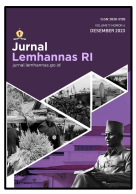

Jurnal Lemhannas RI (JLRI)
E-ISSN : 2830-5728, P-ISSN: 2252-8555
Vol. 12 No. 2, June 2024: 220-236
DOI: 10.55960/jlri.v12i2.963
https://jurnal.lemhannas.go.id/index.php/jkl

The Impact of Financial Inclusion on Income Equality and the Prospect of Cashless Policy for Economic Resilience in Nigeria

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Article Info:

Keywords:
cashless policy, economic resilience, financial inclusion, income equality

Article History:
Received : 22-10-2023
Revised : 28-04-2024
Accepted : 30-06-2024

Article DOI :
10.55960/jlri.v12i2.963

Abstract

Purpose: This research investigates the impact of financial inclusion on income equality and examines the prospect of a cashless policy for economic resilience in Nigeria. The study explores whether financial inclusivity could enhance income equality and assesses the effectiveness of the Central Bank of Nigeria's cashless policy.

Study Design/Methodology/Approach: The research employed various statistical techniques, including fixed effect Instrumental Variable Regression (IVR), Instrumental Variable Quantile Regression (IVQR), and Logit regression. These methods were used to analyze the relationship between financial inclusion and income equality, as well as the feasibility of the cashless policy in Nigeria.

Findings: The results demonstrate that financial inclusion significantly influences household income equality, particularly among lower-income groups. However, the impact of financial inclusion on income equality is not uniform across different levels of financial inclusion. Additionally, while financial inclusion shows promise for reducing inequality at lower income distributions, the cashless policy has limited potential to further promote financial inclusion in Nigeria. Policymakers may need to consider alternative strategies, such as agent banking, mobile money, or financial education programs, to sustain and enhance financial inclusion.

Originality/Value: This study provides critical insights into the interplay between financial inclusion and income equality in Nigeria. It also offers a nuanced evaluation of the Central Bank of Nigeria's cashless policy, highlighting the need for more inclusive and adaptive approaches to strengthen financial systems and economic resilience.

How to cite : Gani, I.M., Atiku, K.M. (2024). The Impact of Financial Inclusion on Income Equality and the Prospect of Cashless Policy for Economic Resilience in Nigeria. *Jurnal LemhannasRI, 12*(2), 220-236. https://doi.org/10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

INTRODUCTION

It is no longer contentious that there are links between financial markets and economic development, as economists since the time of Schumpeter in 1934 have proved theoretically and empirically that financial institutions are indispensable for facilitating technological innovation and economic growth. In this sense, unhindered financial intermediation between the surplus spending unit and the deficit spending unit through well-developed financial systems can channel resources to the most productive use, thus leading to the expansion of the economy (Dupas and Robinson, 2013; Zhang and Posso, 2017; Asogwa *et al*., 2018; Chikalipah, 2018).

Financial inclusion has become a key pillar of the policies situated to promote inclusive development in the majority of countries around the world (Ouma *et al*., 2017).This emanates from the realisation that an inclusive financial system could be instrumental in the reduction of poverty and income inequality as well as a vehicle for promoting inclusive development (Ibrahim *et al*., 2019).Whereas advanced economies have enhanced financial access and sustainable financial services like savings, credit, insurance and payment systems among others, in the majority of less advanced economies, the overwhelming proportion of adults still lack access to formal financial services, with only 34% of the adult population in Sub-Saharan Africa using formal banking services (Ouma *et al*., 2017). With 13% of unbanked adults, this places South Africa as the country with the lowest proportion of financial exclusion among the major African economies (Ibrahim *et al*.,2019). However, financial inclusion has evolved over time in Nigeria, with some stylized statistics pointing to an increase in financially included adults from 23.6% in 2008 to 48.6% in 2014 (EFInA, 2017). This was partly achieved as a result of the successful transition from a repressed to a liberalized financial system as well as the success recorded after the implementation of the National Financial Inclusion Strategy in 2012 (See Efobi *et al*., 2014; Ibrahm *et al*., 2019 for review).

Regrettably, the successful pace of these policies was not sustained beyond 2014, which reflected the period that marked the crash of crude oil prices. Some stylized statistics have, for instance, indicated that the proportion of financially included adults has dropped from the record 48.6% achieved in 2014 to 38.3% in 2016 (CBN, 2017; EFInA, 2017). Similarly, in the rural areas of Nigeria where about 63.9% (or 61.60 million out of the total 96.4 million) of the adult population are based, the proportion of banked adults dropped from 25% in 2014 to 24.4% in 2016 (EFInA, 2017; Ibrahm *et al*., 2019). There are some social and institutional challenges, such as the mounting dominance of the informal sector, low human development, demographic challenges (Aliero and ibrahim., 2013), infrastructural deficiencies (Efobi *et al*., 2014; Ibrahim *et al.*, 2019), and the limited diversity in the financial infrastructure, particularly in the interest-free segment (Dimova and Adebowale, 2018; Ibrahim *et al*., 2019). In a bid to address some of these challenges, the Central Bank of Nigeria (CBN) has introduced bank charges of 3% on cash withdrawals and 2% on deposit so as to limit a cash-based transaction in the country.

E-ISSN: 2830-5728

The goals of this project are to device more convenient ways of promoting cashless system free from exploitative bank charges in short-run. It is a long-run goal of this project to suggest ways by with financial inclusivity can help reduce poverty and income inequality in Nigeria. Financial inclusion, as a key pillar for inclusive development, has long been considered as an important instrument for reducing poverty and income inequality. However, pathways through which financial inclusion can be achieved, such as reductionism of cash-based transaction remains only partially explored. With 13% of unbanked adults, this places South Africa as the country with the lowest proportion of financial exclusion among the major African economies (Ibrahim *et al*.,2019). However, financial inclusion has evolved over time in Nigeria, with some stylized statistics pointing to an increase in financially included adults from 23.6% in 2008 to 48.6% in 2014 (EFInA, 2017). This was partly achieved as a result of the successful transition from a repressed to a liberalized financial system as well as the success recorded after the implementation of the National Financial Inclusion Strategy in 2012 (See Efobi *et al*., 2014; Ibrahm *et al*., 2019).

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One major source of contention on cashless-inclusive nexus lend itself to implementation of bank charges on deposits and withdrawals in Nigeria. It is therefore imperative that this study be carried to investigate whether introduction of such bank charges will not only lead to financial exclusion, but also widens income inequality. To our knowledge little or no records are available of any study ever conducted to exploring these complex interactions between financial factors (bank charges) and social factors (inequality).

This study is aimed at unravelling whether financial inclusivity could induce income equality and revealed the scenarios of cashless policy of Central Bank of Nigeria. Specifically, the objectives of this research are to identity the impact of financial inclusion on income equality in Nigeria. It will also evaluate the prospect of cashless policy on ensuring financial inclusion in the country and to minimise the possible effect of financial deprivation driven by the introduction of bank charges on deposits and withdrawals.

LITERATURE REVIEW

Financial inclusion has become a key pillar of the policies situated to promote inclusive development in the majority of countries around the world (Ouma *et al*., 2017). This emanates from the realisation that an inclusive financial system could be

DOI: 10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

instrumental in the reduction of poverty and income inequality as well as a vehicle for promoting inclusive development (Banerjee *et al*., 2020). As discussed earlier, advanced economies have enhanced financial access and sustainable financial services like savings, credit, insurance and payment systems among others, in the majority of less advanced economies, the overwhelming proportion of adults still lack access to formal financial services, with only 34% of the adult population in Sub-Saharan Africa using formal banking services .

However, financial inclusion has evolved over time in Nigeria, with some stylized statistics pointing to an increase in financially included adults from 23.6% in 2008 to 48.6% in 2014 (EFInA, 2017). This was partly achieved as a result of the successful transition from a repressed to a liberalized financial system as well as the success recorded after the implementation of the National Financial Inclusion Strategy in 2012. There are documented literatures that discuss the link between cashless policy and financial inclusion specifically in Nigeria. Among them is Ozili (2021) who studied financial inclusion and look at a strong criticism on financial inclusion. The study explored the new challenges of financial inclusion for future sustainability and wellbeing. The study applied critical discourse analysis to come up with the findings that served as an invitation to live by finance and leads to the financialisaton of poverty. It also revealed that benefits of financial inclusion may disappear after few years and it did not take effect on how poverty affects financial decision making, it once again promote difficult digital money and use of accounts, among other things.

Furthermore, Bayero (2015), studied the effects of cashless policy on financial inclusion in Nigeria. The study established that awareness, infrastructure development, consumer and user value proposition have shown a strong relationship with financial inclusion and its significant. However, business model of financial service providers did not show any significant relationship with financial inclusion. While inclusive finance through the usage of various payment apparatus such as e-channels can be an important instrument for reducing poverty and income inequality in Nigeria (Ibrahim, *et al*., 2019). Ramkumar (2017) also studied the benefits of financial inclusion and cashless economy for India. The study revealed that there are benefits of these policies on long term economic growth of India. By and large, efficient financial sectors have been seen as a panacea to the numerous problems of developing countries. There is an overwhelming body of literature supporting the critical role of financial markets in economic growth. At the macro-level, financial development is found to exert a strong positive effect on output, employment, economic growth (Azman-Saini and Smith, 2011), and capital accumulation (Beck *et al*., 2010).

Similarly, a number of studies on the microeconomic aspect have asserted that access to credit through microfinance institutions could enable poor and vulnerable households to strongly overcome liquidity constraints, making it possible to undertake investment that can boost production, employment status, income and mental health (Aliero *et al*., 2013; Banerjee *et al*., 2015; Chikalipah, 2018). Furthermore, increasing

E-ISSN: 2830-5728

access to other formal financial services can stimulate savings and investments, smoothen consumption and empower women (Dupas and Robinson, 2013; Zhang and Posso, 2017). Thus, the financial sector has implications that link together micro-households with factors that determine long-term macroeconomic performance (Aliero *et al*., 2013).

In the same vein, Eze and markJackson (2020) investigated the cashless policy and financial inclusion in Nigeria. The research adopted ordered probit regression to estimate the data collected. The results indicated that the nearness of financial products and services outlets to rural settlements and other digital services enhanced the financial inclusion in Nigeria. Efficiency of cashless payment does not significantly reduce the use of financial products and services, hence financial inclusion. In another development, Ibrahim and Aliero (2020) tested the impact of financial inclusion on income convergence in Nigeria. The study used longitudinal data of Nigerian households and explores the potential of financial inclusion as an instrument to reduce income inequality. It adopted linear and quantile regression and the results show a strong nexus between financial inclusion and per capita income in Nigeria. Financial inclusion has resulted in income divergence which leads to widening income disparity among Nigerian households with various income distributions.

However, Babalola and Adagiri (2020) empirically investigated the impact of cashless economic policy and financial inclusiveness in Nigeria. The study divulged that the policy of cashless economy positively impacted the economy through increasing financial inclusiveness and individual entrepreneurial activities.

The literatures reviewed above provided room for further study, as there is an existing gap which this research will seek to fill. Financial inclusion and cashless policy studies in the past does not explore the income equality and its impact. Therefore, this study is aimed at investigating the impact of financial inclusion on income equality and the prospect of cashless policy in Nigeria.

METHODS

This study aims to examine the impact of financial inclusion on income equality and income convergence in Nigeria, with a focus on household-level data collected in Katsina State. A quantitative approach was adopted, utilizing regression-based models to analyze the relationship between financial inclusion, income equality, and the potential effects of cashless policies. The methodology employs multidimensional measures of financial inclusion, controls for relevant demographic and economic factors, and addresses endogeneity issues through the use of instrumental variables. Advanced statistical techniques, such as Instrumental Variable Regression (IVR) and Instrumental Variable Quantile Regression (IVQR), were used to capture both the central and distributional effects of financial inclusion on income. Additionally, decomposition strategies were applied to distinguish the relative contributions of financial inclusion and other variables to income disparities.

DOI: 10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

The implication of financial inclusion includes reduced poverty, decreased income inequality, smoothened expenditure and enhanced investment. In order to explore whether, and to what extent, financial inclusion stimulates income convergence, the following empirical model is specified:

$$y_i = \alpha f_i + \beta z_i + \gamma d_i + x_i + \varepsilon_i, \quad (1)$$

where yy_i is the dependent variable, which refers to the per capita income of the *ith* household; $f_i f_i$ is the binary measure of financial inclusion taking a value of 1 if financially included and 0 otherwise– the multidimensional empirical measurement of $f_{0,1}$ or f_i is given below; $z_i$is a vector of the relevant control variables that have been previously found to influence and drive the income convergence, which include employment as well as the social factors such as age, gender, household size, and literacy; d_i measures the distance to the nearest financial institution, which is often used in the extant literature as a variable that controls the potential endogeneity associated with f_i(Hausman and Sidak, 2004; Beck *et al*., 2010; Bruhn and Love, 2014). The variable x_i is a dichotomous variable that controls for unobserved time-invariant characteristics, such as area of residency, while $\varepsilon_i \varepsilon_i$denotes the white-noise error term $\varepsilon_i \sim N(0,\sigma)$ $\varepsilon_i \sim N(0,\sigma)$. To control the potential effect of cashless policies on financial inclusion, logit model will be run on equation (1) by substituting y_i for dummy variable treating the possible effect of bank charges on cash transactions.

While f_i is defined as a binary variable (1 = financially included, 0 otherwise), the way it can be measured is strongly dependent on its theoretical perception. As discussed earlier, financial inclusion is referred to as access to financial services that meet the financial needs of individual regardless of income for transactions, savings, credit, and insurance (Alhassan and Fiador, 2014; Zhang and Posso, 2017; Ibrahim *et al*., 2019). In this way, proxies for each dimensional pillar of financial inclusion consistent with extant literature on financial development were adopted, as modelled in Equation (2):

$$f_i = \frac{c_{\frac{1}{4}}\left(l_{\frac{1}{4}}\right) + d_{\frac{1}{4}}\left(s_{\frac{1}{8}} + t_{\frac{1}{8}}\right) + i_{\frac{1}{4}}\left(p_{\frac{1}{4}}\right) + n_{\frac{1}{4}}}{4}$$

where the four traditional pillars of financial inclusion *c, d, i* and *n* represent credit, demand deposit, investment account and insurance, respectively, which are measured via five key indicators consistent with what access to financial services primarily aims to achieved: loan (*l*), saving account (*s*), transaction account (*t*), fixed deposit account (*p*) and insurance (*n*). For instance, one cardinal objective of financial inclusion is to prevent individuals from irregular cash flow through savings and loans. While savings essentially allow individuals to have steady expenditure over time by foregoing present expenditure for future expenditure, loans allow individuals to forego future expenditure for present expenditure (Zhang and Posso, 2017). Similarly, financial inclusion can provide

E-ISSN: 2830-5728

households with formal financial services for transaction purposes, storing wealth and in extreme cases, to use insurance services against covariate and idiosyncratic shocks (Wang and Guan, 2017).

Whereas a household-level inclusion score was assigned to each household according to their inclusion in each of the indicator described in Equation (2), four equally weighted dimensions of financial inclusion would yield a maximum inclusion score of 100%.As such, a 50% cut-off, which is equivalent to ½ of the weighted indicators, is used to categorise the households into either financially included or otherwise. To aggregate various indictors of f_i, this study used a computational strategy often adopted for the calculation of the Multidimensional Poverty Index (MPI). A number of recent studies have shown the superiority of MPI methodology when computing household-level development index over the other alternative methods, such as principal components analysis (See Dotter and Klasen, 2017; Wang and Guan, 2017; Zhang and Posso, 2017).

The parameters of Equation (1) can neither be estimated using the traditional ordinary least squares (OLS) regression nor the fixed effect method due to the endogeneity in the variable of interest, f_i. Financial inclusion (f_1)(or exclusion, (f_0) may suffer from endogeneity because an increase (or decrease) in income for being financially included (excluded) could potentially allow (deprive) households to gain more from various financial services. In this way, financial inclusion could unlock new income earning opportunities (Ibrahim et al. 2019). Thus, fixed effect Instrumental Variable Regression (IVR) was used as an analytical estimator with distance to the nearest bank (d) being used as the instrument (for econometrics proof, see Hausman and Sidak, 2004).

The main aim of this study is to establish whether financial inclusion could lead to income convergence. To this end, decomposition was employed to assess the nature of income disparity between financially included and financially excluded households. This involved examining the relative contribution of between-group variance (differences between financially included and financially excluded households) and within-group variance (within each group) to income. If the between-group variance exceeds the within-group variance, then financial inclusion exerts a larger influence compared to other factors explaining the income inequality. In this sense, IVR-based decomposition strategy was implemented similar to the strategy used by Fields (2003) for treatment effect models.

Suppose $V_0(y_{fe})$ and $V_1(y_{fi})V_0(y_{fe})$ and $V_1(y_{fi})$ are the variances in income of financially excluded and included households, respectively. If $p_{fi}p_{fi}$ is the proportion of financially included households, then the within-group variance $[V^w(y_g)][V^w(y_g)]$ and between-group variance $[V^b(y_g)][V^b(y_g)]$ are given as:

$$V^w(y_g) = (1 - p_{fi})V_0(y_{fe}) + p_{mi}V_1(y_{fi}) \quad \text{and,} \tag{3}$$

DOI: 10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

$$V^b(y_g) = (1 - p_{fi})\, p_{fi}(\bar{y}_{fi1} - \bar{y}_{fi0})^2 \quad (4)$$

where $\bar{y}_{fi1}\bar{y}_{fi1}$ and $\bar{y}_{fi0}\bar{y}_{fi0}$ are the respective mean values of income for financially included and financially excluded households, respectively. The coefficient of *between-groups* variance measures the extent to which income inequality is driven by financial inclusion rather than other regressors, while the *within-group effect* measures the extent to which demographic characteristics contribute to various income differences.

It is important to note that the IVR-based decomposition strategy provides only a partial view of the interaction among the variables. This is in contrast to Quantile Regression (QR), which permits the examination of the impact of covariates on different quantiles of the response distribution. Thus, QR provides a more comprehensive picture of the effect of the predictors on the response, as it specifies changes in the quantiles of the distribution. However, as with the conventional linear regression model, endogeneity of covariates renders the conventional QR biased and inconsistent (Chernozhukoy and Hansen, 2013). As such, Instrumental Variable Quantile regression (IVQR) is applied.

The study further adopted the IVQR-based decomposition, which follows the methodological strategy used by Fortin, Lemieux and Firpo (2011) in developing their Recentered Influence Function (RIF). This method allows the examination of the impact of changing the distribution of regressors on the marginal quantiles of the income distributions $F_y(y)\, F_y(y)$.

The empirical strategy of RIF proceeds by estimating the sample quantile $q_\tau q_\tau$, the density function $f_y(q_\tau)f_y(q_\tau)$ of the quantile using kernel methods, and forms a dummy variable of $1 \text{ if } y \leq q_\tau, \text{and 0 otherwise}, 1 \text{ if } y \leq q_\tau, \text{and 0 otherwise},$ which is called the Influence Function (IF). Then, RIF can be obtained by adding the sample quantile with IF, as given in Equation (5):

$$RIF(y; q_\tau, f_y) = q_\tau + \frac{\tau - 1(y \leq q_\tau)}{f_y(q_\tau)}. \quad (5)$$

Following Firpo *et al*., (2009), the conditional expectation of the RIF i.e. $E[RIF(y; q_\tau|X)] = X\beta_\tau E[RIF(y; q_\tau|X)] = X\beta_\tau$ can be modelled as a linear function of predictor variables, while the regression coefficients present a marginal effect of the variables on quantiles of the income distribution. In this way, the mean of RIF at the τth quantile equals the conditional quantile $q_\tau q_\tau$ which seems to be the important theoretical property of RIF (Fortin*et al*., 2011; Ibrahim *et al*., 2018). This satisfies the precondition for the application of a generalised Blinder (1973) decomposition of income distribution across the various quantiles of financially included and financially deprived households, as shown in Equation (6):

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$$\hat{q}_{F\tau} - \hat{q}_{D\tau} = \overline{RIF}(y_F; \hat{q}_{F\tau}) - \overline{RIF}(y_D; \hat{q}_{D\tau}) = \underbrace{(\hat{X}_F - \hat{X}_D)}_{a}\hat{\beta}_{F\tau} + \underbrace{(\hat{\beta}_{F\tau} - \hat{\beta}_{D\tau})}_{b}\hat{X}_D \quad (6)$$

where $\hat{q}_{F\tau}\hat{q}_{F\tau}$and $\hat{q}_{D\tau}\hat{q}_{D\tau}$are τth quantiles of the marginal income distributions of the financially included (*F*) and deprived (*D*) households, respectively. $\hat{\beta}_{F\tau}$ and $\hat{\beta}_{D\tau}$ $\hat{\beta}_{F\tau}$ and $\hat{\beta}_{D\tau}$ are τth quantile regression coefficients estimated via RIF method for the two group of households. $\hat{X}_F$and $\hat{X}_D\hat{X}_F$and $\hat{X}_D$ are the average characteristics for each group of households. This generalized form of the recentered income decomposition is used to estimate the income convergence (or divergence) of the financially included households by decomposing the various income changes into factors driving the changes. In Equation (6), a and b measure the components of income differential due to observable household characteristics (*characteristic effect*) and the effect of inclusive finance (*coefficient effects*), respectively. Theoretically, to achieve income convergence, the gap between the selected (τth) quantiles (say higher and lower income distributions) is less than or equal to zero. Given that financial inclusion connotes access to useful and affordable financial products and services such as credit, savings, insurance, transactions and payments (Ibrahim, 2018), in this sense, robustness checks are to be run by the systematic exclusion of various components of financial inclusion in such a way that Equation (1) would be re-estimated by symmetric exclusion of each of these dimensions of f_i.

RESULT AND DISCUSSION

This section of the study will analyse the data collected from the respondents through field survey and provide the results in tabular form. The detailed analysis of the findings is presented to make conclusions.

Data Description

The period of data collection was January 2024–April 2024. In order to determine the survey area and respondents at the same time, the study used a stratified multi-stage sampling approach. The most populous cities in Katsina State (Katsina, Daura, and Funtua) were specifically chosen as the primary focus of the study in order to gather data. The reason for this is that banks and other financial institutions concentrated their branches in those cities. In addition, the data collecting was dispersed around the state to balance respondents' opinions. The choice was not due to a lack of banking outreach in such areas, but in order to balance the opinions of the respondents. Furthermore, the survey locations within each identified city were chosen using a random sample procedure. Therefore, as a result, 160 households were carefully chosen from the local government areas (for a sample size of 1 for 890 respondents). In contrast, Katsina State is home to over 5 million households and an estimated 10 million people. Additionally, the unit of analysis was households rather than household heads.

DOI: 10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

The data appears to illustrate the dynamics of financial inclusion alongside pertinent income equality activities. The survey questionnaire was crafted to gather extensive information regarding demographics, financial inclusion, income equality and cashless policy. Therefore, this study defined financial inclusion as those households that have the ability to access useful and affordable financial products and services, such as transactions, savings, credit, and insurance (CBN, 2012; Wentzel et al., 2016). As such income equality refers to the systematic and evenly distribution of the wealth of nation among the population. Moreover, channels of access to formal financial services are considered as the key indicators of financial inclusion and the different sources of income to the households are chosen as the indicators of income equality in this study. However, among the 160 households surveyed, 17 (equating to 10.6%) were unable to furnish complete information on certain indicators related to the income equality index, due to either omission or error. To mitigate bias, adjustments were made to 10.6% of the data to account for the missing information by standardizing the components of the well-being score. This resulted in minor discrepancies in the data utilized for the financial inclusion proxy, with 160 observations for financial inclusion and the income equality index, 143 respondents were utilised.

The stratified descriptive data indicate that, despite moderate overall financial inclusion scores of approximately 89%, households that are financially included exhibit more favorable statistics concerning income equality and the prospects for cashless policies. This observation leads to the primary hypotheses that this study systematically explores: the effect of financial inclusion on income equality is >0, the effect of income equality on various financial inclusion indicators is >0, Q60 -Q30 <0, and Q_90 - Q_60 is <0.

Demographic Distribution of the data

Demographic distribution: The study employed descriptive statistics in order to present and analyse the demographic data of the respondents collected in field survey as follows tabel 1.

Table 1. Demographic distributions of the respondents

Variables	Frequency	Percent
Age		
16 – 25	20	13.99
26 -35	54	37.66
36 – 45	47	32.87
46 and Above	22	15.38
Sex		
Male	120	83.92
Female	23	16.08
Marital status		
Single	52	36.36
Married	90	66.94

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Variables	Frequency	Percent
Divorced	01	0.70
Educational qualifications		
No formal education	00	0.00
Primary school	02	1.40
Secondary school	14	9.79
NCE/ Diploma	52	36.36
Degree and above	75	52.45
Local Govt. Area		
Katsina	23	16.08
Funtua	22	15.38
Daura	06	04.20
Others	92	64.34
Occupation		
No response	00.	0 0.00
Farming	23	16.08
Business	59	41.26
Civil servant	61	42.66
Source of Income		
Own Business (Non-Farming)	56	39.16
From family/Friends/ and others (Dependent)	11	07.69
Farming	19	13.29
Salaries	57	39.86
Source: survey, 2024		

In the Table 1, it shows that the age bracket of 16-25 of the respondents were 20 and represents 13.99 percent of the respondents, while 26-35 age were 54 indicating 37.66 percent. The age of the respondents that falls between 36-45 were 47 and 32.87 percent of the respondents, meanwhile, the 46 years and above of the respondents were 22 and representing 15.38 percent. This shows that majority of the respondents falls between the age of 26 and 45, which are the active working class of the population under study. On the Sex of the respondents, 120 respondents were male while 20 respondents were female representing 83.92 percent and 16.18 percent respectively. The Table also shows information regarding the marital status of the respondents and it indicated that majority of the respondents were married, numbering 90 while 52 respondents were single and only 1 were divorced representing 36.36%, 62.94% and 0.70% respectively. Moreover, information pertaining to educational qualifications of the respondents shows that none of the respondents do not have any formal education, 2 possess primary school leaving certificate, 14 indicated having secondary school certificate, 52 with diploma/NCE and its equivalent, 75 of them have first degree certificate and above representing 1.40 percent, 9.79 percent, 36.36 percent, and 52.45percent respectively. This data coincides with Ibrahim and Aleiro (2020) which assert that financial inclusion and income equality appears to be accessible because of high rate of literacy in Nigeria. Table 1 above, further shows the frequency of the respondents' Local government of residents. It appears to be Katsina with the highest number of residents accumulating 23 and Funtua 22, Daura 6 while other local Governments has 92 respondents with the the percentage of 16.08,

DOI: 10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

15.38, 04.20 and 64.34 respectively. It also shows the occupational distribution of the respondents. It was observed that all respondents responded to the question, 23 (16.08%) were farmers, 61(42.66%) were civil servant, 59 (41.26%) indicated business as their occupation. In order to avoid multiplicity of response, respondents that engaged into more than one occupation were only asked to give their major occupation. The study similarly depicts the source of income of the respondents from the above Table. Out of the total respondents 56 owned non-farming business (39.16%) and it's their indicated major source of income, 11 (7.69%) indicated their source of income from family, friends and others (they are dependents), while 19(13.29%) and 57(39.86%) have their source of income from farming and salaries respectively.

Financial Inclusion and Income Equality

This part of the study will present, interpret and analyse the data on the relationship between financial inclusion and income equality in Nigeria. The policy implication of the impact of financial policy on income equality in Nigeria would also be discussed in this part. The following table 2 depicted the result obtained on this regard.

Table 2. The Impact of Financial Inclusion on Income Equality in Nigeria

(Dependent variable: Income Equality)

ACTIVITIES	Q30	Q60	Q90	WITHIN GROUP DIFF	
				Q60-Q30	Q90-Q60
Financial inclusion	0.1554 ** (0.0981)	0.0274 * (0.0495)	-0.0399 * (0.0474)	-0.1280	-0.0673
Age	0.2916* (0.1670)	0.1843 ** (0.0969)	0.1279 * (0.0892)	-0.1073	-0.0564
Sex	-0.6270 (0.3688)	-0.5573 (0.2683)	-0.5206 (0.2798)	-0.0367	0.0367
Occupation	1.1334 (0.3538)	0.8054 (0.1641)	0.6328 (0.1140)	-0.3280	-0.1726
Cons	-0.7632 (0.8267)	1.4334 (0.5541)	2.5886 (0.5664)	2.1966	1.1552

The table 2 depicted the nexus between financial inclusion and income equality at various levels of income distribution. The results of IVQR of the 30th, 60th, and 90th quantiles, as shows in the table above provided information on the persistent rising coefficients of quantiles in all the three waves. One key finding deduced from the estimates is that of negative difference between quantiles; this suggests that the relationship between financial inclusion indicators and income equality indicators is not monotonic. In other words, the effect of income equality on financial inclusion is not consistent across different levels of financial inclusion. It also suggests that financial inclusion has a larger effect on the lower quantiles' distributions than on the higher quantiles in other words the lower quantiles difference is greater than higher quantiles;

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this indicates that the impact of income equality on financial inclusion is more pronounced at lower levels of financial inclusion. This means that income equality has a more significant effect on individuals or households with lower levels of financial inclusion. This supports the finding of Zhang and Posso (2019), which also shows a stronger effect of financial inclusion on income level at lower quantiles, and contradicts the findings of Ibrahim and Aliero (2021) which supports that financial inclusion at higher level have a stronger effects than the at lower level.

The policy implication of this findings is that the Nigerian Policymakers should focus on designing financial inclusion initiatives that target low-income households or individuals with lower levels of financial inclusion. This could include programs that provide access to basic financial services, such as micro savings accounts or more of mobile banking services. Moreover, implementing progressive financial policies, such as subsidized financial services or tax incentives for low-income individuals, could help reduce financial inequality and promote financial inclusion. Policymakers in Nigeria should prioritize policies aimed at reducing income inequality, such as progressive taxation, social welfare programs, and education/training initiatives. By reducing income inequality, policymakers can help promote financial inclusion and reduce poverty. So also Implementing financial literacy programs that target low-income households or individuals with lower levels of financial inclusion can help promote informed decision-making and increase financial inclusion. Lasily, continuously collecting and analysing data on financial inclusion and income inequality can help policymakers identify areas where targeted interventions are needed and evaluate the effectiveness of existing policies.

The insights of IVQR Analysis can be highlighted as follows: i) Heterogeneous effects: The IVQR analysis reveals that the effect of income equality on financial inclusion in Nigeria is not uniform across different levels of financial inclusion. This highlights the importance of considering heterogeneous effects in policy analysis. ii) Non-linear relationships: The negative difference between quantiles suggests that the relationship between financial inclusion and income equality is non-linear. This implies that policymakers should be cautious when assuming linear relationships between variables.

Prospects of Cashless Policy for Economic Resilience in Nigeria.

The result of this part of the analysis was deduced using logit, as suggested in the methodology. The result of the finding is depicted in the following table 3.

Table 3. The Logistic regression result on the prospect of cashless policy in Nigeria

Variables	Ratio	Standard error	95% conf. interval
Cashless policy	0.984 (-0.04) (0.968)	0.391	0.451

DOI: 10.55960/jlri.v12i2.963

E-ISSN: 2830-5728

Age	1.197 (0.59) (0.558)	0.368	0.655
Sex	0.729 (-0.49) (0.627)	0.473	0.204
Qualification	1.821 (1.76) (0.078)	0.619	0.934
Income	1.207 (0.88) (0.381)	0.259	0.791
Cons (baseline odds)	0.349 (-0.51) (0.610)	0.720	0.006

z value and p- value in parenthesis

From the table 3, the Odds Ratio (OR) of 0.984 suggests that for a one-unit change in the Cashless policy variable, the odds of financial inclusion decrease by a factor of 0.98, or 2%. However, this effect is not statistically significant. The Standard Error (SE) also suggested that a relatively large SE of 0.39 indicates that the estimate of the OR is imprecise. The z-value of -0.04 and the high p-value of 0.968 indicate that the effect of the Cashless policy on financial inclusion is not statistically significant. The 95% Confidence Interval of 0.45 is quite wide, indicating that the true effect of the Cashless policy on financial inclusion could be substantially different from the estimated OR. Based on this logistic regression results, the prospect of the Cashless policy in Nigeria appears to be limited in terms of promoting financial inclusion. The results suggest that the policy may not have a statistically significant impact on financial inclusion. The results suggest that the Cashless policy may have limited potential to promote financial inclusion for economic Resilience in Nigeria. In order to achieve comprehensive economic resilience in Nigeria, a more comprehensive approach to financial inclusion, incorporating multiple policies and interventions, may be necessary to achieve significant progress. Regular monitoring and evaluation of the Cashless policy and other financial inclusion initiatives are essential to assess their effectiveness and make adjustments as needed.

The policy implication of the results suggest that the Cashless policy may not be effective in promoting financial inclusion. Policymakers may need to explore alternative solutions to improve financial inclusion, such as agent banking, mobile money, or financial education programs. In order to sustain the cashless policy in Nigeria, its design should be refined to address specific barriers to financial inclusion, and implementing complementary policies, such as financial literacy programs or incentives for financial institutions to serve underserved populations, may help improve the effectiveness of the Cashless policy.

However, considering the effect of recent implementation of cashless policy and Naira redesign. Cashless policy changed the attitude of Nigerians to embrace the use of bank accounts so that they can make their daily transactions, hence achieving financial inclusion. Cashless policy seamlessly increased the financial inclusion especially with the help of digital economy and financial technology (fintech). The introduction of fintech

E-ISSN: 2830-5728

made financial inclusion very easy for Nigerians especially those from rural areas. Moniepoint, Opay and others for example were among the most popular fintech wallets that significantly increase the level of financial inclusion in Nigeria which improves the income equality among Nigerians.

CONCLUSION

This study examines the impact of financial inclusion on income equality using data collected from Nigerian households (specifically Katsina State). The results of IVR and IVQR consistently show that financial inclusion exerts a significant influence on household income equality. it can be contended that financial inclusion is helpful in reducing income inequality. Even though, the relationship between financial inclusion indicators and income equality indicators is not monotonic. In other words, the effect of income equality on financial inclusion is not consistent across different levels of financial inclusion. It also suggests that financial inclusion has a larger effect on the lower income distributions than on the higher income distributions; this indicates that the impact of income equality on financial inclusion is more pronounced at lower levels of financial inclusion. This means that income equality has a more significant effect on individuals or households with lower levels of financial inclusion. On prospect of cashless policy considering the success of financial inclusion in Nigeria on lower income earners, the prospect has very limited potential to promote financial inclusion in Nigeria. The results suggest that the Cashless policy may not be effective in promoting financial inclusion for Economic Resilience. Policymakers may need to explore alternative solutions to improve financial inclusion, such as agent banking, mobile money, or financial education programs to sustain the cashless policy for economic Resilience in Nigeria.

Acknowledgement

This research work was supported by the Tertiary Education Trust Fund (TETfund) intervention program through Isa Kaita College of Education Dutsinma Institution Based Research Grant (IBR) [TETF/DR&D/CE/CEO/KATSINA/IBR/2024/VOL.III.]. We would also like to commend the editor and the anonymous reviewers for providing valuable suggestions and insightful and constructive comments on an earlier version of this article.

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DOI: 10.55960/jlri.v12i2.963