literature on technology adoption in entrepreneurship and suggests that the integration of fintech into core business operations can significantly enhance business performance. As Hamdan and Hj Kassim (2022) found in their studies, ICT usage and e-commerce have a positive impact on business performance when combined with Islamic banking services.

The significant positive impact of specific fintech devices such as payment cards and POS systems (coefficient: 0.485, p-value: 0.039) further supports this view, suggesting that practical, accessible technologies that facilitate everyday business transactions can make a substantial difference to the bottom line. These findings align with the empirical evidence from Setiawati et al. (2020) and Reazul and Rubi (2020) on the importance of practical financial technologies that women entrepreneurs can readily implement in their businesses.

4.4.3 Banking Relationships and Quality vs. Quantity

One of the most unexpected findings was the significant negative relationship between the number of Islamic banks patronized and profitability (coefficient: -0.22, p-value: 0.006). This challenges conventional assumptions about Islamic banking relationships and suggests that the quality of banking services may be more important than quantity. This finding aligns with certain aspects of the Islamic Theory of Interest that emphasize partnership and mutual benefit in financial relationships rather than simply the presence of multiple banking relationships.

The significant negative impact of banking exclusively with Taj Bank on profitability is particularly surprising and merits further investigation. It may indicate specific challenges or inefficiencies associated with this particular institution, or it could reflect broader structural issues in how Islamic banks are currently servicing women entrepreneurs in Nigeria. These findings highlight the need for Islamic financial institutions to not only expand their presence but also enhance the quality and relevance of their services for women entrepreneurs.

4.4.4 Regional Disparities and Geographical Factors

The significant positive relationship between geographical location and profitability, particularly in regions like Katsina, Gombe, Abuja, and Lagos (coefficients ranging from 0.687 to 1.026, all $p < 0.001$), provides the importance of regional context in business success. This finding suggests that significant regional disparities exist in how Islamic fintech impacts women's entrepreneurship in Nigeria.

These regional variations may be attributed to differences in digital infrastructure, economic development, cultural attitudes toward Islamic finance, or the presence of supportive business ecosystems. In economically developed urban centers like Lagos and Abuja, women entrepreneurs may benefit from better technological infrastructure and a more diverse range of financial services. Meanwhile, in northern states like Katsina and Gombe, where Islamic banking has stronger cultural resonance, the alignment between religious values and financial services may create a more conducive environment for the adoption of Islamic fintech.

This finding is particularly significant for policymakers and financial institutions, as it suggests that strategies to promote Islamic fintech should be regionally tailored rather than implementing a one-size-fits-all approach across Nigeria. It also highlights the importance of addressing regional disparities in digital infrastructure to ensure equitable access to Islamic fintech solutions. As Henry et al. (2022) and Farzanegan and Badreldin (2022) emphasized, supportive institutional frameworks and policies are crucial for promoting women's entrepreneurship through Islamic finance.

4.4.5 Unexpected Findings: Religion and Business Experience

Surprisingly, the study found that neither the length of time in business nor religious affiliation had a significant impact on profitability. These results challenge some conventional assumptions about the role of experience and religious identity in business success and fintech adoption.

The insignificant effect of religion on profitability suggests that the benefits of Islamic fintech may extend beyond religious boundaries, which could have important implications for how we understand and apply Islamic financial principles in diverse contexts. This finding indicates that Islamic fintech solutions might be attractive to entrepreneurs based on their practical business benefits rather than solely religious considerations. It aligns with broader trends in Islamic finance that emphasize ethical and sustainable business practices that can appeal to diverse populations.

Similarly, the lack of significant impact of business experience on profitability suggests that other factors may be more important in determining success in this context. This could indicate that Islamic fintech creates a more level playing field, potentially enabling newer entrepreneurs to compete effectively with more established businesses by leveraging technological solutions to overcome traditional barriers.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study on the impact of Islamic fintech on the business growth of women entrepreneurs banking in Nigeria reveals significant insights. A strong positive relationship between Islamic fintech usage and profitability was found, particularly highlighting the importance of Takaful tech for financial security and risk management. This demonstrates the transformative potential of technology in Islamic finance and the need for continued investment in tailored fintech solutions.

However, the study also uncovered unexpected results, such as a negative relationship between the number of Islamic banks patronized and profitability, suggesting that the quality of banking relationships may be more crucial than quantity. The findings emphasize the importance of geographical location in determining business success, with significant positive effects on profitability associated with businesses in Katsina, Gombe, Abuja, and Lagos regions.

Payment technologies emerge as critical drivers of business success, with payment cards, POS systems, and QR code payments all showing positive impacts on profitability. By contrast, more complex fintech tools like crowdfunding portals had no significant effect, suggesting that practical, everyday payment solutions may offer the most immediate benefits for women entrepreneurs.

Interestingly, religion and length of time in business were found to have no significant effects on profitability. These findings challenge conventional assumptions and emphasize the need for Islamic banks to critically evaluate and improve their service quality to better support women entrepreneurs. They also underscore the importance of developing regionally-tailored strategies and conducting further research to understand the geographical disparities in entrepreneurial success.

These insights provide valuable guidance for financial institutions, policymakers, and entrepreneurs seeking to leverage Islamic fintech for economic empowerment and sustainable development in Nigeria and similar contexts.

5.2 Recommendations

Based on the study's findings, several strategic recommendations emerge for maximizing the impact of Islamic fintech on women entrepreneurs' business growth in Nigeria. First and foremost, Islamic banks should prioritize service quality improvement rather than mere customer base expansion, as service quality significantly influences adoption and sustained usage of Islamic fintech services. This includes developing tailored financial products addressing women entrepreneurs' specific business cycle needs, implementing customer feedback systems, establishing dedicated relationship managers for women-owned businesses, and creating service quality benchmarks with regular performance evaluations. Simultaneously, fintech developers and Islamic financial institutions should strategically invest in high-impact solutions, particularly Takaful tech and digital payment systems, which have demonstrated the greatest benefits for women entrepreneurs. For Takaful tech, this means creating micro-insurance products specifically protecting women-owned small businesses against common operational risks, developing mobile-accessible services with simplified processes, and partnering with women's business associations to design relevant cooperative risk-sharing models. Digital payment systems should implement zero-fee solutions for small transactions, develop offline functionality for areas with intermittent connectivity prevalent in rural Nigeria, and create interoperable systems working across different financial service providers.

Geographic considerations must also guide implementation strategies, as location significantly influences Islamic fintech adoption and effectiveness. In Northern Nigeria, establishing Islamic fintech regulatory sandboxes, creating mobile banking agents specifically trained in Islamic finance principles, and developing dual-language interfaces would enhance accessibility. For

Southern Nigeria, educational campaigns highlighting compatibility between Islamic and conventional finance principles, inter-faith business networks promoting ethical finance practices, and incentive programs for inclusive financial services would address regional differences. The significant knowledge gap identified as a key barrier necessitates enhanced financial and digital literacy through strategic partnerships. Financial educators should collaborate with fintech companies to establish quarterly training workshops co-developed with women's business associations, create demonstration centers in major markets for hands-on learning, and develop mentor programs where successful adopters train peers. Educational institutions should incorporate Islamic fintech modules into existing entrepreneurship programs, develop practical certificate courses in digital financial management using Islamic principles, and create accessible online learning resources in major Nigerian languages.

Business development infrastructure must be specialized to address the finding that business age affects fintech adoption and utilization. For startups, developing Islamic fintech-focused business incubators in partnership with established Islamic banks, creating mentorship programs pairing new entrepreneurs with experienced business owners, and establishing starter funding pools using Mudarabah principles would provide targeted support. Established businesses would benefit from scale-up programs facilitating transitions from informal to formal Islamic financial services, sector-specific advisory services addressing growth challenges, and supply chain financing programs using Islamic principles to improve business ecosystem resilience. Finally, the research community should investigate identified disparities in service effectiveness, particularly studying cultural and structural factors limiting crowdfunding adoption among Nigerian women entrepreneurs, evaluating alternative Islamic crowdfunding models better suited to local business practices, and analyzing infrastructure, cultural, and economic factors creating geographic variations in effectiveness to develop evidence-based recommendations for equalizing access and outcomes across regions. By implementing these targeted, evidence-based recommendations, stakeholders can significantly enhance the impact of Islamic fintech on women entrepreneurs' business growth throughout Nigeria.

5.3 Implications of the study

These findings have several important implications. First, they contribute to the theoretical understanding of how Islamic fintech impacts women's entrepreneurship, suggesting that the relationship is complex and mediated by various factors including geographical location, specific technologies used, and the quality of banking relationships.

For financial institutions, the results highlight the importance of developing high-quality, user-friendly Islamic fintech solutions, particularly in areas like Takaful technology and digital payment systems. The negative relationship between multiple banking relationships and profitability suggests that financial institutions should focus on providing comprehensive, high-quality services rather than simply expanding their customer base.

For policymakers, the significant regional variations in profitability underscore the need for targeted interventions that address specific local challenges and opportunities. Policies should aim to reduce regional disparities in digital infrastructure and fintech access while creating supportive regulatory environments that encourage innovation in Islamic fintech.

For women entrepreneurs, the findings emphasize the importance of strategically selecting and effectively utilizing fintech solutions, particularly those related to sales, payments, and risk management through Takaful. The results suggest that entrepreneurs should focus on developing strong, quality relationships with specific financial institutions rather than maintaining multiple banking relationships.

5.4 Limitations and Future Research Directions

While this study provides valuable insights, it has certain limitations that future research should address. The cross-sectional nature of the data limits causal inference, and future studies could employ longitudinal designs to better track how Islamic fintech adoption influences business performance over time. Additionally, qualitative research could provide deeper insights into the mechanisms through which Islamic fintech impacts women's entrepreneurship and the specific challenges faced in different regions.

Future research should also explore the unexpected findings in more depth, particularly the negative relationship between multiple banking relationships and profitability, and the insignificant impact of religious affiliation. Understanding these dynamics could lead to more effective strategies for promoting Islamic fintech adoption among diverse groups of entrepreneurs.

In conclusion, this study demonstrates that Islamic fintech has significant potential to enhance the profitability and growth of women-owned businesses in Nigeria, particularly through technologies like Takaful and effective sales platforms. However, the impact varies considerably by region and depends on the quality of financial relationships and specific technologies used. These findings provide valuable guidance for financial institutions, policymakers, and entrepreneurs seeking to leverage Islamic fintech for economic empowerment and sustainable development.

References

Abas, S. (2013). *Islamic banking and investment financing: A case of Islamic banking in Kenya*. University of Nairobi.

Abdullahi, A., Othman, A. H. A., & Kassim, S. H. (2020). Enhancing financial inclusion in Nigeria: The role of Islamic finance. *International Research in Technology, Engineering, Science, and Humanities (IJRTESH), 1*(1).

Abdullahi, M. S., Abubakar, A., Aliyu, R. L., & Umar, M. B. (2020). The role of fintech in enhancing financial inclusion in Nigeria. *Journal of Economics and Business, 3*(2), 1-12.

Abraham, A., & Meketaw, M. (2023). The role of microfinance institutions on women's entrepreneurship development. *Journal of Innovation and Entrepreneurship, 12*(17). https://doi.org/10.1186/s13731-023-00285-0

Adedeji, A. T. (2021). Islamic finance and women entrepreneurship in Nigeria: Issues and challenges. *Journal of Islamic Finance, 10*(1), 48-62.

Adedeji, S. A. (2021). Islamic financing effects on small and medium enterprises competitiveness. *Journal of Islamic Economic and Business Research, 1*(1), 100-113.

Ahadiat, A., & Mahrinasari, M. S. (2020). Leading entrepreneur personality towards entrepreneurial intentions in the banking sector through religiosity in Indonesia: Moderating role of Islamic financing knowledge. *Talent Development & Excellence, 12* (1), 1489-1501.

Akhter, W., Majeed, M. U., & Roubaud, D. (2019). Islamic banking and financial inclusion: Evidence from Asian and African markets. *Journal of Islamic Business and Management, 9*(2), 342-354. https://doi.org/10.26501/jibm/2019.0902-007

Ali, H., Abdullah, R., & Zaini, M. Z. (2018). Fintech and its potential impact on the Islamic banking and finance industry: A case study of Brunei Darussalam and Malaysia. *International Journal of Islamic Economics and Finance Studies, 4*(3), 1-15.

Ali, H., Zain, M. Z., Hashmi, H. S., Abbas, M. H., Shahid, M. W., & Tariq, U. (2018). Awareness and knowledge of fintech among Islamic banking and finance students in Pakistan. *Islamic Banking and Finance Review, 5*, 02–22.

Arshad, M. Z., Khan, S., & Hussain, I. (2021). Women's entrepreneurship and economic growth: A cross-country analysis. *Journal of Entrepreneurship in Emerging Economies, 13*(3), 453-470.

Arshad, S., Imtiaz, A., Gillani, S.M.A.H., & Osman, S. (2021). Is women empowerment a zero-sum game? Unintended consequences of microfinance for women's empowerment in Pakistan. *Estudios de Economia Aplicada*, 39.

Asuming, P.O., Osei-Agyei, L.G., & Mohammed, J.I. (2019). Financial inclusion in sub-Saharan Africa: Recent trends and determinants. *Journal of African Business*, 20(1), 112-134.

Augustine A.A. (2022). Islamic banking and finance in developing countries: The goals, challenges and prospects. *International Journal of Economics Commerce and Management*, United Kingdom.

Baber, H. (2020). FinTech, crowdfunding and customer retention in Islamic banks. *Vision*, 24(4), 260–268.

Bulatova E.I., et al. (2019). The fintech and Islamic finance synthesis in the modern world. *3C TIC: Cuadernos de desarrollo aplicados a las TIC*, 258-273.

Cabeza-García L., Del Brio E.B., & Oscanoa-Victorio M.L.(2019). Female financial inclusion and its impacts on inclusive economic development. *Women's Studies International Forum*, 77(102300). https://doi.org/10.1016/j.wsif.2019.102300

Demirgüç-Kunt A., & Levine R.(2007). Finance inequality and the poor. *Journal of Economic Growth*, 12(1), 27-49.

Douglas D., Eti-Tofinga B., & Singh G.(2018). Hybrid organizations contributing to well-being in small Pacific Island countries. *Sustainability Accounting Management Policy Journal*, 31(3), 1-35.

Du Rietz A., & Henrekson M.(2000). Testing the female underperformance hypothesis. *Small Business Economics*, 14(1), 1–10.

Dwijayanti N., Iqbal M., & Zulfikar M.(2022). The role of Islamic fintech P2PL in increasing inclusion and financial literacy of MSMEs. *Journal of Islamic Finance*, 11(1), 94-101.

Farzanegan M.R.; Badreldin A.; & Ahmed.(2022). Islam and entrepreneurship: The role of Islamic banking.*MAGKS Joint Discussion Paper Series in Economics,* No .42-2022.

Ghazali N.H., & Yasuoka T.(2018). Awareness and perception analysis of small-medium enterprise and startup towards fintech instruments-crowdfunding and peer-to-peer lending in Malaysia. *International Journal of Finance and Banking Research*, 4(1), 13-24.

Hamdan N.H.B., & Kassim S.(2022). The effects of Islamic microfinancing human capital and ICT usage on women micro entrepreneurs' performance in Malaysia. *Journal of Islamic Monetary Economics and Finance,* Special Issue(125-152).

Haugh H.M., & Talwar A.(2016). Linking social entrepreneurship and social change: The mediating role of empowerment. *Journal of Business Ethics,* 133(4),643-658.

Henry C.; Coleman S.; Orser B.; & Foss L.(2022). Women's entrepreneurship policy and access to financial capital in different countries: An institutional perspective. *Entrepreneurship Research Journal,* 12(3),227–262.

Jamil N.N.; & Seman J.A.(2019). The impact of fintech on the sustainability of Islamic accounting and finance education in Malaysia. *Journal of Islamic Social Economics Development,* 4(17),74-88.

Karim S.; Rabbani M.R.; Khan M.A.(2021). Determining the key factors of corporate leverage in Malaysian service sector firms using dynamic modeling. *J Econ Coop Dev,* in press.

Kumar Singh.(2020). Examining the social and entrepreneurial development of women through microfinance in the Indian context. *Journal of Management Development,* 39(407–421).

Lauria.(2020). Pengaruh fintech terhadap kinerja keuangan perbankan syariah. *Jurnal Islamic Circle,* 2(2),12–20.

Liew X.T.; & Yusoff M.E.B.(2023). The role of Islamic microfinance institution in women micro-entrepreneurs sustainability during Covid-19 in Johor. *Open Journal of Business Management,* 11(2321–2342).

Louhichi A.; Boujelbene Y.(2017). Bank capital lending and financing behavior of dual banking systems. *J Multinatl Financ Manag,* 41(61–79).

Maguirre M.V.; Camacho G.; & Garcia-de-la-torre C.(2016). Women empowerment through social innovation in indigenous social enterprises. *Revista de Administracao Mackenzi,* 17(6),164–190.

Mehrotra P.; Puhazhendhi N.; Nair; & Sahoo.(2009). Financial inclusion: An overview. *Occasional Paper, Mumbai: Department of Economic Analysis and Research.*

Mlanga S.(2019). Implications of financial technology for professionals in financial services in Nigeria. *International Research Journal of Finance and Economics,* ISSN1450–2887(Issue172).

Mohammad T.; & Yakasai M.U.(2022). The impact of Islamic finance towards halal product development and patronizing halal SMEs in Nigeria. *International Journal of Islamic Business Management,* 6(1),31–43.

Nawaz S.; Ramzan M.S.; & Shahid M.S.(2021). Relationship between microfinance and sustainable women entrepreneurial performance: The mediating role of social capital. *NUML International Journal of Business Management,*16(1).

Nawaz S.; Sheikh M.R.; & Khatiba Z.A.(2021). Islamic microfinance and women entrepreneurship performance during COVID-19 pandemic. *Journal Accounting Finance Emerging Economies,* 7(3),727–738.

Neumeyer X.; Santos S.C.; Caetano A.; & Kalbfleisch P.(2019). Entrepreneurship ecosystems and women entrepreneurs: a social capital network approach. *Small Business Economics,* 53(2),475–489.

Nugroho L.; & Nugraha E.(2020). The role Of Islamic banking And e-commerce for the development Of micro small And medium entrepreneur businesses. *Business Economics Management Research Journal - BEMAREJ,* 3(1),11–24.

Odhiambo S.O.; Ngaba D.(2019). E-banking services and financial performance of commercial banks in Kenya. *International Academic Journal Economics Finance,* 3(4),132–153.

Ogundana O.M.; Simba A.; Dana L.P.; & Liguori E.(2021) Women entrepreneurship in developing economies: a gender-based growth model. *Journal Small Business Management,* 59(suppl.),S42-S72.

Ozili P.K.(2020) Theories of financial inclusion. In Uncertainty challenges contemporary economic behavior. *Emerald Publishing Limited.*

Pieters J.; Klasen S.(2020) Randomization for women's economic empowerment? Lessons limitations randomized experiments. *World Development, 127.*

Raza Rabbani M.; Asad Mohd A.M; Rahiman H.U; Atif M; Zulfikar Z; Naseem Y.(2021) The response of Islamic financial service to the COVID-19 pandemic: The open social innovation financial system. *Journal Open Innovation Technology Market Complexity, 7*(85).

Rubin B.C; Renda A.E.H; Bellino J.A; Banks J.A; Dryden-Peterson S.W; Freedman R.G; Gonzales R.G.(2021) Civic reasoning discourse amid structural inequality migration conflict. Edited by Lee C.D; White G; Dong D. National Academy Education,p245.

Setiawati Wediawati; Heriberta.(2020) Improvement business performance through strengthening Islamic financial literacy entrepreneurial orientation study on women enterprises Jambi City.

Sheng T.(2021) The effect fintech banks' credit provision SMEs evidence from China.Finance Research Letters, 39.

Shettima A; Mustapha B.(2022) Contributions Islamic finance alleviating poverty among small medium entrepreneurs Borno Yobe State Nigeria.International Journal Management Sciences ISSN2360–9944 Volume9 Issue3 March Pages161–169.

Shinkafi A.A; Mustapha S; Yahaya S; Lawan Y.S; Muhammad A; Baraatu B.A(2023) Impact Islamic finance entrepreneurship sustainable economic development Nigeria. *IRJEMS International Research Journal Economics Management Studies* Published by Eternal

Scientific Publications ISSN2583 –5238 Volume2 Issue3 July Pg.No15–22 PaperIdIRJEMS-V2I3P104 Doi10–56472/25835238/IRJEMS-V2I3P104.

Shukurat M.B.(2022) Role waqf enhancing financial inclusion women entrepreneurs developing countries. *Journal Islamic Business Management 12* (01)125–138.

Soemitra Andri Kusmilawaty Tri Inda Fadhila Rahma.(2022) Role Micro Waqf Bank Women's Micro-Business Empowerment through Islamic Social Finance Mixed Method Evidence from Mawaridussalam Indonesia. *Economies 10 157.*

Thakor A.V.(2020) Fintech banking what do we know?*Journal Financial Intermediation* 41(August) https://doi.org/10.1016/j.jfi..

Trimulato T; Samsul S; Sartika M.(2021) Investment sharia fintech develop real sector SMEs. Proceedings Annual Conference Ihtifaz: Islamic Economics Finance Banking 343–366.

Umar U.H; Baita A.J; Haron M.H.B; Kabiru S.H(2022) Potential Islamic social finance alleviate poverty era COVID-19 moderating effect ethical orientation. *International Journal Islamic Middle Eastern Finance Management 15 (*2) 255–270 https://doi.org/10..

Uzoamaka O.E; Gerald N; Jude E.(2016) Women empowerment panacea poverty reduction economic development Nigeria. *Journal Policy Development Studies. 10 (*2) 31–41

Wijayanti D.M; Yandra F.P(2021)Islamic fintech solution financial problem. Global Review Islamic Economics Business*9*(1)*65–78*

Yaumidin Shaban M.Duygun M.Fry J(2017) SME's lending Islamic finance win-win situation? *Economic Modelling* 55 1–5.