

# Impact of Digital Financial Inclusion on Job Creation, Purchasing Power, and Standard of Living in North-Western Nigeria

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**Abstract-** This study examines the impact of financial inclusion and digital financial inclusion on job, purchasing power, and standard of living in North-Western Nigeria. This research employed a quantitative design to examine the effect of digital financial inclusion on poverty alleviation in Nigeria. A survey method was utilized to capture respondents' perspectives, experiences, and opinions on the subject, relying on primary data collection from structured questionnaires. The data was collected from 415 households in the region; the research employs Partial Least Squares Structural Equation Modelling (PLS-SEM) to investigate the relationships between financial inclusion, digital financial inclusion and poverty reduction via (job creation, purchasing power, and standard of living). Findings of the research indicate that both financial inclusion and digital financial inclusion positively and significantly drives job creation by enabling entrepreneurship and reducing barriers to credit; the results also further revealed that digital financial inclusion are positive and significantly affect the purchasing power and household living standards. Thus, indicating that digital financial inclusion facilitates welfare improvements through better access to remittances, education, and healthcare spending. Policy implication for this study include recommendations for regulatory agencies and service providers to expand digital financial infrastructure: Increase mobile money agents in rural areas to improve accessibility, enhance mobile banking and USSD network, It's also recommend that future studies should expand to other regions of Nigeria to enhance generalizability.

**Keywords:** Financial inclusion, Digital financial inclusion, Job creation, Purchasing power, Standard of living, Poverty reduction

## 1. Introduction

Financial inclusion plays a vital role in promoting social inclusion, which counters social exclusion. It provides individuals with the chance of both benefit from and actively participated in economic and social development (Mubiru, 2012). North-Western Nigeria faces persistent socio-economic challenges, including insecurity, high unemployment, low purchasing power, and widespread poverty (World Bank, 2020). This situation is worsening as a result of limiting access to credit, savings, and efficient payment systems (Demirgüç-Kunt et al., 2018). Digital financial inclusion encompasses mobile banking, automated teller machine, point of sales, and internet

banking. They offer opportunities for economic transformation through job creation, enhancing purchasing power and improve standing of living (Ozili et al., 2023). Previous studies revealed that digital financial inclusion reduce poverty (Suri & Jack, 2016) and stimulate entrepreneurship (Mbiti & Weil, 2016) as well enhance welfare outcome (Ayyagari & Beck, 2018). However, limited empirical studies exist on how digital financial inclusion influences job creation, and household welfare in North-Western region of Nigeria. Which has unique social cultural and infrastructural challenges?

North-western Nigeria is one of the socio-economically disadvantage region in the country, with high unemployment, low household income, and widespread poverty (Idrees et al., 2024). The region is characterized by high level of financial exclusion with approximately 43% of financially excluded adults residing there and 68% of the population lacking access to formal financial services, persistent poverty undermines job creation, weakened household purchasing power, and lowered standard of living (Demirgüç-Kunt et al., 2022). This financial exclusion affects rural household purchasing power, women and youth limiting their ability to investing entrepreneurial activities, access credit for business expansion or engage in e-commerce, which in turn stifles employment opportunities and economic diversification (Economic Report, 2021).

Digital financial inclusion which encompasses digital wallets, mobile money, and online banking platforms, has emerged as a potential catalyst for economic empowerment by lowering transactions cost. Enhancing access to credit and facilitating savings and investment (Demirgüç-Kunt et al., 2018; Ozili, 2021). Empirical studies in other sub-Saharan African countries such as Kenya, demonstrate that digital financial inclusion contribute to poverty reduction, entrepreneurship and welfare improvement (Suri & Jack, 2016), However evidence from Nigeria and particularly the North-western region, remains limited.

This created a critical gap in empirical research that specifically revealed how digital financial inclusion impacted on job creation, purchasing power, and the overall standard of living for the region's rural areas. The limited access to digital payment systems, credit, and savings platforms in this region hinders economic participation, trapping a significant portion of the population in a cycle of poverty (Adesina&Adeyemi, 2021). Hence this study aims at finding the effect of financial inclusion on poverty reduction via job creation, digital financial inclusion on job creation, purchasing power, and standard of living in North-western Nigeria.

## 2. Literature Review

### 2.1 Digital Financial Inclusion and Job Creation

Digital financial inclusion provides platforms micro, small and medium enterprises (MSMEs) to access credit, expand markets, and transaction barriers, thereby, fostering job creation (Koomson et al., 2020). For instance, mobile money has been linked to increased self-employment and enterprises survival in developing economies (Aker et al., 2016; Kutz, 2003; Shen et al., 2020). The digital financial services are widely seen as a catalyst for job creation. Particularly in developing economies like Nigeria. Previous research suggests that by providing access to credit, digital payment platforms and saving accounts. Digital financial inclusion empowers micro, small and medium enterprises to formalize and expand their transaction (Sethi & Acharya, 2018), This

expansion often necessitated hiring new employees, thereby directly contributing to employment growth (Allen et al., 2016)..

In Nigeria, previous studies have revealed that increased access to digital transaction and digital credit has a positive relationship with Small and medium enterprises development, particularly in urban areas (Aribaba et al., 2019; Nan & Markus, 2021). Furthermore, employment opportunities are generated via digital financial inclusion within the financial technology (Fintech) industry itself and its agent (POS) who facilitate digital transactions in rural area (Hashemizadeh et al., 2023; Wachuku & Amadi, 2024; Wezel & Jack Ree, 2023). By providing access to digital transaction, digital financial inclusion aids individuals to build assets, reducing their vulnerability to economic shocks and unexpected expense (Demirgüç-Kunt et al., 2022). This is particularly relevant in North-western Nigeria. Where rural population often incur high cost for basics financial services due to their remote locations.

## 2.2 Digital financial inclusion and purchasing power

Digital financial Inclusion strengthens households' purchasing power, by reducing transaction costs and providing credit access (Beck et al., 2008). Digital savings tools also smooth income flows and improve consumption capacity (Demirgüç-Kunt et al., 2018). Digital financial inclusion has a direct and positive impact on the purchasing power of individuals and households, especially in rural settings.

The literature also points out that digital financial inclusion enhance purchasing power by granting access to credit, which enable individuals to invest in income generating activities or acquire assets that were previously unaffordable (Islam et al., 2022). For instance, a small accessed through digital platform can assist farmers to buy better seeds or for business to buy more inventories both of which increase future earning and purchasing power.

Previous studies also support this by demonstrating the same effects in some parts of Africa. This finding is consistent with (Suri & Jack, 2016), who revealed the use of mobile money in Kenya reduced poverty and improve welfare outcome. In North-western Nigeria there is dearth of research detailing how these benefit manifest in the unique socio economic context of the region, where formal not all formal institutions in the country are presence (Gaudens-Omer, 2018).

## 2.3 Digital Financial Inclusion and Standard of living

Access to digital finance improve welfare of the citizens by promoting financial flexibility, facilitating efficient remittance, and boosting investment in health and education (Islam et al., 2022; Seng, 2021). The main aim of financial inclusion is to improve the standard of living of financially excluded population. Previous literature has suggested a strong relationship between the digital financial inclusion and standard of living. Digital financial inclusion contributes to high standard of living by empowering individual to manage their finances more effectively, leading to improve health, education and wellbeing (Zhou, 2021). Access to secure savings for instance, allows families to save for their children's education or to cover unexpected medical emergency bills. Their by improving the quality of their education and life as well reducing vulnerability (Demirgüç-Kunt & Klapper, 2013). In addition, the financial stability provided by digital financial inclusion allows household to invest in better housing, nutrition, and other amenities that directly contribute to a higher standard of living (Nan & Markus, 2021).

However the relationship between the digital financial inclusion and standard of living is revealed by the previous literature to have some challenges which if checked will reduce poverty especially

in the region like North-western Nigeria there is low digital literacy, institutional trust, and inadequate infrastructural facilities for digital financial inclusion (Olaoye & Zerihun, 2023). This is because inadequate necessary skills needed for digital financial inclusion and trust in the system, many rural populaces may not be able to fully leverage the benefit of digital financial tools, leading to a negative effect between the digital financial inclusion matrixes and tangible improvement in their daily lives.

## 2.4 Theoretical Framework

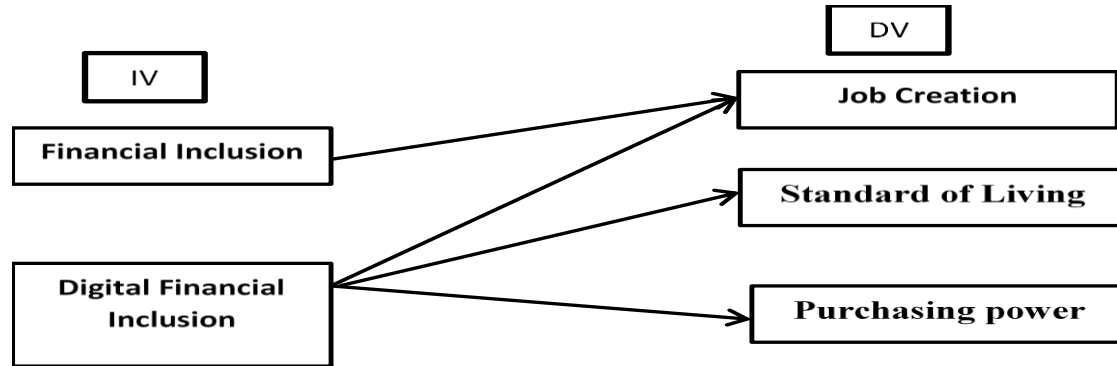
This study is drawn from the digital agency theory of financial inclusion (Ozili, 2024) which compliments other existing theories such technology acceptance model (Venkatesh & Bala, 2008) the model accepting technology (Brown & Venkatesh, 2005) the special agent theory of financial inclusion (Ozili, 2020). The digital agency theory of financial inclusion improves existing theories by revealing how digital financial inclusion agents can improve access and use of formal financial services for those who want to use it. The theory posit that financial access promote economic development by reducing risk and transaction cost (Ozili, 2024).

the digital agency theory of financial inclusion developed by Ozili (2024) is a set of principles that explain and resolve the issues in the relationship between the financial inclusion principal and digital agent that accelerate the financial inclusion using appropriate digital technologies. The theory further explain that financial inclusion principal will employ the digital agent service who will use appropriate digital technologies to achieve the financial inclusion objectives specified by the principal (Ozili, 2024).

## 2.5 Conceptual framework

The research framework is anchored in the premises that financial inclusion, digital financial inclusion are key drivers of socio economic development. Financial inclusion refers to access to affordable financial services such as credit savings and insurance (Demirgüç-Kunt & Klapper, 2013). This theory is posited to enhance household and individual economic participation. Similarly digital financial inclusion enable by mobile banking, internet banking, point of sales and finTech innovations reduces transaction costs and increase financial accessibility for financially excluded populations (Islam et al., 2022; Kouladoum et al., 2022). Within this framework both financial inclusion and digital financial inclusion serves as independent variables and are expected to positive affect the poverty reduction in north-western Nigeria positively.

The dependent variables for this study are poverty reduction to be measured by job creation, standard of living and purchasing power which are among the indicators of socio economic wellbeing. The dependent variables of the study enhanced financial access and empowers individuals to invest in entrepreneurial ventures which lead to generating employment opportunities (Asongu, 2024; Ayyagari & Beck, 2018). The framework therefore, established causal link between the financial access and socio economic outcomes, emphasizing the role of inclusive finance as a catalyst for sustainable development in North-western Nigeria. Finally after extensive review of literature the conceptual research framework figure 2 below is fine tune to achieve the objectives off the study.



**Figure 2.1** Conceptual framework

Note: IV= Independent variables, DV= Dependent Variables

Sources: Author 2025

### 3. Methodology

This research employed a quantitative design to examine the effect of digital financial inclusion on poverty alleviation in Nigeria. The scope of the study is limited to the North-West geopolitical zone, which includes Jigawato, Kano, Katsina, Kebbi, Sokoto, and Zamfara states. A survey method was utilized to capture respondents' perspectives, experiences, and opinions on the subject, relying on primary data collection (Fisher, 2010). This approach enabled the researcher to identify the key variables under investigation and explain the resulting outcomes of their interrelationships (Zikmund, 2013).

Nigeria's population is estimated at 233,139,587, of which about 63% (139 million individuals) are classified as multi-dimensionally poor (NBS, 2022). Following (Krejcie & Morgan, 1970) guideline, a minimum sample size of 382 is recommended for the population exceeding one million. For this study the sample size was increased by 40% resulting to 538 which is in line with (Salkind, 2012) suggestion of adjusting the sample size by 40-50% to minimize the non-responsiveness bias and sample error (Henri, 2006; Salkind, 2012). Accordingly a total of 538 poor households across the five states of northern Nigeria were selected as the total sample.

A multistage sampling approach was employed to select 538 poor households (108 households from each state) from each of the five states selected for the study. Ensuring adequate representation from both urban and rural areas (Sekaran & Bougie, 2010) the process combined the convenient sample and stratified random sampling techniques in drawing the participants and areas of study. Furthermore, Sekaran and Bougie (2016) highlight the relevance of stratified random sampling which was applied to guarantee that respondents from different strata had an equal probability of being included in the sample.

The survey method, utilizing a structured questionnaire as the data collection tool, was deemed the most suitable for gathering primary data. This technique is widely applied by organizational researchers seeking to collect information from large populations that cannot be directly observed (Keeter, 2005; Mazzocchi, 2008; Ye et al., 2013). It is also regarded as one of the most effective means of obtaining data on social and personal characteristics, as well as beliefs (Babbie, 2008;

Sekaran & Bougie, 2016). Accordingly, the structured questionnaire gathered information on household demographics, employment, income, expenditure, access to digital financial services (such as POS, mobile banking applications, USSD, and online banking), and welfare indicators including housing quality, health, and education.

The questionnaires were administered directly to the targeted respondents (those financially excluded). Data collection was carried out simultaneously within the same timeframe using a cross-sectional approach. This method was adopted because all variables under investigation were measured at a single point in time, consistent with the practices highlighted in the works of (Abiola, 2009; Chibba, 2009; Dominic & Lanoue, 2015; Halbouni et al., 2016; Mathieu & Kakinaka, 2020). Drawing from the existing literature, financial inclusion was assessed using indicators such as the number of banks, bank branches, bank accounts, and formal and informal financial access (Ali & Khan, 2020). Measure of digital financial inclusion include ATM usage, mobile banking application, internet banking, point of sales and USSD were adapted from (Wachuku & Amadi, 2024). While poverty reduction indicators were adapted from (Lal, 2018a). All measurement items were structured on a five-point Likert scale, in line with the recommendation of (Lal, 2018b)DeVellis, (2003). The study's hypotheses are presented as follows:

**H0<sub>1</sub>:** There is no statistically significant association between financial inclusion and poverty reduction through job creation in the North-Western region of Nigeria.

**H0<sub>2</sub>:** There is no statistically significant association between digital financial inclusion and poverty reduction through job creation in the North-Western region of Nigeria.

**H0<sub>3</sub>:** There is no statistically significant association between financial inclusion and poverty reduction through standard of living in the North-Western region of Nigeria.

**H0<sub>4</sub>:** There is no statistically significant association between financial inclusion and poverty reduction through purchasing power in the North-Western region of Nigeria.

## 4. Results

### 4.1 Descriptive statistics

#### 4.1.1 Response Rate of the Questionnaires

The study was conducted in five states of North-Western Nigeria, Jigawa, Kaduna, Kano, Kebbi, and Sokoto, while two states were excluded due to security challenges. From each of the five states, 108 households were randomly selected, giving a total of 540 distributed questionnaires. Of these, 437 were returned, representing a response rate of 80.93%. However, 40 questionnaires were discarded owing to incomplete responses or the presence of outliers, resulting in a valid sample size of 397 respondents. This yielded an effective response rate of 90.84%. A summary of the questionnaire responses is presented in Table 1 below.

**Table 1** Summary of Questionnaire Response

S/N	Response	Frequency	Percentag (%)
1	No. of distributed questionnaires	540	100
2	Completed and returned questionnaires	437	80.93

3	Unusable questionnaires:	22	5.03
	• Incompleteness and non-eligibility	8	1.83
	• Univariate and multivariate outliers	17	3.89
4	Returned and usable questionnaires	415	94.97

Scholars have suggested a minimal level for response rate, for example, (Sekaran, U., & Bougie, 2010) suggested a response rate of 30 percent as acceptable for surveys. However, other researchers had proposed other minimal level, causing an inconsistency across the literature concerning acceptable response rate. (Babbie, 2010) suggested 50 percent as the minimal level, (Groves et al., 2004) suggested 60 percent 123 while (De Vaus, 2002) argued for 80 percent. Hence, the response rate of this study is adequate for further analysis. More importantly, the tool of analysis for the current study, which is PLS, requires a minimum of only 30 responses (Chin, 1998); thus a total of 415 responses for this study is adequate for analysis. Also, the 94.97% response rate is above the range of common response rate of between 40% - 50% in social science study in Nigeria (Osuagwu, 2001). Table 2 below revealed the demographic characteristics of the respondents for this study.

**Table 2 Demographics**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage %</b>
Male	389	93.73
Female	26	6.27
<b>Age of the Respondents</b>		
26-35	32	7.71
36-45	280	67.47
Above 45 Years	103	24.82
<b>Income Level Monthly</b>		
Below 50,000	265	63.86
51,000-100,000	150	36.14
<b>Occupation of the respondents</b>		
Farming	224	53.98

Petty Trader	65	15.66
Fishing	27	6.50
Retired	40	9.64
Trader	59	14.22
<b>Highest Educational Qualification</b>		
Primary	97	23.37
SSCE	223	53.73
ND/NCE	52	12.53
HND/B.SC	43	10.36
<b>Residence of respondent</b>		
Rural	97	23.37
Semi-Rural	318	76.63

The above (table 2) characteristics of the respondent revealed that the research have reached the target respondent for the study. Therefore, their responses can be reliable

#### 4.1.2 Descriptive Analysis of Respondents

The respondents in this study comprise financially included households drawn from the five selected states Jigawa, Kaduna, Kano, Kebbi, and Sokoto. Table 2 presents the demographic characteristics of these respondents. Majority of the respondents were male (93.73%) while only (6.27%) were female. This shows the caliber of household in north-western Nigeria were most of them are male, which may reflect cultural and socio economic realities of the region where men are more likely to be the household head and decision makers in the financial activity. Most of the respondents falls within the class of 36-45 years with (67.47%), followed by above 45 Years of age with (24.82%). While only 7.71% fall within the age of 25-35 years. This revealed that majority of household are middle-age adults who are typically active on income generating activities and responsible for house welfare. About 63.86% earn below ₦50,000 monthly, while 36.14% earn between ₦ 51,000- ₦ 100,000,

This suggests a low income distribution among the respondents, consistent with poverty indicators in the region. The statistics also revealed 53.98% of the respondents are farmers, which revealed a dominant occupation of the region. While those with fishing as occupation has 6.50% which is the lowest. This indicated farming as the major business of the region for livelihood. Over half of respondents (53.73%) have secondary education (SSCE), 23.37% have only primary education, while only 10.36% and 12.53% attained HND/B.Sc and ND/NCE respectively. This shows that the

majority have low to moderate educational attainment, which may affect access to and effective use of digital financial services. Most respondents live in semi-rural areas (76.63%), while 23.37% are from rural communities. This indicates that while the respondents are not entirely rural, they still face infrastructural and financial access challenges compared to urban dwellers.

## 4.2 Results and discussion

The data analysis followed a two-stage procedure. In the first stage, the measurement model was evaluated, followed by an assessment of the structural model. The analysis was conducted using SmartPLS 3.0 (Hair et al., 2010). To determine the significance of the paths, bootstrapping was applied with 415 cases and 500 re-samples.

### 4.2.1 Measurement model

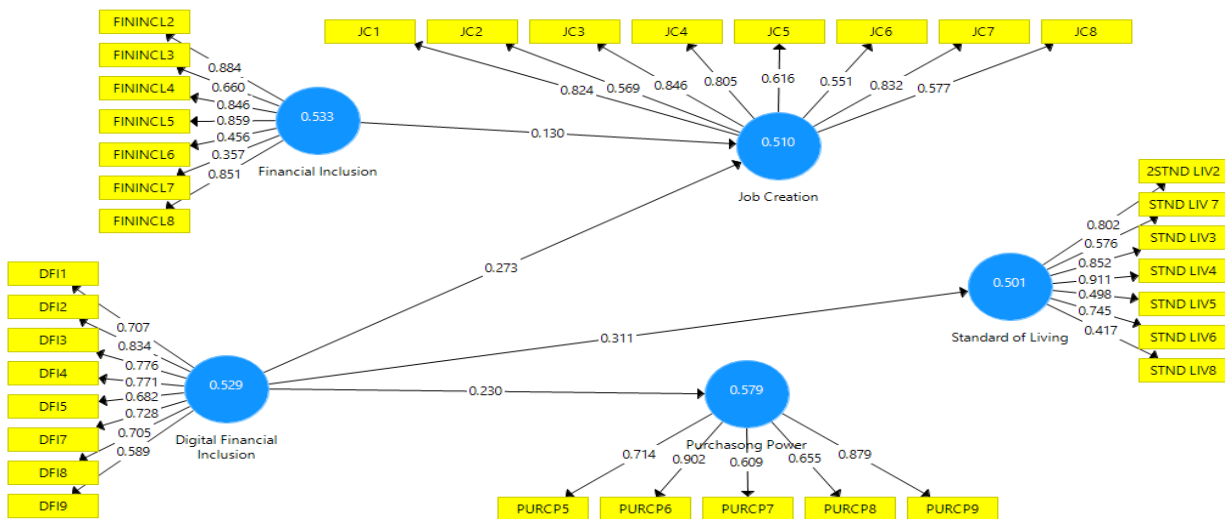


Figure 2 PLS-SEM Algorithms (Measurement Model)

Source: Author 2025

### 4.2.2 Reliability and Validity Analysis

Cronbach's Alpha (CA) Ranges from 0.823 to 0.875. Since all values are above the 0.70 threshold (Nunnally & Bernstein, 1994), this indicates good internal consistency reliability for all constructs. rho\_A Values range between 0.835 and 0.893. rho\_A is considered a more accurate reliability estimate than Cronbach's Alpha (Dijkstra & Henseler, 2015). All values exceed 0.70, confirming strong reliability. Composite reliability (CR) values range from 0.8680 to 0.899. According to (Sarstedt et al., 2019), CR values should be 0.70 or higher. This confirms that the constructs exhibit high internal consistency reliability. Average Variance Extracted (AVE) Values range from 0.501 to 0.579. For convergent validity, AVE should be  $\geq 0.50$  (Fornell & Larcker, 1981a). Since all AVE values are above 0.50, convergent validity is established. The values are presented in table 3 below:

**Table 3** Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Digital Financial Inclusion	0.875	0.893	0.899	0.529
Financial Inclusion	0.832	0.835	0.881	0.533
Job Creation	0.865	0.886	0.890	0.510
Purchasing Power	0.823	0.888	0.870	0.579
Standard of Living	0.825	0.871	0.868	0.501

### 4.2.3 Discriminant validity

Discriminant validity, an essential component of construct validity, assesses whether a measure truly captures a unique concept and doesn't overlap with other, related concepts. In other words, it ensures that constructs which are supposed to be distinct are indeed empirically different from one another. This is a critical step in structural equation model (SEM) to ensure reliability and meaningfulness of study's findings (Fornell & Larcker, 1981b)

The Fornell-Lacker criterion is a widely used method to evaluate discriminant validity in SEM. The rule states that the square root of the average variance extracted (AVE) for each construct must be greater than its highest square root correlation with any other construct (Peng & Lai, 2012). AVE measures the amount of variant measure by the construct in relation to measurement error. Higher AVE values indicate that the construct indicators are strongly representative of the construct itself. Inter-Construct Correlation: This is the correlation between different latent constructs in the model. A high correlation between constructs can be a sign of poor discriminant validity, suggesting that the constructs might not be as distinct as theorized. Fornell-Lacker criterion are presented on table 4. The diagonal values represent the square root of the AVE, and the off-diagonal values represent the inter-construct correlations. Digital financial Inclusion: The square root of AVE is 0.727. This is greater than its correlations with Financial Inclusion (0.279), Job Creation (0.310), Purchasing Power (0.230), and Standard of Living (0.311). Also, Financial Inclusion: The square root of AVE is 0.730. This is greater than its correlations with Digital Financial Inclusion (0.279), Job Creation (0.206), Purchasing Power (0.179), and Standard of Living (0.237).

In addition, Job Creation: The square root of AVE is 0.714. This is greater than its correlations with Digital Financial Inclusion (0.310), Financial Inclusion (0.206), Purchasing Power (0.219), and Standard of Living (0.248). Purchasing Power: The square root of AVE is 0.761. This is greater than its correlations with Digital Financial Inclusion (0.230), Financial Inclusion (0.179), Job Creation (0.219), and Standard of Living (0.248). Standard of Living: The square root of AVE is 0.708. This is greater than its correlations with Digital Financial Inclusion (0.311), Financial Inclusion (0.237), Job Creation (0.248), and Purchasing Power (0.248).

Therefore, all constructs meet the criterion, the model has established strong discriminant validity. This suggests that each latent variable is empirically distinct and is not measuring the same

underlying concept as any other latent variable in the model(Henseler, 2017; Henseler et al., 2014; Voorhees et al., 2016).

**Table 4:**Discriminant Validity (Fornell-Lacker Criterion)

	1	2	3	4	5
<b>Digital Financial Inclusion</b>	0.727				
<b>Financial Inclusion</b>	0.279	0.730			
<b>Job Creation</b>	0.310	0.206	0.714		
<b>Purchasing Power</b>	0.230	0.179	0.219	0.761	
<b>Standard of Living</b>	0.311	0.237	0.248	0.248	0.708

#### 4.2.4 Cross-Loadings

In addition, discriminant validity can also be assessed by comparing the loadings of indicators with their cross-loadings (Chin, 1998). According to Chin (1998), discriminant validity is established when each indicator loads higher on its corresponding construct than on other constructs. As presented in Table 6, the cross-loadings were found to be lower than the respective indicator loadings. This confirms that the measurement model meets the required standard of discriminant validity, thereby supporting its suitability for further analysis. The cross-loadings reveal that all measurement items load more strongly on their respective constructs than on others. This supports the establishment of discriminant validity, Hence, all conditions for establishing discriminant validity were satisfied in this study(G'otz et al., 2010; Hoyle, 1995; Pett et al., 2013). Table 5 below will reveal the *Discriminant Validity (Cross Loadings)*.

**Table 5:** Discriminant Validity (Cross Loadings) (n=415) cross-loadings

	Digital Financial Inclusion	Financial Inclusion	Job Creation	Purchasing Power	Standard of Living
DFI1	<b>0.707</b>	0.251	0.210	0.171	0.206
DFI2	<b>0.834</b>	0.187	0.229	0.189	0.226
DFI3	<b>0.776</b>	0.265	0.299	0.216	0.341
DFI4	<b>0.771</b>	0.168	0.180	0.179	0.197
DFI5	<b>0.682</b>	0.299	0.170	0.143	0.208
DFI7	<b>0.728</b>	0.143	0.251	0.134	0.131
DFI8	<b>0.705</b>	0.186	0.242	0.158	0.310
DFI9	<b>0.589</b>	0.047	0.171	0.102	0.027

FININCL2	0.226	<b>0.884</b>	0.142	0.147	0.237
FININCL3	0.142	<b>0.660</b>	0.064	0.091	0.092
FININCL4	0.164	<b>0.846</b>	0.148	0.091	0.132
FININCL5	0.208	<b>0.859</b>	0.137	0.124	0.198
FININCL6	0.179	<b>0.456</b>	0.112	0.182	0.185
FININCL7	0.153	<b>0.357</b>	0.178	0.095	0.091
FININCL8	0.270	<b>0.851</b>	0.171	0.150	0.209
JC1	0.237	0.160	<b>0.824</b>	0.178	0.181
JC2	0.117	0.122	<b>0.569</b>	0.171	0.189
JC3	0.283	0.172	<b>0.846</b>	0.173	0.180
JC4	0.293	0.157	<b>0.805</b>	0.135	0.182
JC5	0.157	0.163	<b>0.616</b>	0.167	0.170
JC6	0.090	0.095	<b>0.551</b>	0.172	0.188
JC7	0.245	0.143	<b>0.832</b>	0.180	0.167
JC8	0.230	0.150	<b>0.577</b>	0.120	0.202
PURCP5	0.131	0.105	0.140	<b>0.714</b>	0.173
PURCP6	0.229	0.195	0.185	<b>0.902</b>	0.263
PURCP7	0.128	0.065	0.180	<b>0.609</b>	0.130
PURCP8	0.110	0.087	0.153	<b>0.655</b>	0.118
PURCP9	0.225	0.175	0.182	<b>0.879</b>	0.214
STND LIV2	0.269	0.157	0.150	0.195	<b>0.802</b>
STND LIV3	0.257	0.191	0.157	0.162	<b>0.852</b>
STND LIV4	0.275	0.203	0.216	0.232	<b>0.911</b>
STND LIV5	0.074	0.134	0.121	0.145	<b>0.498</b>

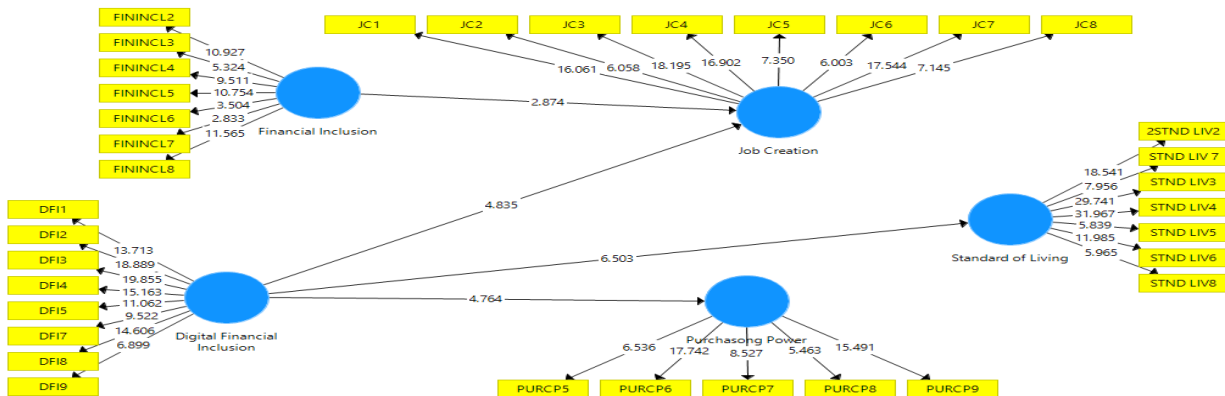
STND LIV6	0.216	0.159	0.102	0.162	<b>0.745</b>
STND LIV7	0.233	0.192	0.334	0.165	<b>0.576</b>
STND LIV8	0.083	0.157	0.147	0.226	<b>0.417</b>

### 4.3 Structural model

To evaluate the structural model Fig. 3 and Table 5 below revealed the analysis considering the path coefficients and their significance levels (Hair et al., 2014; Ketchen, 2013; Pande et al., 1998)

**Table 6** Structural Model Assessment

	$\beta$	Standard Deviation	T Statistics	P Values
Digital Financial Inclusion -> Job Creation	0.273	0.053	5.194	0.000
Digital Financial Inclusion -> Purchasing Power	0.230	0.048	4.802	0.000
Digital Financial Inclusion -> Standard of Living	0.311	0.048	6.432	0.000
Financial Inclusion -> Job Creation	0.130	0.046	2.812	0.005



**Figure. 3** Structural Models

Source: Author 2025

The structural model analysis examines the effect of financial inclusion, digital financial inclusion on poverty reduction via job creation, purchasing power and standard of living. The results are summarize as follows; H<sub>1</sub>: financial inclusion and job creation path coefficient ( $\beta=0.130$ ) is positive and significant ( $t= 2.812$ ,  $P<0.005$ ) this indicate that financial inclusion drive job opportunities. These results suggest that broader access to financial services still contribute meaningfully to job creation in the region. H<sub>2</sub>: Digital financial inclusion and Job creation with

path coefficient ( $\beta = 0.273$ ,  $t = 5.194$ ,  $P < 0.000$ ) which revealed positive and significant relationship.

This signifies that improvement in digital financial inclusion significantly enhanced job creation opportunity in North-western region of Nigeria. H<sub>3</sub>: Digital financial inclusion and Purchasing power with path coefficient ( $\beta = 0.220$ ,  $t = 4.802$ ,  $P < 0.000$ ) which is significantly and positively relationship between digital financial inclusion and purchasing power of household. H<sub>4</sub>: Digital financial inclusion and standard of living with path coefficient ( $\beta = 0.311$ ,  $t = 6.431$ ,  $P < 0.000$ ) which revealed positive and significant relationship. This signifies that improvement in digital financial inclusion significantly improve standard of living in North-western region of Nigeria. This implies that digital financial inclusion has an impact on improving household welfare, reflected in better housing, health, and education outcomes.

Therefore, all path coefficients are positive and significant, confirming that both the financial inclusion and digital financial inclusion are critical drivers of poverty reduction. Especially, digital financial inclusion revealed stronger effect across all dimensions of poverty reduction under study.

#### 4.4 Conclusion And Recommendation

This study provides empirical evidences that digital financial inclusion enhance job creation improve standard of living and strengthen the purchasing power of the household in north western Nigeria. Digital financial inclusion is therefore a critical tool for addressing unemployment, poverty and low welfare in the region. Hence, targeted policies and investment in digital finance infrastructure can maximize its impact of socio-economic development.

The findings revealed that financial inclusion and digital financial inclusion significantly drive job creation by enabling entrepreneurship and reducing barriers to credit, consistent with (Aker et al., 2016) and (Wang et al., 2018). Similarly, the results revealed digital financial inclusion has a positive effect on purchasing power, confirming that it lowers transaction cost and enhance household ability to smooth consumption (Beck et al., 2008). The strong relationship between digital financial inclusion and standard of living aligned with (Suri & Jack, 2016), indicating how digital financial inclusion facilitate welfare improvement through better access to remittance, education and healthcare spending. Hence, the policy implication for this study include recommendation for regulatory agencies and service providers to expand digital financial infrastructure, increase the number of mobile money agents (POS) to improve accessibility to finance. Furthermore, they shall promote digital finance literacy program including training of household on safe and efficient use of digital financial inclusion tools.

#### 4.5 Limitation and suggestion for future research

The limitation of this study includes the method of data collection employed by the researcher, such that data collection was restricted to North-western Nigeria Only, which limits the generalization of the results. Hence future researchers are advice to include all the six regions in the country for generalization and policy formulation for the entire nation. Also this research employed a cross sectional design; hence future research should consider other alternative such as longitudinal research design to provide deeper insight over time.

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## Reference

- [1]. Abiola, I. (2009). An assessment of fraud and its management in Nigeria commercial banks. *European Journal of Social Sciences*, 10(4), 628–640.
- [2]. Aker, J. C., Boumnijel, R., McClelland, A., & Tierney, N. (2016). Payment mechanisms and antipoverty programs: Evidence from a mobile money cash transfer experiment in Niger. *Economic Development and Cultural Change*, 65(1), 1–37. <https://doi.org/10.1086/687578>
- [3]. Ali, J., & Khan, M. A. (2020). Micro and Macro Financial Inclusion and their Impacts on Economic Growth: Evidence from Asian Economies with Alternative Approaches. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 11(5), 11–17. <https://doi.org/10.14456/ITJEMAST.2020.101>
- [4]. Aribaba, F. O., Olamide Ahmodu, A. L., Oladele, R., Yusuff, A. S., & Olaleye, R. B. (2019). The Role of Deposit Money Banks' Loan Facilities in Financing Small and Medium-Scale Enterprises in Nigeria. *Academic Journal of Interdisciplinary Studies*, 8(2), 277–284. <https://doi.org/10.2478/ajis-2019-0040>
- [5]. Asongu, S. A. (2024). The Role of Mobile Money Innovations in the Effect of Inequality on Poverty and Severity of Poverty in Sub - Saharan Africa. *Information Systems Frontiers*, 26(4), 1565–1579. <https://doi.org/10.1007/s10796-023-10427-0>
- [6]. Ayyagari, M., & Beck, T. (2018). Financial Inclusion in Asia: An Overview. *SSRN Electronic Journal*, 449. <https://doi.org/10.2139/ssrn.2707540>
- [7]. Babbie, E. (2008). *The basics of social research (Fourth)*. Thomson Higher Education.
- [8]. Babbie, E. (2010). *The Practice of Social Research (Twelfth)*. Wadsworth Publishing Company.
- [9]. Beck, T., Demirgüç-Kunt, A., & Peria, M. S. M. (2008). Banking services for everyone? Barriers to bank access and use around the world. *World Bank Economic Review*, 22(3), 397–430. <https://doi.org/10.1093/wber/lhn020>
- [10]. Brown, S. A., & Venkatesh, V. (2005). Model of Adoption of Technology in Households: A Baseline Model Test and Extension Incorporating Household Life Cycle. *MIS Quarterly*, 29(3), 399–426.
- [11]. Chibba, M. (2009). Financial Inclusion , Poverty Reduction and the Millennium Development Goals. 21, 213–230. <https://doi.org/10.1057/ejdr.2008.17>
- [12]. Chin, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In *Modern Methods for Business Research*. Lawrence Erlbaum Associates, Publishers.
- [13]. De Vaus, D. (2002). *Surveys in social research*. Psychology Press.
- [14]. Demir, A., Pesqué-cela, V., Altunbas, Y., & Murinde, V. (2022). Fintech , financial inclusion and income inequality : a quantile regression approach. *The European Journal of Finance*, 28(1), 86–107. <https://doi.org/10.1080/1351847X.2020.1772335>
- [15]. Demirgüç-Kunt, A., & Klapper, L. (2013). Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries. *Brookings Papers on Economic Activity*, 2013(1), 279–340. <https://doi.org/10.1353/eca.2013.0002>
- [16]. Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). The Global Findex Database 2021. In *The Global Findex Database 2021*. <https://doi.org/10.1596/978-1-4648-1897-4>

- [17]. Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database: Measuring Financial Inclusion and the Fintech Revolution. <https://doi.org/10.1596/978-1-4648-1259-0>
- [18]. DeVellis, R. F. (2003). Scale Development: Theory and Applications 3rd Edition. In SAGE publication Ltd. SAGE Publications Ltd.
- [19]. Dijkstra, T. K., & Henseler, J. (2015). Consistent and asymptotically normal PLS estimators for linear structural equations. *Computational Statistics and Data Analysis*, 81, 10–23. <https://doi.org/10.1016/j.csda.2014.07.008>
- [20]. Dominic, P.-R., & Lanoue, N. (2015). Cutting fraud losses in Canadian organizations. *Journal of Financial Crime*, 22(3), 295–304.
- [21]. Economic Report. (2021). Central Bank of Nigeria. Central Bank of Nigeria, 1(4), 1–6. <https://www.cbn.gov.ng/cashless/>
- [22]. F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/EBR-10-2013-0128>
- [23]. Fornell, C., & Larcker, D. F. (1981a). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39. <https://doi.org/10.2307/3151312>
- [24]. Fornell, C., & Larcker, D. F. (1981b). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18(3), 382. <https://doi.org/10.2307/3150980>
- [25]. Götz, O., Liehr-Gobbers, K., & Krafft, M. (2010). Evaluation of structural equation models using the partial least squares (PLS) approach. In V. E. Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of Partial Least Squares Concepts, Methods and Applications* (p. 627). Springer-. <https://doi.org/10.1007/978-3-642-16345-6>
- [26]. Gaudens-Omer, K. T. (2018). Imitation Effect and Endogenous Entrepreneurial Development in Africa. *Journal of Small Business and Entrepreneurship Development*, 6(1), 0–10. <https://doi.org/10.15640/jsbed.v6n1a1>
- [27]. Groves, R. M., Fowler Jr., F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2004). *Survey Methodology*.
- [28]. Halbouni, S. S., Obeid, N., & Garbou, A. (2016). Corporate Governance and Information Technology in Fraud Prevention and Detection: Evidence From the UAE. *Managerial Auditing Journal*, 31(6/7), 589–628. <https://doi.org/http://dx.doi.org/10.1108/MRR-09-2015-0216>
- [29]. Hashemizadeh, A., Ashraf, R. U., Khan, I., & Zaidi, S. A. H. (2023). Digital financial inclusion , environmental quality , and economic development : the contributions of financial development and investments in OECD countries. *Environmental Science and Pollution Research*.
- [30]. Henri, J.-F. (2006). Organizational culture and performance measurement systems. *Accounting, Organizations and Society*, 3(1), 77–103.
- [31]. Henseler, J. (2017). Partial Least Squares Path Modeling. In *Advanced Methods for Modeling Markets* (Leeflang e, p. 361). Springer International Publishing AG. <https://doi.org/10.1007/978-3-319-53469-5>
- [32]. Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- [33]. Hoyle, R. H. (1995). *Structural Equation Model: Concepts, issues, and applications*. SAGE Publications India Pvt Ltd. <https://doi.org/10.1007/s11336-013-9370-0>
- [34]. Idrees, M., Tahir, M., & Afridi, M. A. (2024). Measuring Digital Financial Inclusion Across the Globe : A New Multidimensional Index. *Qlantic Journal of Social Sciences and Humanities*, 5(4), 272–288. <https://doi.org/10.55737/qjssh.v-iv.24276>

- [35]. Islam, A. T. M. H., Abul, S., & Enamul, B. A. K. (2022). The impact of mobile money on long - term poverty : evidence from Bangladesh. *Journal of Social and Economic Development*, 24(2), 436–455. <https://doi.org/10.1007/s40847-022-00194-0>
- [36]. Keeter, S. (2005). Survey Research. In D. Druckman (Ed.), *Doing research: Methods of Inquiry for conflict analysis* 123-162. Thousand Oaks, CA: Sage Publications, Inc.
- [37]. Ketchen, D. J. (2013). A Primer on Partial Least Squares Structural Equation Modeling. In *Long Range Planning* (Vol. 46, Issues 1–2). <https://doi.org/10.1016/j.lrp.2013.01.002>
- [38]. Kouladoum, J. C., Wirajing, M. A. K., & Nchofoung, T. N. (2022). Digital technologies and financial inclusion in Sub-Saharan Africa. *Telecommunications Policy*, 46(9). <https://doi.org/10.1016/j.telpol.2022.102387>
- [39]. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for reasearch activities. *Educational and Psychological Measurement*, 30, 607–610.
- [40]. Lal, T. (2018a). Impact of financial inclusion on poverty alleviation through cooperative banks. *International Journal of Social Economics*, 45(5), 808–828. <https://doi.org/10.1108/EL-01-2017-0019>
- [41]. Lal, T. (2018b). Impact of financial inclusion on poverty alleviation through cooperative banks. *International Journal of Social Economics*, 45(5), 807–827. <https://doi.org/10.1108/IJSE-05-2017-0194>
- [42]. Mathieu, L., & Kakinaka, M. (2020). Financial inclusion , mobile money , and individual welfare : The case of Burkina Faso. *Telecommunications Policy*, 44(3), 101926. <https://doi.org/10.1016/j.telpol.2020.101926>
- [43]. Mazzocchi, M. (2008). Sampling Probability and Inference. *Statistics for Marketing and Consumer Research*, 103–129.
- [44]. Mbiti, I., & Weil, D. N. (2016). Mobile Banking The Impact of M- Pesa in Kenya. In *African Successes, Volume III: Modernization and Development: Vol. III* (Issue September, p. 415). University of Chicago Press.
- [45]. Mubiru, J. (2012). Financial Inclusion as tool for Combating Poverty: Joseph Mubiru Memorial Lecture. Bangladesh Bank.
- [46]. Nan, W. V., & Markus, M. L. (2021). What we know and don ' t know about the socioeconomic impacts of mobile money in Sub-Saharan Africa : A systematic literature review. March 2020, 1–22. <https://doi.org/10.1002/isd2.12155>
- [47]. Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory*. In McGraw-Hill, New York (3rd ed.). McGraw-Hill Companies, Inc. [http://scholar.google.com.vn/scholar?q=Psychometric+Theory+3rd&btnG=&hl=vi&as\\_sdt=0,5#0](http://scholar.google.com.vn/scholar?q=Psychometric+Theory+3rd&btnG=&hl=vi&as_sdt=0,5#0)
- [48]. Olaoye, O., & Zerihun, M. F. (2023). Financial inclusion and poverty reduction in Nigeria: the role of information and communication technology (ICT). *African Journal of Economic and Management Studies*, August. <https://doi.org/10.1108/AJEMS-12-2022-0488>
- [49]. Osuagwu, L. (2001). Marketing Strategy Effectiveness in Nigerian Banks. *Academy of Marketing Studies Journal*, 5(1), 22–30.
- [50]. Ozili, P. K. (2020). Theories of Financial Inclusion. In *Uncertainty and challenges in contemporary economic behaviour* (104257; pp. 89–115). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-80043-095-220201008>
- [51]. Ozili, P. K. (2021). Measuring financial inclusion and financial exclusion.n *New Challenges for Future Sustainability and Wellbeing*. Emerald Publishing Limited, 107866, 411–427.
- [52]. Ozili, P. K. (2024). Digital Agency Theory of Financial Inclusion : A theory of Digital Financial Inclusion: In *In Developing Digital Inclusion Through Globalization and Digitalization* (Issue June, pp. 53–69). IGI Global. <https://doi.org/10.4018/979-8-3693-4111-7.ch004>
- [53]. Ozili, P. K., Ademiju, A., & Rachid, S. (2023). Impact of financial inclusion on economic growth: review of existing literature and directions for future research. *International Journal of Social*

- Economics, 50(8), 1105–1122. <https://doi.org/10.1108/IJSE-05-2022-0339>
- [54]. Pande, C. B., Prasad, D., Joshi, R. K., Rawat, M. S. M., & Pant, G. (1998). Allelopathic potential of *Prunus amygdalus* and identification of allelochemicals. *Allelopathy Journal*, 5(1), 83–88. <https://doi.org/10.1016/j.lrp.2013.01.002>
- [55]. Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research : A practical guideline and summary of past research. *Journal of Operations Management*, 30(6), 467–480. <https://doi.org/10.1016/j.jom.2012.06.002>
- [56]. Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2013). *Making Sense of Factor Analysis: The use of Factor Analysis for Instrument Development in Health Research*. Sage Publications, Inc. <https://doi.org/10.1017/CBO9781107415324.004>
- [57]. Rahman, M. O. (2023). The Impact of Microfinance on Poverty Alleviation and Employment Creation. *International Research Journal of Management and Social Sciences*, iv(3). <https://doi.org/10.47941/ijdc.2166>
- [58]. Salkind, N. J. (2012). *Exploring Research (Eighth)*. Pearson education, inc.
- [59]. Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, xxxx. <https://doi.org/10.1016/j.ausmj.2019.05.003>
- [60]. Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach (5th ed.)*. Chichester: John Willey and Sons Ltd. (2010). *Research methods for business: A skill building approach (5th ed.)*. Chichester: John Willey and Sons Ltd.
- [61]. Sekaran, U., & Bougie, R. (2010). *Research Methods for Business: A Skill-Building Approach (Fifth)*. A John Wiley and Sons, Ltd, Publication.
- [62]. Sekaran, U., & Bougie, R. (2016). *Research methods for business: A Skill-Building Approach (7th ed.)*. John Wiley & Sons Ltd. All. <https://doi.org/10.13140/RG.2.1.1419.3126>
- [63]. Seng, K. (2021). The mobile money's poverty-reducing promise : Evidence from Cambodia. *World Development Perspectives*, 22(May), 100310. <https://doi.org/10.1016/j.wdp.2021.100310>
- [64]. Sethi, D., & Acharya, D. (2018). Financial inclusion and economic growth linkage: some cross country evidence. *Journal of Financial Economic Policy*, 10(3), 369–385. <https://doi.org/10.1108/JFEP-11-2016-0073>
- [65]. Shen, Y., Hueng2, C. J., & Hu, W. (2020). Measurement and spillover effect of digital financial inclusion : a cross-country analysis. *Applied Economics Letters*. <https://doi.org/10.1080/13504851.2020.1853663>
- [66]. Suri, T., & Jack, W. (2016). Financial Inclusion-Measurement in the Arab-World. *Science*, 354(6317), 1288–1292.
- [67]. Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>
- [68]. Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, 44(1), 119–134. <https://doi.org/10.1007/s11747-015-0455-4>
- [69]. Wachuku, I., & Amadi, J. C. (2024). Digital Financial Inclusion and Poverty Alleviation in Nigeria. *Journal of Financial Technology and Business Innovation*, 2024(1), 13–32.
- [70]. Wang, J. S. H., Ssewamala, F. M., Neilands, T. B., Bermudez, L. G., Garfinkel, I., Waldfogel, J., Brooks-Gunn, J., & You, J. (2018). Effects of Financial Incentives on Saving Outcomes and Material Well-Being: Evidence From a Randomized Controlled Trial in Uganda. *Journal of Policy Analysis and Management*, 37(3), 602–629. <https://doi.org/10.1002/pam.22065>
- [71]. Ye, Y., Wu, Q., Zhixue Huang, J., Ng, M. K., & Li, X. (2013). Stratified sampling for feature subspace selection in random forests for high dimensional data. *Pattern Recognition*, 46(3), 769–787. <https://doi.org/10.1016/j.patcog.2012.09.005>
- [72]. Zhou, L. (2021). An Approach to Study the Poverty Reduction Effect of Digital Inclusive Finance

from a Multidimensional Perspective Based on Clustering Algorithms. 2021.  
[73]. Zikmund, W. G. (2013). Basic and Applied Research. In Business Research Methods.