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**Analysis of the Impact of Financial Inclusion on Poverty Reduction in Minna Niger State - Nigeria**

Musa Abdullahi Sakanko[1], Audu Abdulkareem Usman[2], Musa Clement Lawal[3], Aliyu Musari Onimisi[4]

[1,2,3&4] *Economics Department, Ibrahim Badamasi Babangida University Lapai, Niger State, Nigeria*

**Abstract**

*Undoubtedly, financial inclusion has been considered as one of the ways of reducing poverty because it favours mainly low-income groups by bringing a lot of welfare benefits to them through the basic services offered by financial institutions such as mobilization of savings, risk reduction, monitoring and advise, cost mitigation, reduction of information asymmetry, and allocation of funds to the most competent entrepreneurs to promote technological innovation and hence economic development. The study investigated the impact of Financial Inclusive on poverty reduction in Minna using logistics regression and the result revealed that formal ownership of the account, Financial adviser, teller point, and access to formal credit lead to an improvement in the welfare of people and statistically significant. Therefore, the study concludes that formal ownership of the account, financial adviser, teller point, and access to credit will help in the reduction of poverty in Minna Metropolis. Thus, recommend fiscal regulation, installation of teller or ATM point in strategic places in both the rural and urban area, the establishment of customer advisory unit or department in commercial banks, and checkmate of the commercial bank's loan procedure by Central Bank of Nigeria,*

**Keywords:** Financial inclusive, logistic regression, Niger state, poverty
**JEL Codes**: H81, G21, C25, P46.

## 1. Introduction

The principle of financial inclusion has assumed a more level of importance in recent times due to its perceived importance as a driver of economic growth (Okaro, 2016). Giving access to the hundreds of millions of men and women all over the world who are presently excluded from financial services would provide the possibilities for the creation of a large depository of savings, investable funds, investment and therefore global wealth generation(CBN, 2013). In other words, access to financial services, that are well suited for low-income earners promote enormous capital accumulation, credit creation, and investment boom (Onaolapo, 2015).

According to the World Bank (2013) report on poverty, there are still around 2.5 billion adults in the world who are financially excluded, meaning they have no savings or access to credit and other financial services. The report added that almost 80 percent of them live on less than $2 a day. The report documents that savings and payments are strongly linked to poverty reduction. It stressed that access to credit, insurance, savings, and payments opens up economic opportunities for the bottom 40 percent to increase their incomes sustainably.

Furthermore, Global Financial Inclusion Findex data for 2012 revealed that only around 50% of adults (people aged 15 and above) in the world have at least one bank account in the formal financial system (Demirgüç-Kunt and Klapper, 2012). However, this percentage of individuals with a bank account varies considerably between developed and developing countries. In developing countries, banking penetration rates are far below the global average. In Sub-Saharan Africa, for instance, the percentage of adults with a bank account is 24.1%, as compared to 33%, for South Asia and 39% for Latin America and the Caribbean (Little Book of Financial Inclusion, 2012). The problem of involuntary financial exclusion requires interventions to address market failures such as asymmetric information, lack of competition in the markets or insufficient infrastructure (Camara, Peña, and Tuesta, 2014). These failures make it difficult for certain population groups, such as low-income groups or those who have traditionally been more vulnerable, such as women, young people or people

who live in rural areas, to use formal financial services despite the benefits (Camara et al., 2014).

Recently, According to the Global Findex database 2017, globally, 3.8 billion people which represent 69 percent now have an account at a bank or mobile money provider, a crucial step in escaping poverty. This is up from 62 percent in 2014 and just 51 percent in 2011. From 2014 to 2017, 515 million adults obtained an account, and 1.2 billion have done so since 2011, While in some economies account ownership has surged, progress has been slower elsewhere, often held back by large disparities between men and women and between the rich and poor (Omotayo, Ademola, and Oluwayemi, 2017). The gap between men and women in developing economies remains unchanged since 2011, at 9 percentage points (Demirguc-kunt, Klapper, Singer, Ansar, and Hess, 2018). More also, about 1.7 billion adults remain unbanked without an account at a financial institution or through a mobile money provider. Because account ownership is nearly universal in high-income economies, virtually all these unbanked adults live in the developing world (World Bank (2018). Indeed, nearly half-lives in just seven developing economies: Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan ( Demirguc-kunt, et al, 2018). Based on this financial inclusion is on the rise globally, accelerated by mobile phones and the internet, but gains have been uneven across countries. (World Bank (2018).

In Nigeria, several attempts and approaches had been adopted by various governments to reduce or alleviate poverty. Some of these approaches are; Green Revolution by Shagari Administration in 1980's, operation feed the nation by Obasanjo Administration in 1978, Better life by Babangida, 1986, National economic empowerment development strategy (NEEDS), at State and local level the acronyms are SEEDS and LEEDS, Millennium Development Goals, Subsidy Reinvestment Programme, Graduate Internship Scheme training, N-power, Agricultural Credit Guarantee Scheme, and several other poverty alleviation strategies. However, despite these various poverty alleviation strategies, Nigeria is yet to transform these with her resources both human and material into reasonable and significant welfare improvement for the majority of its population and to relative reduce the growth rate of poverty.

Despite, the important role played by financial inclusion in reducing poverty, disadvantage or low income group or poor people in the rural areas know no little about it. This will help to deepen our knowledge on economic policies designed to encourage financial inclusion in Niger State. It is imperative to note that theories and empirical evidence have suggested that financial development leads to poverty reduction. Aderibigbe (2001) argued that access to fund, adequate credit facility and technology access reduce absolute number of people living in poverty. Similarly Jabir (2015) in Ghana, asserted that personal insurance, credit from formal financial institution, mobile payment and savings have significant poverty reduction effect. Furthermore, Global Financial Inclusion Findex data for 2017 opined that Mobile money services which allow users to store and transfer funds through a mobile phone can help improve people's income earning potential and thus reduce poverty and access to mobile money services delivered enabled women-headed households to increase their savings by more than a fifth; allowed 185,000 women to leave farming and develop business or retail activities; and helped reduce extreme poverty among women-headed households by 22 percent (World Bank, 2018).

Literature on financial inclusion have largely focused on indices of financial inclusion without focusing on its impact. Despite, the important role financial inclusion plays, few empirical studies exist which analyses the impact of financial inclusion on poverty reduction. Some of these authors only provided the descriptive statistics of the measurement of financial inclusion without testing for any statistical significance ( Mauri and Manish, 2010; Onaolopa and Odeya, 2012; Solomon, 2014; and Cyn-young and Rogelio, 2018). Others also provide the link between the individual characteristics without examining the impact it has on poverty. These therefore, leave a gap to be filled on the link between financial inclusion and poverty reduction nexus.

One other problem that this study has identified and would deal with is dependent bias. For instance, ratio of deposit to GDP and credit to GDP are often noted of making the financial system deep without delivery access to all (Demirgüç-Kunt and Klapper, 2012). Therefore, the use of these proxies only tell us the depth of the financial system but not the usage aspect of it.This is because it is not everybody

who has access to formal financial services who actually use it. Also, micro data has an advantage over macro data because when using macro data it is difficult to distinguish the poor from the rich. In this regard, the purpose of achieving universal financial access will not be met. In order to counteract these problems, there is the need for us to correct dependent or endogineity bias. However, the use of micro-level data is more appropriate in dealing with this problem.

To the best of our knowledge, it is only (Sanya and Olumide, 2017) who have applied the descriptive statistics and a Logistic regression model to examine the relationship between financial Inclusive and poverty reduction in Ekiti State. The study was carried out in different geopolitical zone of the current study which we expected different results because of Economy, social, geographic and institutional different of individuals involved. This will provide us with more robust findings which can be used for policymaking and implementation in Niger State and Nigeria as a whole and other developing countries concerning the issue of financial inclusion and poverty reduction

## 2. Literature Review and Theoretical Framework

Okoye, Kehinde, Erin and Modebe (2017)defines financial inclusion as the way financially excluded and underserved people in a society have access to a range of available financial services without any discrimination. According to the African Development Bank (2013), financial inclusion refers to all initiatives that make formal financial services available, accessible and affordable to all segments of the population. Financial inclusion has several benefits for national development. Financial inclusion (FI) connotes increasing popular access to formal financial services such as a bank account, and/or the use of credit and saving facilities of banks (Efobi, Beecroft, and Osabuohien, 2014). On the other hand, financial exclusion refers to obstacles that hinder access to formal financial services (such as the distance to financial institutions, costs of financial services, lack of widespread knowledge of available services, integrity of regulatory and institutional infrastructure etc.), despite the exceeding marginal benefits over marginal cost from using these services (Efobi, et al., 2014).

According to financial inclusion working group guideline note (2017), Financial inclusion is the right of every individual to have access to a full range of quality financial services in a timely, convenient, informed manner and at an affordable cost in full respect of his/her personal dignity. This is provided to all segments of the society, with a particular attention to low-income poor, productive poor, migrant workers and people living in remote areas irrespective.

The word poverty derived from Latin word known as pauper meaning poor World Bank, (2013) defines poverty as hunger, lack of shelter, sickness and inability to attend school, inability to read and write, joblessness, fear for the future, highly infant and child mortality. (Aku, Ibrahim, and Bulus, 1997) cited by (Sanya and Olumide, 2017), define poverty from five perspectives as personal and physical deprivation experienced as a result of health, nutrition, literacy and educational disability and lack of self confidence, Economic deprivation due to lack of access to property, income assets, factors of production and finance, social deprivation brought about as a result of denial from full participation in social, political and economic activities, cultural deprivation in terms of lack of access to values, beliefs, knowledge, information and attitudes which deprived the people of the ability to control their personal destinies and political deprivation emanating from lack of political voice to participate in decision making that affect their lives (Gafar, Mukaila, Raji and Micheal, 2011).

According to United National official, Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society.

Julian and Ana (2010) investigated financial inclusion and poverty in Peru, employed panel data, variables used are micro loans, access to lending and access to technology. The study revealed financial inclusion does not have an alleviating effect on various indicators of poverty. Suggested increase access to communication such as internet. Contrarily, Jabir (2015) investigated financial inclusive and poverty reduction in sub-Sahara Africa in Ghana, employed treatment effect version of Heckman sample selection model and propensity matching (PSM) on personal insurance, credit from formal financial institution, mobile payment and savings and found financial Inclusion have significant poverty reduction effect. Recommended countries should mainstream financial Inclusion in

their poverty reduction strategies and programmes. The results of both have an empirical background which can be used for policy here but the research is conducted in the different geographical sphere, therefore, the result could differ from countries to countries in terms of socioeconomic variations. Similarly, Cyn-Young and Rogelio (2018) studied financial inclusive, poverty and income inequality in the Philippines, employed qualitative choice model on rule of law, population, education completion, literacy and low income and found that financial inclusive significantly reduce poverty. Suggested stronger rule of law, provisions for young and old aged population. The researcher failed to used empirical analysis to discuss the effect of financial inclusion on poverty and that of the determinants.

Murari and Manish (2010) examined poverty alleviation through financial inclusion in India, employed qualitative choice model on savings, affordable credits, financial advice and payments remittance and found that financial inclusion provides entrepreneurial opportunity for household upliftment. Suggested stringer credit facilities and provision of bank guarantees. Solomon (2014) studied financial inclusion, a tool for poverty alleviation and income redistribution in developing countries in Nigeria, employed content analysis and found that financial inclusions constitute important tool for poverty alleviation. Suggested continues effort of stakeholders in financial sector. Also, Sanya and Olumide (2017) studied financial inclusion as an effective policy tool of poverty alleviation in Ekiti state Nigeria, employed descriptive statistics and multinomial logit model using commercial bank branches, cash centres, overdraft and special fund access to customers and found that employment, marital status, educational level, distance household size etc. are the determinant of poverty and financial inclusive. Suggested introduced grants, draft and special fund that can be easily accessible by customers.

Okoye, Kehinde, Erin and Modebe (2017) examined financial inclusion: a panacea for balance economic development in Nigeria, employed OLS techniques used loan to rural area, loan to deposit ratio and branch network and found that financial inclusion has promoted poverty alleviations in Nigeria. Suggested increase rural delivery and effective resources allocations. Onaolapo and Odetayo (2012) studied financial inclusion in Nigeria from the perspective of Microfinance banks using a survey design method. They find that access to financial services through Microfinance institutions by less privileged people promotes employment generation, reduction in poverty and overall economic growth. Their study only provides descriptions of the techniques used without testing for statistical significance.

Jalilian and Kirkpatrick (2005) assess the impact of financial development on poverty reduction in both developed and developing countries using data from Dollar and Kraay (2002). They find that financial sector development policy contributes to poverty reduction after controlling for key macro-economic variables such as inflation rate, share of trade and public spending. They also find that the impact of financial development on poverty reduction will be affected, only by any change in income inequality resulting from financial development. However, they were not able to clearly state their measurement of the financial development. One can deduce from their measure of financial sector development using income growth and improved supply of access of financial services to the poor as an element of financial inclusion. Again, they used the Gini concentration ratio to proxy for inequality, which clearly shows some semblance of poverty reduction measure.

Abdin (2016) investigated financial development and poverty reduction in Bangladish, employed OLS and GMM, credit access and savings opportunity were variables used and found that financial development has negative impact on poverty reductions. Suggested reform financial sector, liberalization of financial sector, provision of credit facilities and promotion of Microfinance bank. Similarly, Madhu and Giri (2016) in India employed ARDL model and Granger causality and found that there is long run relationship between financial development and poverty. Recommended increase financial accessibility.Accordingly,Akhter and Daly (2009), examine the role of financial development on poverty reduction in 54 developing countries using Fixed Effect Vector Decomposition Model (FEVD) and find that financial development is conducive for poverty reduction but the instability accompanying financial development is detrimental to the poor. They also posit that there is a positive relationship between financial development and financial instability in those countries. One of the weaknesses of their model is that they do not

consider simultaneity bias in the model which can lead to endogeneity problems.

Adonsou and Kevin (2016) in US employed two-stages least square, used credit to GDP, rule of law, poverty gap and ethnic tension and found that Banks have some ability to reduce poverty. Recommended encourage bank assets, credit facility to household and enforce rule of law. Quartey (2005) assesses the effect of financial development on savings mobilization and poverty reduction in Ghana using time series data spanning from 1970-2001 applied OLS and Granger-causality, and found that financial sector development does not Granger-cause savings mobilization in Ghana, it induces poverty reduction. Again, he finds that savings do Granger-cause poverty reduction in Ghana. He contends that the effect of financial development on poverty in Ghana is positive but insignificant. He uses M2 as a percentage of GDP and domestic credit to the private sector as a measure of financial development. Broad money supply has deposit as its component which signifies the level of financial deepening in Ghana hence financial inclusion. He uses per capita consumption as a measure of poverty reduction signaling the effect of poverty reduction when it is Granger causal with financial development. One of the key strengths of his multivariate test is that he was able to establish the short run and long run effects of both of his models. However, he did not test for possible non-linearity and interactive effects in his model.

Jones (2008) study the effect of poverty reduction on financial inclusion using British Credit Unions as a case study. The results from his review show that credit unions in Britain are effective in reaching financially excluded people in Britain. His results suggest that credit unions help the very poor to become financial included in the formal financial sector. However, since he did not use quantitative data, it is difficult for us to establish any correlation or causal relationship between poverty reduction and financial inclusion in Britain. While controlling for certain characteristics such as depth of private banking credit, inflation rate, and others, Honohan (2008) examines the effect of access to finance using over 160 countries worldwide including SSA and finds a correlation but not a causal link between access to finance and poverty reduction. His results are somewhat consistent with Rewilak (2013) who finds that financial development may alleviate poverty but not universally. His model is likely to suffer from endogeneity bias since he did not control for possible simultaneity biases.

Anwar, Uppun and AbdiRevian (2016) examined the role of financial inclusive to poverty reduction in Indonesia, employed panel data on growth, investment and geography and found that financial inclusive lead to poverty reduction (negative relationship). Suggested increase investment. Similarly, Aderibigbe (2001) in Nigeria employed qualitative choice model found that access to fund, adequate credit facility and technology access reduce absolute number of people living in poverty. Recommended access to fund, adequate credit facility, and access to technology. Odhiambo (2009), examines the role of finance, growth and poverty nexus in South Africa, using trivariate Granger-Causality Model (TGCM) and finds that both financial development and economic growth Granger-cause poverty reduction in South Africa. He again notes that economic growth Granger-causes financial development hence leads in the process of poverty reduction in South Africa. He uses the vector error-correction model to differentiate between the short and long run causal relationship he wanted to establish. He measures the level of financial development using the ratio of broad money to GDP as others have done suggesting that there is financial deepening which will lead to financial inclusion hence poverty reduction. However, he did not control for any macroeconomic consequences that might endanger the model. His findings are consistent with Odhiambo (2010) who finds a distinct causal flow from both financial development and savings to poverty reduction in Kenya by the same methodology as in the case of South Africa.

Imai et al. (2010) look at the impact of Microfinance institutions (MFIs) on poverty reduction in India using cross-sectional data and find that loans for productive purposes were more important for poverty reduction in rural than in urban areas. They also establish that living in urban areas, and simple access to MFIs, have larger average poverty-reducing effects than the access to loans from MFIs for productive purposes. Their results suggest that the presence of Microfinance institutions enables the rural poor to have access to financial services such as loans which could help in reducing their poverty level when applied appropriately. Access is an important component of financial inclusion so the influence of MFIs through access to the rural poor

is an indicator of financial inclusion. Imai, Gaiha, Thapa, and Annim (2012) once again examine the effect of Microfinance institutions on poverty reduction in Latin America and the Caribbean using cross-sectional and panel data and find that Microfinance institutions significantly reduce poverty at the macro level. By using penal least squares (PLS) and GMM. Swamy (2014) study financial inclusion, gender dimension and economic impact on poor households in India using cross-sectional and time series data. The study reveals that in general, women participation has increased household income by 16.23% on average in India. He also finds that gender matters in the impact of financial inclusion programmes for the poor. He notice that income growth (CAGR) net of inflation effect was 8.40% for women as against 3.97% for men, indicating that the gender participating poor undoubtedly affects the outcomes of financial inclusion programmes. His results, therefore, suggest that financial inclusion is important in poverty reduction for poor households in India.

**3. Methodology**

The data for this research were sourced from primary data. Primary data is a data source from questionnaires, interview, observations and so on. The essence of this choice is to give us depth research and get the highest accuracy of our study and avoid biased results. It 's difficult to study the entire population of the study area. The population is the total number of people living in a given geographical area. According, to 2006 census, Niger state has an estimated population of 3,954,772, due to the large population size. There is a need for us to make a sample population of our choice that will give us good representative.

Niger State has three senatorial districts such as zone A which is purely Nupe dominant, zone B comprises of Gwari, Hausa, and Nupe, and zone C is Hausa, Kamuku, Kamberi and so on. We employed stratified random sampling. Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata. In stratified random sampling or stratification, the strata are formed based on members' shared attributes or characteristics. Therefore, we strata it bases on zoning method ( zone A, B, and C). Slovin formula is used to determine the sample size. The Slovin formula to obtain a small sample size for the study and the level of accuracy or confidence chosen is 92 and an error tolerance level is 8%. The Slovin formula is given as:

$n=N/1 + N(e)^2$

Where; n = sample size
N = population size
e = marginal error or level of significance

Hence; with N = 3,954,772 and e = 8% (0.08), n = 156.24 ≈ 156

Computation using the Slovin-formula thus gives the sample size of 156. Therefore, we partitioning the state into strata based on the three senatorial zones (Zone A, B, and C), then 52 individuals were randomly selected from each zone to fill the questionnaire.

Base on the nature of the research and the accuracy we intend to achieve. This study will employ multiple logit regression models using Eview to run our analysis. What prompts us to choose this model are as follows: first, the nature of the study requires a high and accurate method of analysis which the outcome could be used for policy making. Secondly, It aims at building a biologically acceptable model that can identify the relationship between dependent and independent variables in a way that will have the best suitability for use of the least variable. Thirdly, the flexible nature of logistic model does not have any assumption limitation. Fourthly, Logistic regression is that it is same as the other model building methods used in statistics.

*Model Specification*

Pov = f(finicl) 3.1

The equation 3.3.1 is the functional relationship between poverty and financial inclusion. Pov is poverty and finicl is financial inclusion. To further simplify our model to incorporate the financial inclusion indicators. We have this:

Finicl = f(foac, finadv, mpy, tpt, acfc) 3.2

Foac = formal ownership of account
Finadv = Financial advice
Mpy = mobile payment
Tpt = teller point
Acfc = access to formal credit
Pov = f( foac, finadv, mpy, tpt, acfc)

$Pov = a + b_1 foac + b_2 finadv + b_3 mpy + b_4 tpt + b_5 acfc + u$ 3.3

U = the Error term
a = constant
$b_1$ to $b_5$ = coefficient of the parameters

$b_1$ to $b_5 < 0$ . This is the a priori expectation of the model

*Formal Ownership of Account:* we expected formal ownership of account should have an inverse relationship with poverty because if the poor have access to formal financial service the account could be used to engage in different business activities such as borrowing, savings, and investment which has strong potential to push them out of poverty. An account can be used to save money, to make or receive payments, to receive wages and remittances, and to borrow money from a formal financial institution ( Jabir, 2015). Those with access to formal financial services take the binary value of 1 and 0 otherwise.

*Financial Advice***:** The financial advice is expected to have a negative relationship with poverty. The financial adviser provides poor clients with financial advice in terms of investment, loan and can help with life insurance and business planning they need. This will go along making the life better for them through improved welfare. Those that have financial advice take the value of 1 and 0 otherwise.

*Mobile Payment***:** This is the easiest, safest and fastest way of making transaction. It saves poor from the risk of cash lost or theft, saves time for other activities or it provides ways for multiple businesses and unnecessary business charges which increase revenue. The mobile payment is expected to have a strong hood of reducing poverty. Therefore, those that use phone transaction takes the value of 1, those that have a phone but do not use it for transaction 0, and not have a phone at all 2.

*Teller Point***:** this is a new introduce cash withdraw, deposit, open account, bill payment, buy airtime, transfer fund, and others center available to low-income earners to ease access to finance at affordable and less stress to ease the doing of business and other financial challenges. The teller point is also expected to have a significant effect on reducing poverty because of it's financial proximity to poor clients. Those that patronize teller point 1 and 0 otherwise.

*Savings:* according to classical theory savings equal investment. That is, whatever an individual saves indirectly tdug back into the business. Here we are looking at the only proportion of those that have a formal account and saves money. There are those that have a formal account but do not save in their money. The expectation is that that the poor who saves money in their accounts should have a reducing poverty rate. This is because savings can help the poor to accumulate capital to undertake investment in any business venture. If an individual has saved within the last 12 month it takes the value of 1 and 0 otherwise.

*Access to Formal Credit:* one of the definitions of financial inclusion is access to formal credit. Borrowing has some effect on the poor who are financially included. Thus, it will help to make funds available to the poor who will intend invest those funds thereby getting them out of poverty. But the capacity or strength of borrowing depends on the interest rate charging, the lower the interest rate the higher the borrowing capacity vice verse. Therefore we expected an inverse relationship between the two. If an individual has access to formal credit in last 12 month and invests it takes the binary 1, access to formal credit in the last 12 month but does not invest it 2, and 0 does not have access to formal financial credit.

*Poverty***:** poverty will be measured by the relative poverty perception. According to World Bank (2014), relative poverty is a condition in which people lack the minimum amount of income needed in order to maintain the average standard of living in the society in which they live. It is considered the easiest way to measure poverty in individual country. The poverty line of expending $1.90 a day will be used as a measure of poverty status of households to be studied. If the household is none – poor expend more or equal $1.90 takes 0 value, 1 if the household is poor expend less than $1.90.

Table 3.1; Dependent Variable: POV

| Variable | Coefficient | z-statistics | Prob. (z-stat) | dy/dx (Marginal Effect) |
|---|---|---|---|---|
| Constant | 3.610896 | 4.58 | 0.000* | - |
| FOAC | -2.518439 | -4.07 | 0.000* | -0.5155679 |
| FINADV | -1.380861 | -2.39 | 0.017* | -0.3293198 |
| MPY | 1.267733 | 2.41 | 0.016* | 0.3027838 |
| TPT | -0.9570529 | -1.91 | 0.056** | -0.2207114 |
| ACFC | -3.88521 | -5.83 | 0.000* | -0.7492602 |
| Pseudo $R^2$ = 0.4855, Log Likelihood Ratio $^2$ = 103.48, Prob. $>^2$ = 0.0000, _hat = 1.02(6.10), _hatsq = -0.044(-0.68) | | | | |

*Source: Author's Computation using Stata 13.0; * (**) – 1% (5%) level of significance*

The result of the binary Logistics regression model presented in Table 2 follows the empirical model of the impact of financial inclusion on poverty in Niger State stated in Equation (3.3) which the response (dependent) variable is based on the binary response or either being poor or non-poor based on the expenditure of below or above $1.90 daily. However, given the value of the Pseudo $R^2$ which is the measure of goodness of fit synonymous to the conventional $R^2$ as 0.49, indicates that about 49% variations in the response variables are been explained by the explanatory variables in the model. Furthermore, apart from the measure of goodness of fit, link test (_hatsq) and Log Likelihood Ratio (LR) as well shows the correctness and efficiency of the model specified and estimated.

From the empirical result in Table 2, the coefficient of the constant term which represents the value of the response variable when all the explanatory variables in a model are assumed fixed is positive and significant, indicating that when the indices or indicators of financial inclusion (formal ownership of account, financial advice, use of mobile payment, use of teller or ATM point and access to financial credit) are held constant, the log of the odds of poverty in Niger state tend to aggravate by 3.6.

The probability of the ownership of financial account by an individual shows a negative and significant influence on poverty in Niger state, indicating that account ownership is vital in poverty eradication. This, therefore, implies that for a unit increase or decrease in the probability of the ownership of the financial account, the log of the odds ratio of poverty will likely decrease or increase by 2.5. Although in reality, the ownership of financial account does not necessarily facilitate the alleviation of poverty, it is assumed that an individual will only save excess after making provision for consumption expenditure.

Given the importance of financial advice, the probability of an individual receiving financial advice or having a financial adviser is statistically significant on 1% level of significance in reducing poverty given the negative sign of the coefficient of financial adviser in the empirical result presented in Table 3.1, which thus denotes a negative relationship between poverty and financial advice. This, therefore, denotes that a percent change in the probability of an individual having a financial adviser tend to cause the log-odds of poverty to decrease by 1.4. Invariably, the probability of ownership of mobile phone or smart-phone that can facilitate financial transaction poses a significant and positive relationship with poverty in Niger state. Empirically, this indicates that for a percent increase in the probability of owning a smart-phone of mobile phone that can facilitate financial transaction will likely cause the log-odds of poverty to increase by 1.3. It then means owned a smartphone does not guarantee one to participate in a financial transaction.

Furthermore, the probability of patronizing teller point or ATM stand for financial services or transactions shows a statistically significant negative relationship with poverty. On average, a percent increase in the probability of patronizing teller point or ATM stand will likely cause the log of the odds of poverty to decrease by 1.

When formal credits are made accessible, available and affordable to individuals in a given locality, it tends to improve the living standard of the people. This as shown in the empirical result obtained with the probability of access to formal credit influencing poverty negatively and significantly. This denotes that for a percent increase in the probability of access to formal credit will likely cause the log-odds of poverty to decline by 3.9. And this indicator of financial inclusion (access to formal credit) is unarguably the most significant and most potent poverty reducing mechanism.

The result of logistic regression model presented in Table 3.1 also explains the marginal effect for each financial inclusion indicator in respect to its effect on poverty in Niger state. From the marginal effect in Table 3.1, increase in formal account ownership will cause poverty to decrease by 52%. Furthermore, changes in the probability of having a financial adviser, patronizing teller point or ATM point for financial services or transactions, and the access to formal credit will cause poverty to decrease by 33%, 22% and 75% respectively. As such, increases in the probability of using a mobile phone that can handle financial transaction tend to cause poverty to increase by 30%.

## 5. Conclusion and Recommendations

Theories and empirical evidence have suggested that financial inclusion leads to poverty reduction. The investigation revealed also that access to formal credit, financial adviser, teller point, and formal ownership of the account lead to an improvement in

the welfare of the people. Therefore, financial development can bring about a better life for people and the society which is one of the indices for development. The following are recommended base on the findings.

Regulation. The government should try by all means that everyone has an active formal account with the bank, just the way everyone is compelled to collect national identity card.

The government should also make a provision that will checkmate the activities of banks loan to an individual to avoid the tedious process and this should be done through central bank of Nigeria

The central bank of Nigeria should encourage the commercial banks to install ATM or teller point in strategies places both in the rural and urban area to allow people have easy access to their money.

The financial intermediary should have a customer advisory department aside from customer unit. The former is to advise the customer purely on important of financial services to improve their welfare and how they can give them working hand to improve a better standard of living. This can also be done through a promo and advertising because at the end of the day both again ( bank and customer).

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