International Journal of Multidisciplinary Research and Development
Online ISSN: 2349-4182, Print ISSN: 2349-5979
Impact Factor: RJIF 5.72
Received: 03-11-2018; Accepted: 05-12-2018
www.allsubjectjournal.com
Volume 5; Issue 12; December 2018; Page No. 188-198

The effects of financial inclusion on poverty reduction: The moderating effects of microfinance

Umaru Hussaini[1], Imo Casmir Chibuzo[2]
[1-2] Department of Banking and Finance, Waziri Umaru Federal Polytechnic, Birnin Kebbi, Nigeria

Abstract
Nigeria has witnessed many economic and development plans changes over the last few decades. Several reforms and initiatives aimed at poverty reduction and enhancing financial inclusion had been attempted by the Nigerian government and its development partners in the recent time. The purpose of the study is to investigate the effects of financial inclusion on poverty reduction: the moderating effects of microfinance. Data collection techniques employed was self-administered questionnaire. The questionnaire were administered to a total of 384 to the respondents that are microfinance banks customers from the three senatorial districts in Kebbi State Nigeria by using simple random sampling procedures. In analysing the relationship among the variables, a Partial Least Square (PLS)-Structural Equation Modelling (SEM) technique was adopted. The findings of the study revealed that there is a significant relationship between the financial inclusion and poverty reduction. The results further revealed that microfinance positively moderate the relationship between the variables under studies. The paper recommends the financial inclusion to be more robust in the rural areas and to make microfinance a more effective means of poverty reduction other services such as, education loan, technological support loan, skills training, and housing appliance loan should be included in microfinance services.

Keywords: financial inclusion, microfinance, PLS, SEM

1. Introduction

Financial inclusion is a key element of social inclusion (the antithesis of social exclusion), roughly meaning the opportunity for people to benefit from, and to contribute to the processes of economic and social advancement (Mubiru, 2012) [54]. According to the RBI (2006) [58] financial inclusion is the "provision of affordable financial services" to those who are under-attended by formal agencies of the financial system. These financial services include savings, remittance facilities loan, payments, and insurance services" (RBI, 2006) [58]. Given the definition of financial inclusion, any means for financial inclusion, to begin with, has to be not just easily accessible but also affordable to the borrowers, who do not have access to the formal financial system. it should also ensure that the borrowers are able to reduce their dependence over time on informal sources of finance, which can work towards permanent or effective inclusion of these borrowers into the formal banking network.

Previous research has shown that financial services are not made readily available to everyone that needs them for some reasons which could be lack of awareness (financial illiteracy), unfavorable regulatory environment, rigid product structure, etc. (Dashi, Lahaye, & Rizvanolli, 2013) [26]. Previous data has shown that about 50% of the global adult population aged 15, and above are financially excluded. Of this number, about 2.7 billion adults in the world (equivalent to 70% of the world adult population) lack access to formal financial services which makes financial inclusion a complex matter across different nations (Dashi *et al*., 2013) [26]. Over 2 billion adults in emerging economies such as Nigeria still lack access to basic financial services. A study conducted by Enhancing Financial Innovation and Access (EFInA, (2016) [30] revealed that 41.6% of the Nigerian populace are financially excluded. Analysis of this result showed that regions such as north-east and north-west had the highest exclusion rates of 68% and 56% respectively, this is more than double the percentage of South West and east (EFInA, 2012) [31], financial inclusion survey revealed the number of people excluded in the South West to be 33% and the South East 32%.

Further analysis of the study showed that 53.5% of the financially excluded Nigerian was women, 74.6% were below 45 years (productive age), 23% had no formal education, and 63.9% were resident in rural areas (CBN, 2012).

As part of its reforms, the Central Bank of Nigeria (CBN) and other development partners introduced reforms aimed at reducing the financial exclusion rate to 20% by the year 2020, these reforms includes: implementation of the Micro Small and Medium Enterprises Development Fund (MSMEDF), linkage banking, agent banking tiered Know-Your-Customer (KYC) requirements, credit enhancement programmes, consumer protection, and financial literacy (EFInA, 2012) [31]. Despite the various actions or steps taken by the Govt., the outcome of the programme in financial inclusion invariably remained unsatisfactory. This is supported by the study carried out by EFInA (2016) [30] who revealed that there was no significant improvement in which the financial exclusion rate only reduced by 0.2% to 39.5% in 2014 from 39.7% in 2012.

Nigeria has become number one country with the highest number of people living in extreme poverty, the data revealed an estimated 87 million Nigerians, or around half of the country's population (50%), thought to be living on less than

$1.90 a day (Adebayo, 2018) [3], it surpassed India.

It is argued that the basic cause of poverty is an inadequate flow of income and a dearth of assets. Consequently, savings and credit have a crucial role in improving the economic conditions of poor people since it can enhance an economy's investment efficiency and handle risky economic environment (Kumra & Sharma, 2018) [49]. Therefore, Globally, microfinance is looked upon as a means of credit-based poverty reduction. In some countries globally, microfinance originated from the activity of Non-Governmental Organisations (NGOs) that were aided partly or largely by foreign donors for their lending operations (Chavan & Birajdar, 2009) [18]. There were also cases in Nigeria, where microfinance was promoted directly through the local government, individuals' citizen, organizations, or state-owned banks.

Previous studies such as that of (Mondal, 2015) [53] had established the relationship between financial inclusion and poverty alleviation. Other studies such as Lal (2018) [50] and Mubiru (2012) [54] ware able to establish a positive relationship between financial inclusion and poverty alleviation. Most of the previous studies are conceptual in nature, and few of them that are tested empirically are small in scope. The nature and extent of "Impact of Financial Inclusion on poverty alleviation the moderating effect of microfinance" remained untouched in the existing literature. Thus, the aforesaid gap in the literature necessitated the present work which can prove to be an asset to the policymakers and the stakeholders of cooperative banks both at the national and international level.

It is against this background that the present study aimed at examining the effects of financial inclusion on poverty alleviation in the North-West part of Nigeria: the moderating effects of Microfinance. This paper is divided into five sections, and this introduction serves as section one. Section two (2) presents a literature review and hypothesis development, section three (3) presents the methodology and section four (4) focused on empirical results and discussions of the research implications while the last section five (5) presents conclusion, limitations and future research direction.

2. Literature review and hypothesis development

Nigeria is the world's seventh most populous country with 2.35% of the entire world's population. National Population Commission (NPC) revealed that Nigeria's population grew from 167.9 million in 2011 to 199.3 million as at the end of October 2018. Of this number, 100.8 million (50.6%) were males, and 98.5 million (49.4%) were females. On the assumption of 3.2% annual growth (the rate used by the Commission in 2006), by 2020 Nigeria's population is projected to reach 221.4 million (EFInA, 2012) [31]. Despite various programmes launched by the Nigerian government like Directorate of Food, Roads and Rural Infrastructure (DFRRI) in 1986, National Directorate of Employment (NDE) in 1987, Better Life Programme (BLP) in 1988, Family Support Programme (FSP), Family Economic Advancement Programme (FEAP) in 1997, National Agricultural Land Development Authority (NALDA) in 1992, Agricultural Development Programmes (ADP) in 1991, and the Strategic Grains Reserves Programmes (SGRP) still poverty and income inequality remain an obstinate challenge in Nigeria.

Microfinance banks are often considered as an effective way for poverty reduction, as access to finance enables economic agents to make long-term consumption and investment decisions, participate in productive activities and cope with unexpected short-term shocks (Caskey, Durán, & Solo, 2006) [14]. According to the Central Bank of Nigeria (2013), the current challenge facing Nigerian banks is how to better reach out to the "unbanked" population. In Nigeria, only 47.5% of Nigerians having access to financial services (EFInA, 2016) [30], plans are made by Central Bank of Nigeria (CBN) to make sure that not less than 40 million individuals from all around the states are financially included. However, The Central Bank of Nigeria (CBN) and other stakeholders plan to implement a National Financial Inclusion Strategy that will decrease the percentage of Nigerians adult that are excluded from financial services to 20% by 2020 from 46.3% in 2010. Subsequently, to increase the number of Nigerians adults financially included to 70% by 2020 from 36.3% in 2010 (EFInA, 2012) [31].

Financial exclusion is worst in Nigeria's rural areas, and more advanced in urban centers, specifically in the Southern parts of the country. In a nutshell, Northern Nigeria is particularly lag behind, with 68% of adults excluded in both the North-West and North-East regions with only 19% of formal inclusion in the NorthWest Region. While its 49% in the South-West Region. The "formally excluded" primarily live in the North-Central region (EFInA, 2016) [30]. The majority of Nigerian adults who are fully excluded from formal and informal financial services living in rural areas are estimated to be (80.4%). Three reasons will emerge as causes of this vast exclusion. First, the distance between bank branches in most rural areas makes it expensive and difficult to access financial services. Second, low limit of the profit potential of financial institutions as results of lower levels of economic activity in rural areas. Third, financial literacy and education levels are typically lower in rural areas, making it less likely that customers will make use of financial services and products (EFInA, 2012) [31].

Poverty is general scarcity or dearth or the state of one who lacks a certain amount of material possessions or money (Bhagwati & Panagariya, 2013) [13]. It refers to the deprivation of basic human needs, which commonly include health care, shelter, sanitation, water, food, clothing, and education (Erenstein, 2011) [32]. Poverty may also be understood as experienced as social exclusion, inequitable social relationships, a facet of asymmetrical social status, diminished capacity to participate or to develop significant associates with other people in society (Gebremariam, Gebremedhin, & Jackson, 2004) [36]. Poverty is one of the core problems of every economy all over the world. Approximately, 1.2 billion people about one-fifth of the world population - live below the extreme poverty line of $1 a day in the late 1990s. If we use the $2.5 line, this number rises to 2.8 billion, more than half of the world's population (Chen & Ravallion, 2010) [19]. Studies conducted by Chandran (2011) [17] and Sarma and Pais (2011) [61] concluded that financial inclusion is pro-poor. The authors pointed out that financial inclusion helps low-income households to access basic financial services like savings, credit, and insurance, which, in turn, fosters their financial

autonomy and thus amplifies economic growth. They advocated that enhanced financial services not only raises economic growth but also reduces poverty and income inequalities.

Financial Inclusion

The attention of researchers, policy-makers, and development-oriented agencies on financial inclusion has continued to increase especially been it a tool for economic development, particularly in the area of improving welfare and general standard of living, wealth creation, employment generation, and poverty reduction (CBN, 2018) [16] (CBN 2018) [16]**.** The World Bank (2014) [27, 64] argues that access to and use of basic financial services like savings, payments, loans, and insurance, helps the poor to move out of poverty by economically and socially empowering them. Financial inclusion of the unbanked poor is a critical step that requires bureaucratic support and political will by CBN. Financial inclusion is defined by many scholars in different ways, for instance, financial inclusion is seen as the provision of financial services at affordable costs to vast sections of disadvantaged and low-income groups. According to Rangarajan (2008) [57] defines financial inclusion as “the process of ensuring access to financial services and adequate credit where provided to vulnerable groups such as low-income groups at an affordable cost.” In simple terms, financial inclusion is about including the excluded in the financial system of the country and to ensure that their financial and social security needs are taken care of through appropriate financial service providers.

Financial inclusion is been viewed as: The provision of financial services at affordable costs to and low-income segments and sections of the disadvantaged of society (Mohseni-Cheraghlou, 2015) [52]. These services include access to Account at a Formal Financial Institution, Access to Formal Accounts, Use of Formal Accounts, Mobile Payments, Savings, Credit and Insurance and pensions (Allen *et al.*, 2014; Demirgüç-Kunt & Klapper, 2012; Mohseni-Cheraghlou, 2015; World Bank, 2014) [13, 27, 52, 27]. The United Nations (UN) defines the goals of financial inclusion as: (1) Access at a reasonable cost for all households with many financial services, including transfer and payment services, deposit or savings services, credit and insurance; (2) sound and safe institutions governed by precise regulation and industry performance standards; (3) financial and institutional sustainability, to ensure continuity and certainty of investment; and (4) Competition to ensure choice and affordability for clients (Valerio, Parton, & Robb, 2014; World Bank, 2014) [64].

The term financial inclusion emerged in the early 2000s, as a result of the World Bank research findings that emphasized poverty as a direct consequence of financial exclusion (Zauro, Saad and Sawandi, 2016) [66]. The UN sets targets to enhance financial inclusion which includes having a formal bank account, access to the mobile payments services, access to formal savings, access to credit facilities, insurance, and pensions (Demirgüç-Kunt & Klapper, 2012) [27]. To achieve these targets, Nigeria joined other 20 developing countries and made financial inclusion commitment referred to as the “Maya Declaration,” in Mexico. The participating countries in the declaration improved in September 2012 from 20 to 35, which could culminate into a global policy forum referred to as the Alliance for Financial Inclusion (AFI) with its headquarters located in South Africa (Cape Town).

In addition, according to the EFInA (2016) [31] financial inclusion is achieved when financial services are provided at an affordable cost and adults have easy access to many formal financial services that meet their needs. This is in support of the elements used in the definition provided by CBN (2012) which include:

i) Access to and usage of a wide range of financial products and services such as insurance, credit, savings, pension, and payments products.
ii) Easy access to financial products and services financial products, this financial product, and services must be within reach of all sections of the populace and should not have onerous requirements.
iii) Provision of affordable financial services to low-income groups.
iv) Financial products must be designed according to the need of customers (financial excluded) persons and should consider access to distribution channels and income levels. (Alkire & Sumner, 2013; Mondal, 2015) [6, 53].

A well-developed financial system can effectively reduce poverty (Mondal, 2015) [53]. Access to financial services enables the poor to fight the various dimensions of poverty and make improvement in their lives and provides momentum for growth and development (Avais, 2014) [10]. Financial inclusion through cooperative banks is the key to empowerment of poor, underprivileged and low-skilled rural households (Jaiswal & Bhasin, 2015) [45]. Through financial inclusion, microfinance banks increase the economic opportunities for the poor and low-income people, which lead towards a positive result in social progress, economic development, economic empowerment and social/ political/ legal empowerment (Mondal, 2015) [53]. Thus, it is hypothesized that.

H_1: Financial inclusion has a positive relationship with poverty reduction.

Microfinance

Over the last three decades, the acceptance of microfinance has progressively increased. Microfinance has unlocked the entrepreneurial ambitions of some of the world’s poorest people (Taiwo, 2012) [63]. It is defined as a provision of credit, thrift, other financial services, and products of very small amounts to the poor in both urban, semi-urban, and rural areas so as to enable them to improve their living standard and raise their income levels (Kumra & Sharma, 2018) [49]. Microfinance also refers to a wide range of organizations dedicated to providing micro financial services including non-government organizations, credit unions, co-operatives, private commercial banks, non- banking financial institutions and some state-owned banks. The establishment of Microfinance is centered on economic development programms that aims at poverty reduction through financial services to the micro-entrepreneurs, low-income earners and poor that cannot access similar services from the formal

financial market (Ashraf & Ibrahim, 2014; Edeme & Nkalu, 2019).

Microfinance is frequently defined as the provision of financial products and services to low economic standing excludes them from formal financial programs or institutions. These programs can include savings, small-scale venture capital, microcredit, and some forms of insurance. Access to each of these services is provided on a micro-scale allowing those with limited financial means to participate. Microfinance also from other perspective involves the provision of financial services such as loans, savings, and insurance to poor people living in rural and urban settings who are financially excluded from the formal financial sector. The services are provided by formal, semi-formal and informal organizations. According to Kumra and Sharma (2018) [49] characterized microfinance the following:

- Provision of small loans for the working capital to the rural poor.
- Minimal appraisal of investments and borrowers as compared to commercial banks.
- Demand no collateral. However, these bodies enforce compulsory savings and group guarantees. That is not based on legal procedures and system but on trust.
- Microfinance institutions extend larger loans to customers continually, based on their loan repayment history.

In this regard, the establishment of microfinance institutions means the procedure of making an available very small proportion of financial services to the poor with the purpose of making them takes up new opportunities which the development process offers.

In addition, it is responsible for creating and sustaining new income- generating activities in poor areas traditionally dependent on subsistence farming. Many in the Western countries saw microfinance as a essential innovation in the fight against poverty in the developing world (Taiwo, 2012) [63]. From Hennessey (2006) report cited in Taiwo 2012 [63], it is certain that microfinance, in its various adaptable models can help the world in reducing and alleviating poverty and enhance economic development, particularly in developing economies. The theoretical thesis that microfinance is an effective tool for reducing poverty at the macro level was tested by Zhang (2017) [67] using cross-country panel data from 106 countries developed and developing countries for the period, 1998-2013, taking into cognizance the potential problem of sample selection bias and endogeneity.

Microfinance develops savings habit among people (Kumra & Sharma, 2018) [49]. Poor people with meager income can also save and become bankable. The financial resources generated through savings and microcredits obtained from banks are utilized to provide loans and advances to its members. Microfinance programmes help the poor by improving entrepreneurial skills and encourage them to exploit business opportunities. They also help them by providing self-employment opportunities. Employment increases income level which in turn reduces poverty.

Various studies have been carried out to study the relationship between poverty reduction and microfinance. For instance, Esnard-Flavius and Aziz (2011) [33] revealed microfinance as a poverty alleviation tool by assisting the poor in providing microcredit that will affect their businesses and welfare. According to Kumra and Sharma (2018) [49], Micro financing has been prosperous in taking institutionalized credit to the doorstep of poor and have made them socially and economically sound. In addition, Al-Mamun *et al*. (2013) [5] observed that microcredit serves as an empowerment mechanism for women. The studies of Bebczuk and Haimovich (2007) [11] Ghalib, Milki, and Imai (2012) [38] Idowu and Oyelele (2012) [43] and Nawaz (2010) [55] reported a positive relationship between microfinance and poverty reduction. On the contrary, Al-Mamun, Hasan, and Rana (2013) [5] reported a negative relationship, between microfinance and poverty alleviation. Also, no relationship was reported. For instance, Crépon, Devoto, Duflo, and Parienté (2011) [24] found no relationship between microfinance and poverty alleviation.Thus the paper hypothesized that:

H_2: Microfinance has a positive relationship with poverty reduction

H_3: Microfinance moderate the relationship between financial inclusion and poverty reduction

Poverty Reduction

Researchers have identified different approaches to measuring poverty. For instance, Ruggeri Laderchi, Saith, and Stewart (2003) [59] identified four different approaches to the definition and measurement of poverty; the participatory, social exclusion, capability, and monetary approaches.

In the opinion of Kingsley (2013) [47] financial inclusion holds a promise of addressing income inequality, underdevelopment, universal poverty, and welfare for the less privileged segments of the society. This is in line with the view of Kofi Annan (former UN Secretary-General), who opined that financial exclusion is the great challenge before us and we have to attack it together so as to build inclusive financial sectors that will impact positively to the people's lives. This means that the financially included society is such a society with enhanced economic activities, a low level of poverty, reasonable economic development and growth (Zauro, Saad, & Sawandi, 2016) [66].

An Overview of financial inclusion in Nigeria

In the provision of financial services in Africa, Nigeria was left behind its peer countries in Africa. For instance, In 2010 only 36.3% of the country's adult population, were served by formal financial services compared to 41% in Kenya and 68% in South Africa. A survey conducted in Nigeria in 2016 by (FII, 2016) revealed that about 65.0% of adult's populace was financially excluded without any form of access to financial services. Nigeria has 28.6 million bank accounts with a population of over 168 million people, and 89.7 million adults (CBN, 2012; EFInA, (2012) [31]. CBN in collaboration with other stakeholders launched the National Financial Inclusion Strategy (NFIS) in 2012 targeted reducing the financial exclusion rate to 20% by 2020. Specifically, by increasing the financially included Nigerian adult with access to payment services from 21.6% in 2010 to 70% in 2020, while those with access to savings should increase from 24.0% to 60%; and

Credit from 2% to 40%, Insurance from1% to 40% and Pensions from 5% to 40%, within the same period (Abiola & Olausi, 2014; CBN, 2012; Kama & Adigun, 2013; Sanusi, 2012) [2, 46, 60].

In order to improve the provision of financial services to Nigerian rural areas, previous governments have initiated a series of publicly-financed rural/ microcredit policies and programmes targeted in reaching poor household. Prominent among such programmes were the concessionary interest rate, sectoral allocation of credits, the Agricultural Credit Guarantee Scheme (ACGS), and the Rural Banking Programme. Other institutional arrangements were the establishment of the Nigerian Agricultural Insurance Corporation (NAIC), National Directorate of Employment (NDE), Nigerian Agricultural and Co-operative Bank Limited (NACB), the Community Banks (CBS), the Family Economic Advancement Programme (FEAP), the Peoples Bank of Nigeria (PBN). In 2000, Government merged the PBN, NACB, and FEAP to form the Nigerian Agricultural Cooperative and Rural Development Bank Limited (NACRDB) to improve the provision of financial services to the agricultural sector (Ihugba, Bankong, & Ebomuche, 2013) [44].

Strategies for achieving the financial inclusion targets

To meet up with stated targets, efforts will be concentrated in the area of agent banking, mobile banking, linkage banking, and client banking.

- **Agent Banking:** is the provision of banking services outside traditional bank branches through mobile phones, technology such point of sales (POS) devices and touch points such as petrol station and existing retail stores.
- **Mobile Banking:** Provision of access to financial services through the use of mobile wallets as intermediary virtual money accounts or mobile phones that are directly linked to a bank account.
- **Linkage models:** Business cooperation and enhancement of financial between traditional financial institutions (Deposit Money Banks or Development Finance Institutions), microfinance banks/institutions, and government for providing wholesale funding for and lending transactions.

3. Methodology

The study aims at examining the effects of financial inclusion on poverty alleviation the moderating effects of microfinance banks in Nigeria. The scope of the study covers three Senatorial districts of Kebbi state in Nigeria. According to Creswell (2014) [25], researchers attempting to conduct a survey of any sort should pay ample attention to their sampling, which is derived through careful selection of the sampling design and procedures. The present study adopted stratified and simple random sampling methods to select the sample. A total population comprising of 4,440,050 with 1,110,025 poor households located in three senatorial districts was selected for the study (City Population, 2018) [22]. To arrive at a sample for this study, Krejcie and Morgan (1970) recommend the use of 384 as a maximum sample if the population is 1,000,000 and above. A total sample of 384 microfinance banks customers from the three senatorial districts in Kebbi State was selected for this study. Kebbi state was selected for this study because the existing statistics indicate that there is a poverty level of 72% in the state (Ango, 2014) [8].

Questionnaire Development

The questionnaire was consists of two parts. The first part consists of 29 items financial inclusion, Microfinance, and poverty reduction. The second part of the questionnaires is the demographic section related to respondent's background consisting of 5 items (gender, age, income, employment, and education level). A five-point Likert Scale was used to measure the three variables namely financial inclusion, Microfinance, and poverty reduction. The scales were ranging from "1" strongly disagreed to "5" strongly agreed. financial inclusion was measured by adapting indicators suggested by (Afrin, Haider, & Islam, 2017; Mindra, Moya, Zuze, & Kodongo, 2017) [4, 51]. Microfinance measures were adapted from (Taiwo, 2012) [63]. Meanwhile, poverty reduction e indicators were adapted from (Lal, 2018) [50]. %. All the items developed were anchored onto a five-point Likert scale as recommended by (DeVellis, 2003).

The study hypotheses are summarized in Fig. 1 below:

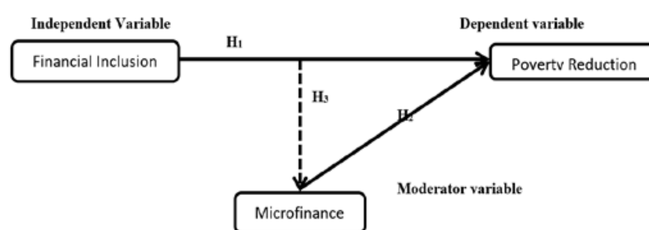

Fig 1: Conceptual framework

4. Data Analysis

Response Rate of the Questionnaires

The research used all 10 Microfinance located in the three senatorial districts of the state from the sampling frame from each microfinance, 38 customers were randomly selected to participate in the study from the 6 microfinance, while 39 customers were randomly selected to participate in the study from the 4 microfinance. Therefore, 384 questionnaires were randomly distributed to the beneficiaries, but 318 responded back. Out of 318 respondents, 25 questionnaires were rejected because of either incomplete responses or the problem of outliers, so the final sample size came to 293 respondents. The effective response rate came out to be 76.30. Table 1 below shows the summary of questionnaire response.

Table 1: Response Rate of the Questionnaires

S/N	Response	Frequency	%
1	No. of distributed questionnaires	384	100
2	Completed and returned questionnaires	318	82.8
3	Unusable questionnaires:	25	6.51
	Incompleteness and non-eligibility	9	2.34
	Univariate and multivariate outliers	16	4.17
4	Returned and usable questionnaires	293	76.30

Respondent profile

Respondents in this study consist of financial inclusion customers of microfinance. All respondent represented

financial inclusion of Kebbi state. Table 2 shows the demographic profile of the respondents.

Table 2: Demographics

	Frequency	Percentage %
Gender		
Male	261	89.1
Female	32	10.9
Age of the Respondents		
20-29	19	6.5
30-39	217	74.1
40-49	54	18.4
50-59	3	1.0
Income Level		
Below 18,000	173	59
18,000-20,000	62	21.2
20,001-30,000	42	14.3
Above 30,000	16	5.5
Employment Status		
Unemployed	52	17.7
Farming	184	68.2
Casual Employer	8	2.7
Civil Servant	23	7.8
Retired	26	8.9
Highest Educational Qualification		
Primary	97	33.1
SSCE	164	56.0
ND/NCE	17	5.8
HND/B.SC	10	3.4
Post Graduate	5	1.7
Residence of respondent		
Rural	273	93.2
Semi-Rural	20	6.8

5. Results

A two-stage analytical procedure was used to analyze the data. Firstly, the measurement model was assessed, and secondly, the structural model was examined. Specifically, Smart PLS 3.0 was used to conduct the analysis (Hair Jr, Black, Babin, & Anderson, 2010) [41]. Bootstrapping with 293 cases and 500 re-samples was used to assess the path significance.

Assessment of the measurement model

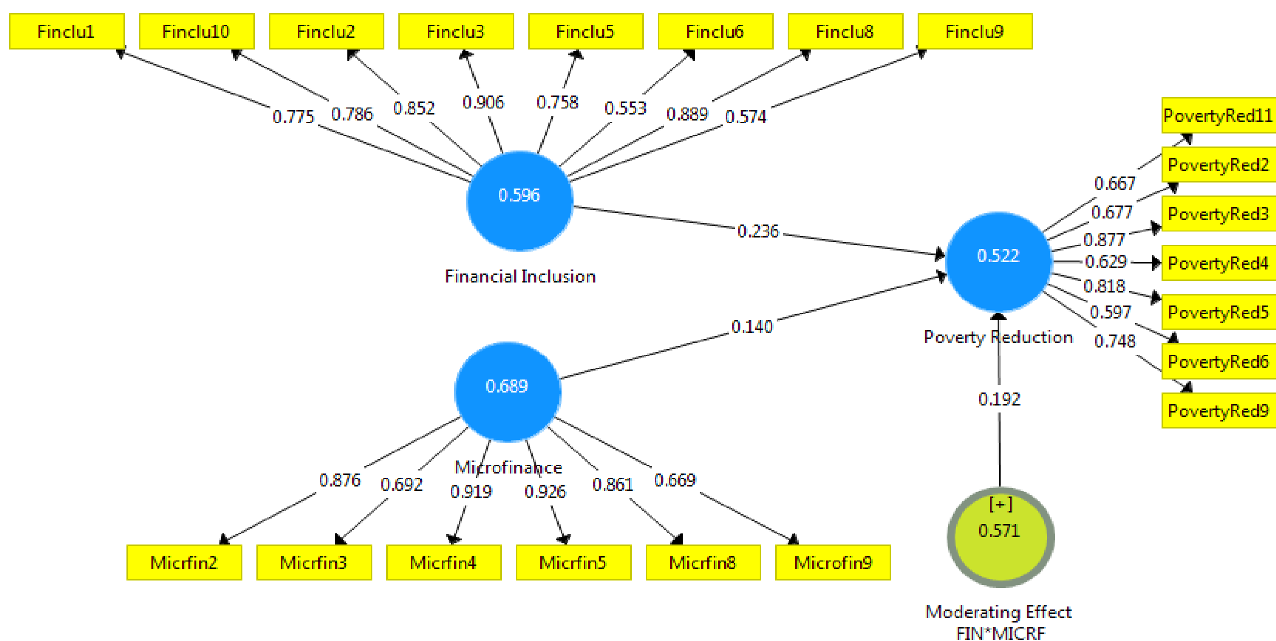

Fig 2: Measurement Model

This survey examines the reliability and validity of our constructs (see fig. 2). Convergent validity exists if a group of indicators measures one common factor. Composite reliability and average variance extracted were calculated using the procedures suggested by (Ab Hamid, Sami, & Mohmad Sidek, 2017; Fornell & Larcker, 1981) [1, 34]. Cronbach's alpha values of all factors are all above 0.842. Composite reliability (CR) for each construct is at least 0.883, the individual item loading varied from 0.553 to 0.926, and average variance extracted is at least 0.522.

Additionally, discriminant validity was tested by comparing the relationship between the values of AVEs and the shared variances among constructs as Hair, Black, Babin, and Anderson (2010) [41] suggested (own loading are greater than cross-loadings). As shown in Table 4, none of the squares of correlations between constructs was higher than the value of the related AVE, which supported the discriminant validity. Besides, the square root of each construct's AVE is greater than its highest correlation with any other construct, thus ensuring discriminant validity (Chin, 1998; Fornell & Larcker, 1981) [20, 34]. Therefore, the measurement model was considered acceptable with the proof of discriminant validity, convergent validity, and adequate reliability. Tables 3 and 4 provide all these values and suggest sufficient convergent validity and reliability.

Table 3: Convergent validity and reliability

Construct	Construct Standardized loading	Cronbach's Alpha	Composite reliability
Financial Inclusion		0.897	0.920
Finclu1	0.774		
Finclu10	0.786		
Finclu2	0.851		
Finclu3	0.905		
Finclu5	0.758		
Finclu6	0.555		
Finclu8	0.888		
Finclu9	0.576		
Microfinance		0.906	0.929
Micrfin2	0.874		
Micrfin2	0.690		
Micrfin2	0.919		
Micrfin2	0.926		
Micrfin2	0.861		
Micrfin2	0.671		
Poverty Reduction		0.843	0.882
PovertyRed11	0.688		
PovertyRed2	0.656		
PovertyRed3	0.888		
PovertyRed4	0.609		
PovertyRed5	0.836		
PovertyRed6	0.574		
PovertyRed9	0.754		

Table 4: Discriminant validity test

	Mean	Std. Dev	Financial Inclusion	Microfinance	Poverty Reduction
Financial Inclusion	4.1246	0.4604	0.772		
Microfinance	3.9859	0.4945	0.215	0.830	
Poverty Reduction	3.8120	0.4866	0.313	0.276	0.723

Note: Diagonal entries (in bold) are average variances extracted; entries below the diagonal are correlations, and the entries above the diagonal represent the squared correlations.

Assessment of the structural model

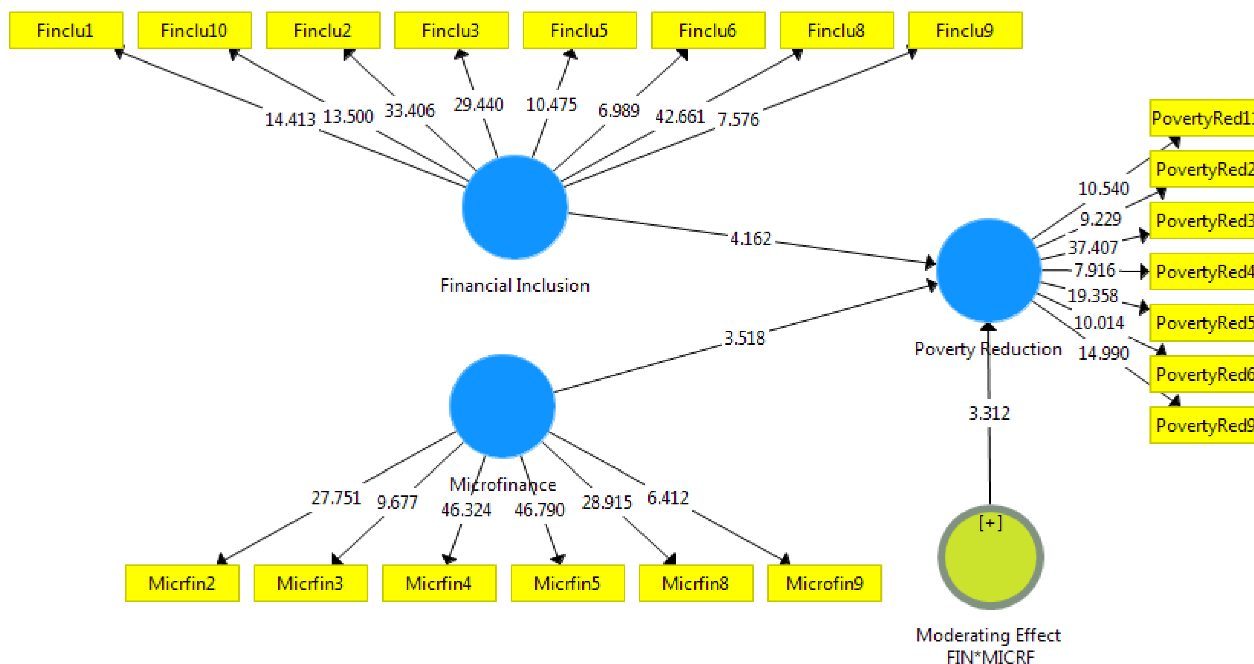

Fig 3: Structural Model

In order to assess the structural model (i.e Fig 3), the path coefficients, including an assessment of their significance, the coefficient of determination R^2, and the Stone-Geisser Q^2 were examined (Chin, 1998; Geisser, 1974; Hair, Sarstedt, Ringle, & Mena, 2012; Stone, 1974) [21, 37, 40, 62]. Results show that financial inclusion is positively related to poverty reduction ($\beta = 0.236$, $p < 0.000$), supporting H1. Microfinance is positively related to poverty reduction ($\beta = 0.140$, $p < 0.000$), supporting H2. Overall satisfaction of the model is revealed in the coefficient of determination R^2 of the endogenous latent variables, a common indicator in multiple regression analysis. The result of the model shows an R^2 of 0.169 for poverty reduction. Blindfolding procedure (omission distance = 7) to evaluate Stone-Geisser criterion revealed Q^2 (0.078) a value greater than 0 for poverty reduction, thus providing support for the model's predictive relevance (Joseph. Hair, Ringle, Sarstedt, & Vinzi, 2013) [54].

Table 5: path Coefficients

Hypothesis	β	Std Dev	T-Value	P Values
Financial Inclusion -> Poverty Reduction	0.236	0.057	4.162	0.000
Microfinance -> Poverty Reduction	0.140	0.040	3.518	0.000
Moderating Effect FIN*MICRF -> Poverty Reduction	0.192	0.058	3.312	0.000

PLS product indicator approach (Chin, Marcolin, & Newsted, 2003) [21] was applied to detect the moderating effect of microfinance on the relationship between financial inclusion and poverty reduction. To test the possibility of such effect, mean-centered indicators of the predictor (financial inclusion) and the moderator (microfinance) were multiplied to create an interaction construct (financial inclusion × microfinance) to predict poverty reduction (Henseler & Fassot, 2010) [42]. Following the guidelines of (Berger, Hasan, & Zhou, 2010; Chin *et al*., 2003) [21], a bootstrap resembling procedure was performed to assess whether the interaction effect is significant. The results of 500 re-samples indicated that path coefficient of 0.192 for the interaction construct is significant at $p < 0.000$ (t-value = 3.312). As suggested by (Henseler & Fassot, 2010) [42], the moderating effect was further assessed by comparing the proportion of variance explained (as expressed by the coefficient of determination R^2) of the main effects model with the R^2 of the interaction model 0.169.

The results showed that the size of the moderating effect is small ($f^2 = 0.040$; Cohen (1988) [23]. Consequently, it is confirmed that microfinance moderates the relationship between financial inclusion and poverty reduction, thus supporting H3. Fig. 4 illustrates the ordinal relationship between financial inclusion and microfinance in the prediction of poverty reduction. The graph clearly demonstrates that low levels of financial inclusion have a weaker positive effect on poverty reduction compared to the higher level of financial inclusion characterized by the area with high microfinance (see Fig. 4).

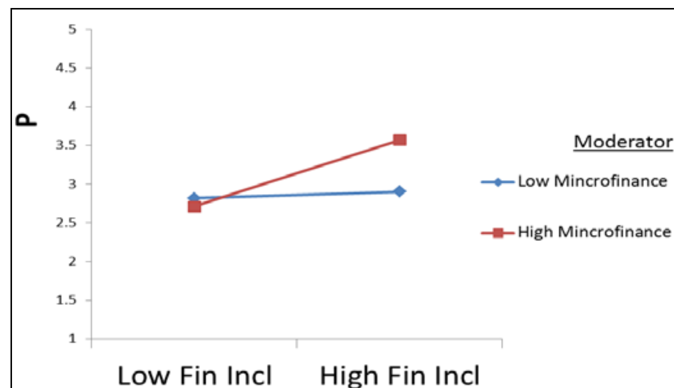

Fig 4: The plot of the interaction between financial inclusion and microfinance in predicting poverty reduction.

6. Conclusion and Limitations

The objective of the study was to evaluate the moderating effects of microfinance in the relationship between financial inclusion and poverty reduction. The model was tested to verify the hypotheses with respect to financial inclusion and microfinance. Concerning the academic contribution of this study, we have to highlight that there are studies in the literature about the proposed model with regard to the influence of financial inclusion and microfinance in the poverty reduction. However, this study is pioneering research in the field of empirical analyses regarding the moderating effect of microfinance on the relationship between financial inclusion and poverty reduction.

The novelty of this research lies in the study of financial inclusion and microfinance with their effects on poverty reduction with regard to a port of call in the West African region where there is still little research on poverty reduction. In addition, this research analyzes the moderating role of microfinance as proposed in the model. the study is relevant as it contributes in the microfinance, financial inclusion, and poverty reduction context. In addition, Our main theoretical contribution is the study of the moderating effects of microfinance on the relationship between financial inclusion and poverty reduction.

Results show that financial inclusion positively and significantly impacts on poverty reduction. The finding of this research is consistent with previous research suggesting that when there is financial inclusion in the rural areas, poor households are likely to use the opportunity of having financial services available to invest and seek for financial services that will increase their level of standard. (e.g., Jaiswal & Bhasin, 2015; Mondal, 2015) [45, 53]. Also, the results are also consistent with the finding of Ogunleye (2017) [56] that financial inclusion of the excluded poor adult population in Nigeria could unlock their productive potentials by helping them to be involved in productive activities.

Future research should study other factors that may influence the variables in the proposed model, for instance future researchers should consider government policy, interest rate, and risk management the their study. It would also be useful to analyze other potential moderators, such as risk culture, bank size, and bank age. Finally, this study considered only Kebbi state in future studies; it would be of value to select other states in Nigeria.

7. References

1. Ab Hamid MR, Sami W, Mohmad Sidek MH. Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. Journal of Physics: Conference Series. 2017; 890(1):https:// doi.org/ 10. 1088/1742-6596/890/1/012163
2. Abiola I, Olausi AS. The Impact of Credit Risk Management on the Commercial Banks Performance in Nigeria. International Journal of Management and Sustainability. 2014; 3(5):295-306. https://doi.org/10. 18488/journal.11/2014.3.5/11.5.295.306
3. Adebayo B. Nigeria overtakes India in extreme poverty ranking. Retrieved, 2018, from https://edition. cnn.com/2018/06/26/africa/nigeria-overtakes-india-extreme-poverty-intl/index.html
4. Afrin S, Haider MZ, Islam MS. Impact of financial inclusion on technical efficiency of paddy farmers in Bangladesh. Agricultural Finance Review. 2017; 77(4):484-505.
5. Al-Mamun CA, Hasan MN, Rana A. Micro-credit and poverty alleviation : The Case of Bangladesh. World Journal of Social Sciences. 2013; 3(1):102-108.
6. Alkire S, Sumner A. Multidimensional poverty and the post-2015 MDGs. Development (Basingstoke). 2013; 56(1):46-51. https://doi.org/10.1057/dev.2013.6
7. Allen F, Carletti E, Cull R, Qian JQJ, Senbet L, Valenzuela P. The African financial development and financial inclusion gaps. Journal of African Economies. 2014; 23(5):614-642. https://doi.org/10.1093/jae/eju015
8. Ango JM. Report on the Rapid Assessment of the Development Status of Kebbi State At Twenty Three, 2014.
9. Ashraf MA, Ibrahim YB. Poverty alleviation and identifying the barriers to the rural poor participation in mfis: A case study in bangladesh. Journal of Economic Cooperation and Development. 2014; 35(3):99-132.
10. Avais M. Financial Innovation and Poverty Reduction. International Journal of Scientific and Research. 2014; 4(1):105.
11. Bebczuk R, Haimovich F. MDGs and Microcredit: An Empirical Evaluation for Latin American Countries. CEDLAS and Universidad Nacional de La Plata, Argentina, 2007.
12. Berger AN, Hasan I, Zhou M. The effects of focus versus diversification on bank performance: Evidence from Chinese banks. Journal of Banking and Finance. 2010; 34(7):1417-1435. https://doi.org/10. 1016/j. jbankfin. 2010.01.010
13. Bhagwati J, Panagariya A. Why Growth Matters: How Economic Growth in India Reduced Poverty and the Lessons for other Developing Countries. New York: PublicAffairs, 2013, 280. US$28.99. ISBN 978-1610392716. New York: NY Public Affairs. https://doi.org/10.1111/pirs.12072
14. Caskey JP, Durán CR, Solo TM. The Urban Unbanked in Mexico and the United States (No. WPS3835), 2006.
15. CBN. National financial inclusion strategy. Central Bank of Nigeria, (October), 2012, 1-64. Retrieved from https://www.cbn.gov.ng/Out/2013/CCD/NFIS.pdf%0Ahttp://www.afi-global.org/sites/ default/ files/ publications/

mfg-en-paper-national-financial-inclusion-strategy-oct-2012.pdf
16. CBN. A Quarterly Publication of the Financial Secretariat 2nd Quarter. Central Bank of Nigeria Financial Inclusion Newsletter. 2018; 3:2.
17. Chandran DS. Financial Inclusion Strategies for Inclusive Growth in India. *Ssrn*, 2011, https://doi.org/10. 2139/ ssrn.1930980
18. Chavan P, Birajdar B. Micro finance and financial inclusion of women: An evaluation. Reserve Bank of {I} ndia Occasional Papers. 2009; 30(2):109-129.
19. Chen S, Ravallion M. The Developing World Is Poorer Than We Thought, But No Less Successful In The Fight Against Poverty. The Quarterly Journal of Economics. 2010; 125(4):1577-1625.
20. Chin WW. The Partial Least Squares Approach to Structural Equation Modeling. In Mordern Methods for Business Research. Mahwah, New Jersey: Lawrence Eribaum Associates, 1998, 295-336 https://doi.org/ 10. 1016/j.aap.2008.12.010
21. Chin WW, Marcolin BL, Newsted PR. A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/ Adoption Study. Information Systems Research. 2003; 14(2):189-217. https://doi.org/ 10.1287/ isre.1 4.2. 189. 16018
22. City Population. KEBBI State in Nigeria. Retrieved, 2018, from https://www. citypopulation.de/php/nigeria-admin.php?adm1id=NGA022
23. Cohen J. Statistical Power Analysis for the Behavioral Sciences (Second). United States of America: Lawrence Erlbaum Associates, 1988.
24. Crépon B, Devoto F, Duflo E, Parienté W. Impact of microcredit in rural areas of Morocco: Evidence from a Randomized Evaluation, 2011.
25. Creswell JW. Research design : qualitative, quantitative, and mixed methods approaches (4th ed.), 2014.
26. Dashi E, Lahaye E, Rizvanolli R. Trends in International Funding for Financial Inclusion (No. WP88163), 2013.
27. Demirgüç-Kunt A, Klapper LF. Measuring Financial Inclusion: The Global Findex Database. The World Bank Group, 2012, 1-58. https://doi. org/10.1596/978-0-8213-9509-7
28. DeVellis RF. Scale Development: Theory and Applications 3rd Edition. SAGE publication Ltd. Washington DC: SAGE Publications Ltd, 2003.
29. Edeme RK, Nkalu CN. Reducing Inequality in Developing Countries Through Microfinance: Any Correlation So Far? In In Handbook of Research on Microfinancial Impacts on Women Empowerment, Poverty, and Inequality IGI Global, 2019, 281-301.
30. EFInA. EFInA Access to Financial Services in Nigeria Survey Key Findings. 2012, 1-71. https:// doi. org/ 10.1016/j.appet.2009.05.008
31. EFInA. EFInA Access to Financial Services in Nigeria Survey Key Findings, 2012.
32. Erenstein O. Livelihood assets as a multidimensional inverse proxy for poverty: A district-level analysis of the Indian Indo-Gangetic plains. Journal of Human Development and Capabilities. 2011; 12(2):283-302. https://doi.org/10.1080/19452829.2011.571094
33. Esnard-Flavius T, Aziz Z. Reorientation of policies in agricultural financing. Asian Academy of Management Journal. 2011; 16(1):95-118. https://doi. org/ 10. 2307/1233970
34. Fornell C, Larcker DF. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research. 1981a; 18(1):39.
35. Fornell C, Larcker DF. Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. Journal of Marketing Research. 1981b; 18(3):382.
36. Gebremariam GH, Gebremedhin TG, Jackson RW. The Role of Small Business In Economic Growth And Poverty Alleviation In West Virginia : An Empirical Analysis (No. 10). Denver, Colorado, 2004.
37. Geisser S. Biometrika Trust A Predictive Approach to the Random Effect Model. Biometrika. 1974; 61(1):101-107.
38. Ghalib KA, Milki I, Imai KS. Micro ofinance and its role in household povertty reduction: find dings from m Pakistan (No. BWPI W rking Paper, 2012.
39. Hair JF, Ringle CM, Sarstedt M, Vinzi E. Editorial Partial Least Squares Structural Equation Modeling : Rigorous Applications, Better Results and Higher Acceptance. Long Range Planning. 2013; 46(1):12. https://doi. org/10.1109/MCSE.2008.47
40. Hair JF, Sarstedt M, Ringle CM, Mena JA. An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the Academy of Marketing Science. 2012; 40(3):414-433. https:// doi.org/10.1007/s11747-011-0261-6
41. Hair JF, Black WC, Babin BJ, Anderson RE. Multivariate Data Analysis (Seventh). New York: Pearson prentice hall, 2010, https://doi.org/ 10. 1016/j.ijpharm.2011.02.019
42. Henseler J, Fassot G. Testing Moderating Effects in PLS Path Models: An Illustration of Available Procedures. In Handbook of Partial Least Squares: Concepts, Methods and Applications London: Springer Heidelberg Dordrecht, 2010, 713-737.
43. Idowu A, Oyelele OA. Impact of Microfinance Banks on Poverty Alleviation in Selected Local Government Areas of Oyo State, Nigeria. European Journal of Business and Management. 2012; 4(21):125-138.
44. Ihugba OA, Bankong B, Ebomuche NC. The Impact of Nigeria Microfinance Banks on Poverty Reduction: Imo State Experience. International Letters of Social and Humanistic Sciences. 2009-2013; 16:92-113.
45. Jaiswal B, Bhasin S. Role of Cooperative Banks in Financial Inclusion for Inclusive Growth of India. International Journal of Management and Social Sciences Research-i Plore International Research Journal Consortium. 2015; 4(7):6-18.
46. Kama U, Adigun M. Financial Inclusion In Nigeria : Issues And Challenges. Abuja Nigeria, 2013.
47. Kingsley CM. A global view on financial inclusion: perspectives from a frontier market. The Guardian. The Guardian News Paper, 2013.
48. Krejcie RV, Morgan DW. Determining sample size for research activities. Educational and Psychological

Measurement. 1970; 38(1):607-610.
49. Kumra K, Sharma VK. Microfinance: A Tool For Poverty Alleviation. Journal of Research in Commerce & Management. 2018; 7(2):11-19.
50. Lal T. Impact of financial inclusion on poverty alleviation through cooperative banks. International Journal of Social Economics. 2018; 45(5):808-828.
51. Mindra R, Moya M, Zuze LT, Kodongo O. Financial self-efficacy: a determinant of financial inclusion. International Journal of Bank Marketing. 2017; 35(3):338-353.
52. Mohseni-Cheraghlou A. Reducing poverty through promoting financial inclusion, shared prosperity and social solidarity: the role of Islamic finance and qard hassan. In 4th International Conference on Inclusive Islamic Financial Sector Development. 2015; 53:9.
53. Mondal S. Financial Inclusion: a step towards eradicate poverty. American Journal of, 2015.
54. Mubiru J. Financial Inclusion as tool for Combating Poverty: Joseph Mubiru Memorial Lecture. In Bangladesh Bank, 2012.
55. Nawaz S. Microfinance and poverty reduction: Evidence from a village study in Bangladesh. Journal of Asian and African Studies. 2010; 45(6):670-683.
56. Ogunleye TS. Financial Inclusion and the Role of Women in Nigeria. African Development Review. 2017; 29(2):249-258. https://doi.org/10.1111/1467-8268.12254
57. Rangarajan C. Report of the Committee on Financial inclusion India, 2008.
58. RBI. Economic growth, financial deepening and financial inclusion. In Address by Dr Rakesh Mohan, Deputy Governor of the Reserve Bank of India, at the Annual Bankers' Conference Hyderabad, 2006, 1-18.
59. Ruggeri Laderchi C, Saith R, Stewart F. Does it matter that we do not agree on the definition of poverty? A comparison of four approaches. Oxford Development Studies. 2003; 31(3):243-274. https://doi.org/ 10.1080/ 1360081032000111698
60. Sanusi lamido S. National Financial Inclusion. In Welcome / Keynote Address Mallam Sanusi Lamido Sanusi, Con, Governor, Central Bank Of Nigeria At The Launching Of The National Financial Inclusion Strategy Transcorp Hilton Hotel, Abuja, Nigeria, 2012, 1-5.
61. Sarma M, Pais J. Medical tourism and the role of e-medical tourism intermediaries in Greece. Journal of International Development. 2011; 23:613-628. https:// doi. org/10.1002/jid
62. Stone M. Cross-Validatory Choice and Assessment of Statistical Predictions. Journal of the Royal Statistical Society. Series B (Methodological). 1974; 36(2):111-147.
63. Taiwo JN. The impact of microfinance on welfare and poverty alleviation in Southwest Nigeria, 2012.
64. Valerio A, Parton B, Robb A. World Bank-Entrepreneurship Education and Training Programs around the World, 2014, https://d oi.org/ 10.1596/978-1-4648-0202-7.
65. World Bank. Global Financial Development Repot: Financial Inclusion. Washington, 2014, DC 20433.
66. Zauro NA, Saad RAJ, Sawandi N. The Moderating Effects of Financial Inclusion on Qardhul Hassan Financing Acceptance in Nigeria: A Proposed Framework. International Journal of Economics and Financial Issues. 2016; 6(7S):143-148.
67. Zhang Q. Does microfinance reduce poverty? Some international evidence. The B.E. Journal of Macroeconomics. 2017; 17(2):1-13.