



## **Can Optimal Digital Innovation and Financial Inclusion Drive Poverty Reduction in the Niger Delta Region of Nigeria?**

**Eugene Okoi Ifere<sup>1\*</sup>, Napoleon David Okosu<sup>2</sup>**

<sup>1</sup>Department of Economics, Federal University Lafia, Nasarawa State, Nigeria, <sup>2</sup>Department of Financial Policy and Regulation, Central Bank of Nigeria, Nigeria. \*Email: [eugeoifere@gmail.com](mailto:eugeoifere@gmail.com)

### **ABSTRACT**

Poverty has remained a stubborn challenge in the Niger Delta region of Nigeria amidst abundant natural resources. The sheer complexity of the Niger Delta with coastal waterways, creeks and islands creates unique challenges that cannot be underestimated. The study surveyed the extent of poverty using monthly income distribution, and degree of financial inclusion using access and usage of products and services. Findings revealed that women are more financially excluded. Findings also showed that majority of the population are unbanked and highly discouraged using financial products and services especially automated teller machine for fear of debiting without payment, long queues, high interest rates on loans and difficulty in accessing credit from financial institutions. The study suggests that the provisions of optimal digital financial services and products in this rural community with adequate education and advocacy for all the population will broaden financial inclusion, thereby contributing to poverty reduction.

**Keywords:** Financial Inclusion, Poverty, Digital Innovation

**JEL Classifications:** G21, O4

### **1. INTRODUCTION**

Poverty and widespread hunger are seriously and increasingly concentrated in the sub Saharan Africa and fast becoming a humanitarian issue. Even though the urban poor are increasing in numbers, the rural population (mostly women) is the most vulnerable group experiencing extreme poverty. More than half of adult Nigerians do not have formal bank accounts and so are financially excluded. The concept financial inclusion according to Sarma (2008), is the process that ensures the ease of access, availability, and usage of formal financial system for all members of an economy. It is the extent to which financial services and products reach the poor households (deficit) units timely, and easily from surplus units (banks, multinationals, grant in aids, government etc.) to aid them in alleviating poverty without incurring additional cost. Khan (2011) sees the pursuit of financial inclusion as a compulsory and not just a policy option. On the other hand (Agrawal, 2008) as defined by Rangarajan's committee is the process of ensuring access to financial services and timely, and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost."

Amidžić et al. (2014) defined financial inclusion as an economic state where individuals and firms are not denied access to basic financial services. It can be voluntary or involuntary. The World Bank (2014) defines voluntary exclusion as a condition where a particular population chooses not to use financial services either because they have no need for them or due to cultural or religious reasons; involuntary exclusion arises from insufficient income and high risk profile or due to discrimination and market failures and imperfections.

According to empirical findings from enhancing financial innovation and access (EFInA) Survey Report (2012), 42.7% of the total adult female population and 35.8% of the total adult male population are financially excluded in Nigeria. It is also reported that 47.8% of rural and 24.8% of urban adult population are financially excluded. In Africa, apart from South Africa with 67% of banked adult, Nigeria ranked second with 36% after Kenya 30% and Tanzania 29%, but on the contrary in terms of financial inclusion Kenya and Tanzania has a higher percentage of formally included adults mainly due to the high uptake of mobile money than Nigeria. In the same (EFInA) Survey Report (2014), 55.9% of

adult males, 70.6% of adult females, and 75.0% of rural population are unbanked, with direct bank branches of 46.3% as the most frequently used channels of banking transaction and automated teller machine (ATMs) 53.0% leaving a very low gap in the use of e-payment channels. According to Mbutor and Uba (2013), an empirical picture of the position of Nigeria in terms of financial inclusion shows that between 2008 and 2010, the percentage of financial exclusion fell from 53% to 46%. While those served by the informal sector fell from 24% to 17%. They further assert that in terms of access to savings products, Nigeria has 461 savings accounts per 1000 that is considered to be poor compared with 2,063 savings account in Malaysia. For credit penetration as an index of financial inclusion, Nigeria was rated low compared to other peer countries. In comparison with South Africa, Nigeria has 2% access to formal product against South Africa with 32%. In terms of Insurance penetration, Nigeria records only 1% while South Africa records as high as 30%.

To Subbarao (2009), financial inclusion is necessary condition for sustainable and equitable growth. That only very few countries have taken off successfully from a primitive agrarian state to a postindustrial economy without first having the foundation of a broad based financial inclusion strategy.

Sarma and Pais (2010) in a similar vein, asserts that financial inclusion process promotes ease of access, availability and usage of the formal financial system to all the segments of the economy. They further assert that an inclusive financial system can help reduce prevalence of informal financial institutions that are seen to be core capitalist and exploitative. According to them, an all-inclusive financial system enhances efficiency and welfare by providing avenues for secure and safe financial practices.

According to Hariharan and Marktanner (2012) financial inclusion is the access to formal financial services such as credit, savings and insurance opportunities. That lack of financial inclusion can be viewed as a multifaceted socio-economic phenomenon that results from various factors including geographic, cultural, historical, religion, socioeconomic, structure of the economy and policy. They noted financial inclusion to be a huge source of economic growth and development with the ability to create capital and total factor productivity of a country.

While Mahendra (2006) sees financial inclusion to be the availability of banking services at an affordable rate to the large segment of the vulnerable and low income groups. That although credit is taken to be the most significant component of financial services, such as savings, insurance payments and remittance facilities issued by financial institutions to those perceived to be financially excluded.

This financial exclusion may be as a result of market failure, distance to banking facilities, products or services, fees and education. It has also been observed that within the different regions and communities that make up Nigeria, disparities exist in access and usage of financial services. In terms of Geo-political Zones the North East is ranked the highest financially excluded zone with 68.4%, followed by North West 56.0%, while North

Central and South South (Niger Delta) share 32.7% each and south east, south West have 25.4% and 24.8% respectively. A great number of population in the rural communities are confronted with the huddles/challenge of ineffective and unaffordable financial inclusion tools necessary for saving, borrowing, making and receiving payments of money with ease. Transforming the lives of these vulnerable groups using innovative financial inclusion strategy on the unbanked and under banked could be priceless. A clear understanding of the link between financial inclusion and poverty at the rural level is key to optimal design, innovation and implement of financial services necessary for reduction of poverty. Insecurity, environmental degradation, health failure, marginalization, financial and state failures can be considered as possible elements that drive poverty and extreme hunger in these areas. A sizeable number of this group have no access to basic financial services which are taken for granted in developed economies and so could not save, borrow nor invest. This condition makes the rural poor to be extremely vulnerable to cash theft starved under pillows and cracks. Studies have shown that poverty reduction, entrepreneurship, investment and economic growth potentials are common amongst a population with the ability to save and borrow.

It is unarguably that innovation in mobile and electronic banking has facilitated formal credit and savings products to the hitherto financially excluded populations. Despite strides in financial innovations, the African continent nay Nigeria and Niger delta region still confronted with great challenges and lags behind in, widespread adoption of effective and secure services. The sheer complexity of the Niger Delta with coastal waterways, creeks and islands creates unique challenges that cannot be underestimated.

Finance is the core of the modern economy, in the economic operation; it plays an important role in guiding the flow of resources in the region and among regions through special funds flow, which gets scarce resources in the region (Luo and Zhou, 2009). This can as well promote the reform of the corporate governance. Both Cross and country specific studies have reached the conclusions that income inequality is lower in countries with deeper and more accessible financial markets. Jahan and McDonald (2011) use the Gini coefficient to measure inequality and find that a more developed financial system tends to have less income inequality although with much variations. Their results of cross-country analysis shows that: Gini coefficients fall more rapidly in countries with more developed financial intermediaries (such as banks or insurance companies); with better developed financial intermediaries, the income of the poorest 20% of the population grows faster than the national average; and the percentage of the population living on less than one or two dollars a day falls more rapidly with higher levels of financial development (Beck et al., 2007).

For country-specific (Burgess and Pande, 2005) in their impact study of bank branches in rural India found that output increased and poverty decline with greater access to finance. While (Beck et al., 2010) conclude in their study that greater access to bank branches lowered income inequality in the United States.

The benefits of financial development extend beyond income equality to other poverty indicators. Countries with well-developed financial system seem to have a lower incidence of poverty than others at the same level of national income (Jahan and McDonald, 2011). Evidence abound that financial development improves societal health, education, and gender equality and reduce child labour. To buttress further, Honohan (2007) in a study concludes that a 10% increase in the private credit-to-gross domestic product (GDP) ratio reduces the population of poverty by 2.5-3%. In the same argument, Claessens and Feijen (2007) submit that a 1% increase in private credit to GDP ratio reduces the prevalence of undernourishment by 0.2-2.5%. According to Mbutor and Uba (2013), the financial action task force reiterates the need for a broad based financial inclusion in 2011 when it noted that financial exclusion is a risk to financial integrity. The motivation was based on the premise that extending formal financial services to all the segments of the society will improve law enforcement by ensuring that more transactions are subject to the anti-money laundering and combating financing of terrorism controls and monitoring.

The untold poverty in the Niger Delta region of Nigeria is a true representation of shallow financial depth amidst wealth. This means that the range of financial assets available in the Niger Delta region is narrow. This is evidenced by the scanty number of commercial bank branches and ATM points and other financial assets within the states that make up the Niger Delta in respect to the population (Table 1). The stock market presence; the number of credit facilities accessed by indigenes of the area which is quite worrisome as well as the number of educated population and indigenes who have awareness to operate bank accounts with commercial banks in the area.

This study seeks to empirically evaluate the impact of financial inclusion on the overall wellbeing of the people of the Niger Delta by looking at a wide range of financial assets. This can be specifically achieved by determining the appropriate measure of financial inclusion in the region. Policy direction aimed at promoting financial development to alleviate poverty and foster growth, are also articulated in order to stem youth restiveness to its barest minimum.

This study is divided into four sections. Section one is the introduction; section two is a brief X-ray of the Niger Delta region of Nigeria. Section three discusses the impact and relationship between financial, inclusion and poverty in the Niger Delta; section

four presents data and methodology for the study, while section five presents the results of the analysis and finally the concluding statement and policy direction and recommendations.

## 2. THE NIGER DELTA REGION OF NIGERIA

The Niger Delta region is one of the largest wetlands in the world. This geo-political zone is occupied mainly by the minorities of Southern Nigeria which currently comprises the nine states of Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers, redefined to encompass the contiguous three other oil-producing states; Abia, Imo and Ondo, in addition to the original six. The region covers an area of 70,000 km<sup>2</sup>, with sandy coastal ridge barriers, brackish or saline mangroves, permanent and seasonal swamp forests as well as low land rain forest with the entire area crisscrossed by a large number of rivers rivulets, streams, canals and creeks (NNPC, 2005).

In terms of mineral resources, it is one of the richest deltas in the world with huge oil and gas reserves, ranking as the worlds' sixth largest exporters of crude oil and second largest producer of palm oil, after Malaysia, which even obtained its palm seedlings from Nigeria (Petters, 2011). The Niger Delta states are rich in petroleum and gas resources, and at present produce the biggest proportion of crude petroleum and gas in Nigeria. These states are endowed with many rivers and waterways. As a major wetland in the world, it houses one of the largest ecosystems that play a significant role in the world economy in terms of trade, given its ports and access routes. These access routes which include, ports and rivers have served as a lucrative trade routes right from the colonial to present era for trade in slaves, export commodities such as groundnuts, palm produce, timber, rubber, and cotton as well as other imports from abroad.

The indigenous people of the oil fields of the Niger Delta region of Nigeria are ethnically made up of those in Rivers and Bayelsa states (Kalabari, Ikwerre, Ijaw, Okrika, Ibani, Nembe, Ogoni, Ekpeye, Ogba, Engenni, Epie-Atissa); Akwa Ibom state (Ibibio, Anang, Oron); Cross River State (Efik, Ejagham, Bekwarra, Yakurr); Ondo State (Yoruba, Ijo, Illaje); Edo state (Edo, Etsakos, Yoruba, Igbirra, Okpameri); and the Igbos in Abia and Imo states.

Agriculture is the most dominant economic activity in the Niger Delta States with crop farming and fishing activities accounting for about 80% of all forms of agricultural activity (MEP, 2008). However, environmental degradation, which is caused by total dependence of the teeming rural population on unsustainable agriculture, fishing, forestry and wildlife exploration, has been a serious threat to the Niger Delta, relegating the population to poverty state amidst wealth and rich natural resources. The people are poverty stricken, depending on un-sustained agriculture and fishing which has been extinct and destroyed. A high financial inclusion in the Niger Delta is likelihood to generate positive employment, improved productivity and economic growth and alleviate poverty to its barest minimum; without necessary feeling the impact from the much destroyed ecosystem. Financial inclusion can be a solution to cushion the effect of the much destroyed ecosystem.

**Table 1: Distribution of microfinance banks in Nigeria**

Distribution of microfinance banks by geopolitical zone					
Geographical zone	National MFB	State MFB	Unit MFB	Total	% of MFBs
North Central		13	162	175	18
North East		7	43	50	5
North West	1	2	126	129	13
South East		20	153	173	18
South South	1	21	85	107	11%
South West	5	35	301	341	35
Grand total	7	98	870	975	100

Source: CBN, 2014



### 3. RELATIONSHIP BETWEEN FINANCIAL INCLUSION AND POVERTY

A sound financial system can promote economic growth and stability. Some theories have suggested that the creation and promotion of efficient financial markets (institutions) are necessary for a genuine and enduring economic growth process; that financial markets can ameliorate risk, improve corporate governance, mobilize savings, reduce transaction and information costs, and promote specialization (Bencivenga and Smith, 1992; Levine, 1997); while other models show that financial development reduces poverty and income inequality directly, by disproportionately relaxing credit constraints on the poor, and indirectly, by improving the allocation of capital and accelerating growth (Jahan and McDonald, 2011).

However, in the Niger Delta, the benefits of financial inclusion have not extended beyond financing investment in the oil exploration by oil multinationals. Financial development in the Niger Delta does not reduce inequality because; the benefits accrue primarily to the rich at the expense of the middle and low income citizens. According to IMF (2007) financial globalization that concerns foreign direct investment has been associated with widening income disparities. In such situations, there is a risk that small groups of elites may capture the process of financial liberalization directing it in ways that narrow rather than broaden access (Claessens and Perotti, 2007).

The relationship between financial inclusion and poverty could be viewed from two perspectives; the direct and indirect links. The direct link could present when the benefits of financial inclusion transcends to reducing poverty and income inequality while the indirect link on the other hand presents when financial inclusion exerts a positive effect on economic growth and how such gains from growth are channeled to the benefit of the poor. Right from the discovery of finance as a pivot to economic growth, studies have shown that the development of financial inclusion can ease the credit constraints hitherto faced by the poverty stricken class, which has hindered their ability to undertake productive investments. Whenever, access to credit is increased and made easy, the very low income (poor) would improve their welfare by spending more on consumption. The ease of accessing credit will also enable them the opportunity to raise capital from financial intermediaries for productive investment, which ordinarily were left to those in the rich income strata. In the works of Greenwood and Javanovic (1990), they submit that the relationship between income inequality and financial development takes on an inverted-U-shaped curve; that in the early stages of development, the poor will not be able to afford the initial setup costs associated with accessing financial intermediaries and thus the benefits of enhanced financial intermediation will be felt only by the rich. This would result in a widening of income inequality. In a similar situation, when the lending rates are fixed very high, it will limit the number of poor households obtaining credit because when the poor take out credit at high rates, there will be increase in default of non-performance in loans; hence financial fragility.

#### 3.1. Financial Literacy, Technology Diffusion and Flexibility of Financial Services

The idea of financial inclusion as it affects the rural poor in the Niger Delta region of Nigeria poses a challenge to different groups of individuals in ameliorating this economic quagmire. First is the issue of financial literacy, which emphasizes the degree to which financial products and services are made, known to target populations and vulnerable groups (women and youths) who have been hitherto financially excluded. In this wise, creation of awareness by financial institutions on the availability of products, services and requisite technologies for the mobilization of savings or facilitation of financial services will bring about a tremendous transformation in the accessibility of these products.

Secondly, the idea of technology diffusion on the part of the target population is highly instrumental in determining the degree of assimilation of products and services. In this connection, the following questions must be answered;

- What is the percentage of adults (particularly women) and youths in the rural areas have and operate bank accounts with functional ATM cards?
- How many of these people own or have access to multimedia phones with required software packages for carrying out financial transactions?
- How many of these people have point of sale (POS) terminals in their business? Or how many can understand or appreciate the idea of using a POS terminal instead of moving physical cash?
- What is the percentage of people that can operate a computer and do internet banking with tokens?

These and some other IT related skill-set are required to ensure a greater amount of people in these rural areas become financially included. To this end, they must become technology savvy and adaptable to innovations in banking operations. More important is the degree of flexibility on the part of financial institutions in their operations and dealings with clients in the rural communities; there is need to design programmes that will be tailored to meet the financial needs of these people. The primary objective of this programme should be to mobilize funds in the rural communities, ensure adequate spread of mobile banks and ATMs. This will enhance banking operations among the rural poor. Secondly, the innovations in the banking operations must be flexible so much so that it can be easily adaptable by all classes of people in the rural areas. Example, the development of E-banking software that will work in multimedia and non-multimedia phones will significantly increase the number of users of this product. Also, the ease with which financial product are accessed should be of great concern.

### 4. METHODOLOGY

The study adopts both quantitative and qualitative methods. This was intended to break through and identify the financial needs of the adult population, thereby creating opportunity for optimal use and development of innovative products by financial service providers.

First, the qualitative study adopts a survey design. Carefully structured questionnaires and field observations were used to form part of primary data. This helped to gain in-depth knowledge of the study. Open and close ended questionnaires were used to ascertain facts and solicit recommendations from respondents. Samples were drawn from the population comprising adult community dwellers in each of the three Niger Delta states where research was conducted. These include Cross River State, Akwa Ibom state and Bayelsa state. A total of 450 questionnaires were administered in the 3 states out of the 9 states that make up the Niger Delta. Out of this, 150 rural adults from three local governments each excluding state capitals (in each state) were sampled using purposive random sampling on the basis of its contribution of information rich cases. Input from the civil society group will also form part of primary data for this study. The study put into consideration a non-response rate of 5%. Out of the 450 sampled, 429 were returned. Five of the returned questionnaires were rejected because they were not satisfactorily filled. Only 424 questionnaires amounting to 94.2% fully completed and used for the analysis. The questionnaires were divided into three parts to capture information relating to extent of poverty, awareness acceptability and workability of financial inclusion products and its importance to investment potential and sustainable economic development. The instruments and results obtained from the field were subjected to rigorous scrutiny and validation through triangulation of data and comparative analysis of responses.

## 5. PRESENTATION AND ANALYSIS OF SURVEY RESULT

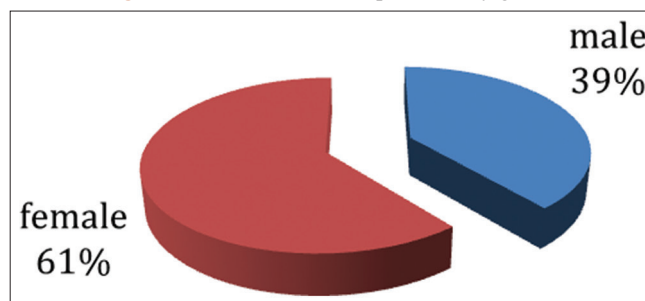
The survey on financial inclusion in the Niger Delta region of Nigeria was conducted from November 2015 to February 2016 in three Niger Delta States. The states are Akwa Ibom, Bayelsa and Cross River States. The survey was based on adult population within two local governments each of these three states excluding the urban and state capitals. The result of the survey is presented as follows.

From the survey, out of a total of 424 respondents, the gender distribution shows that 165 (39%) are adult males, while 259 representing 61% are female adults in the rural communities. This shows that there are more female adults than males financially excluded (Figure 1).

From the survey, the monthly income distribution, which depicts the extent of poverty and inequality as presented in Figure 2 shows that majority of respondents 35.85% are living with no steady income and sustainable means. A greater percentage 54.24% earn between N4, 000 and N8, 000. This is quite small to sustain a household for a month while only 7.54% and negligible 2.35% earn between N21, 000 and above N40, 000 respectively. It can therefore be inferred from the survey that majority of people in the Niger Delta of about 90.09% are living below poverty level.

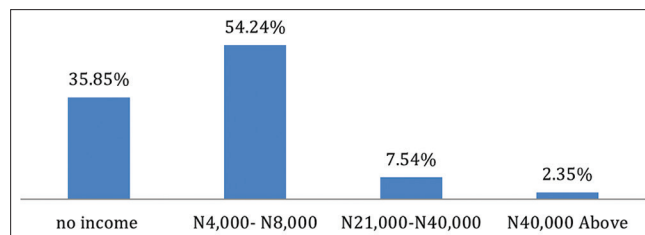
In terms of the extent of financial access by the rural dwellers of the Niger Delta region of Nigeria; survey results in Figure 3 shows that a very small percentage of about 16.04% i.e., 68 out

**Figure 1:** Distribution of respondents by gender



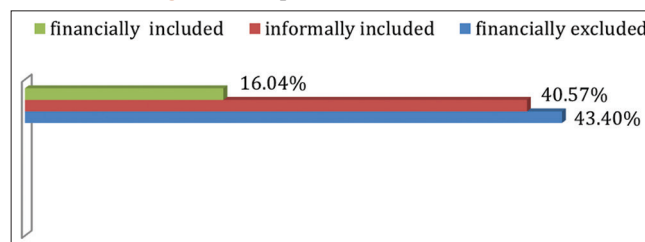
Source: Field survey 2015/2016

**Figure 2:** Distribution of monthly income



Source: Field survey 2015/2016

**Figure 3:** Respondents financial access



Source: Field survey 2015/2016

of a total of 424 respondents have access to or use deposit money banks and traditional banking product, such as ATM/credit card, overdraft, loan from bank, fixed deposit, savings and current accounts. The survey also shows that 40.57% of the population sampled informally included i.e., they do not have any formal bank accounts or make use of any formal bank products. These percentages of respondents only use or have access to informal services and products such as local money lenders, esusu, ajo and other remittances like sending via transport services mobile phones and recharge cards whenever the need arises. The survey further reveals that a great majority of the respondents sampled 43.40% are financially excluded. This means that they do not bank nor have access to loans and gifts of any sort through any financial institutions.

Out of the percentage of adults who are financially excluded, i.e., who do not bank nor have access to loans and gifts of any sort through any financial institutions and had never use any; the women folk are the most affected. From the survey as much as 65% of women have never used nor had access to finance against 35% of men. It can be inferred that the female population are in serious need of financial access and products in the Niger Delta. This can be further proved that the female population are living

far below poverty level and do not have the means to sustainable investment to strengthen their economic power (Figure 4).

The distribution of livelihood profile from the survey as presented in Figure 5 shows that out of 424 population sampled, 47 respondents representing 11.08% are involve in fishing activities, 104 representing 24.53% are involved in various trading activities within the region. Trade in this region is made possible and easy due to its ports and access routes which include, ports and rivers that served as a lucrative trade routes right from the colonial to present era for trade in slaves, export commodities such as groundnuts, palm produce, timber, rubber, and cotton as well as other imports from abroad.

Out of this total population sampled, 183 respondents representing 43.16% are involved in subsistence and commercial farming activities. This is connected with the fact that Agriculture is the most dominant economic activity in the Niger Delta region due to its fertile soil for crop cultivation. However, environmental degradation caused by oil and gas spillage as a result of oil exploration has caused total dependence of the teeming rural population on unsustainable agriculture. This has remained a serious threat to the Niger Delta, relegating the population to

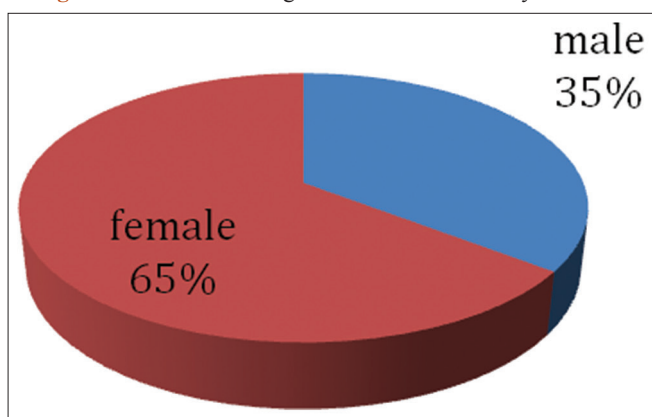
poverty state amidst wealth and rich natural resources. Due to environmental degradation, poverty level is made worse by increasing the dependants to as high as 21.23% of respondents sampled for the survey.

Result from the survey in Figure 6 shows that majority of the people in the Niger Delta are aware of e-banking even when a handful have never used the products. This is represented by 56% of the sampled population. Although a sizeable number of 44% have no knowledge of e-banking because the products have not been brought to the rural area.

The survey result shows that majority of the population in the Niger Delta region own and operates telephones. Even though the telephones are not all smart phones that can be used for fund transfer, withdrawal of money, making of payments, paying of bills, buying of airtime and managing account, but a reasonable percentage of about 75.71% of respondents still own and can operate hand phones. The survey also shows that about 98 respondents sampled representing 23.11% do not own or operate telephones. This may be connected with their low income status. Out of the total of 424 populations sampled, 24 representing 5.66% respondents do not own any telephone, but are eager and desperate to own one (Figure 7).

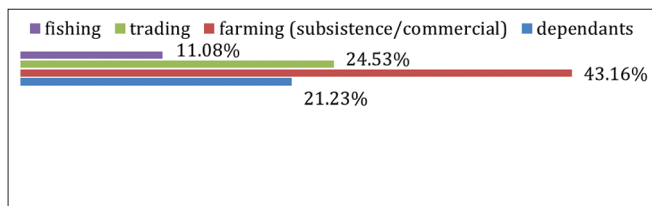
Survey result on the extent to which rural dwellers of the Niger Delta use bank products is presented in Figure 8. According to this result, the population in the Niger Delta is not use to new bank products probably because of the types of phones they use or the knowledge of new innovation in the banking products and services. The most widely used bank products are conventional bank branches with 49.29% which are easy to operate. There are few ATM machines in these rural communities. For example in Cross River State, only one ATM machine owned by UNICAL microfinance bank is functional and servicing two local government areas of Bakassi and Akpabuyo in the southern senatorial district where the survey was carried out. The percentage of respondents using ATM is about 43.63% which shows that majority of the

Figure 4: Distribution of gender that are financially excluded



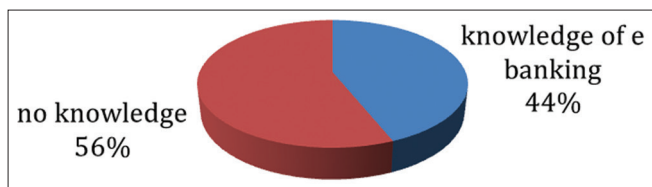
Source: Field survey 2015/2016

Figure 5: Livelihood profile of respondents



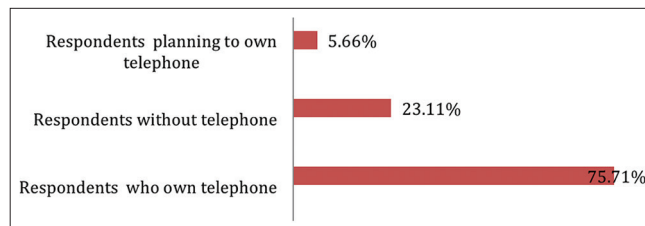
Source: Field survey 2015/2016

Figure 6: Respondents awareness of e-banking



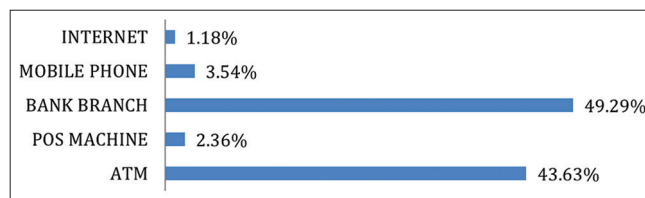
Source: Field survey 2015/2016

Figure 7: Ownership and operation of telephones



Source: Field survey 2015/2016

Figure 8: Usage of bank products



Source: Field survey 2015/2016



population knows how to use this bank product. However, the population in the Niger Delta does not know and use other bank products. Only 1.18% uses internet, 3.54% can use their mobile phones to carry out transaction, while 2.36% know how to use POS machine. The non- use of POS machine is its unavailability in the rural communities.

To ascertain the fear and complaints the rural population have towards nonuse of new bank products, it was established from mutually inclusive result from the survey that the new bank products have their disadvantages. About 201 respondents do not know how to use the new bank products. 378 respondents do not use ATM because the ATM point is far from them while 199 don't use ATM because they are told that the machine can cease ones card. 176 respondents are afraid of being debited without payment. 208 respondents say they cannot stand the long queues experienced in banks while carrying out transaction (Figure 9).

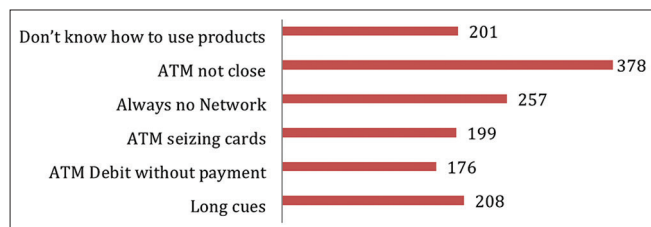
## 6. CONCLUSION AND POLICY RECOMMENDATIONS

To test whether optimal digital financial inclusion can help reduce poverty in the Niger Delta region of Nigeria, we carried out a qualitative survey in 3 states out of the 9 states that made up the Niger Delta. Well-structured questionnaires were administered to adult population to find out the extent of financial inclusion in the region. Also, our finding showed that exclusion was not based on cultural and religious belief, this may be due to the fact that the culture and religion practice in the region does not ban persons from banking services.

Next we tested which factors significantly influence financial inclusion and whether or not optimal financial inclusion in the region can help reduce poverty and income inequality. Our findings clearly show that an optimal digital financial inclusion in the Niger delta could significantly reduce poverty in the region. This can be possible if majority of the population are financially included with easy access to finance, credits and product, which indirectly triggers investment thereby alleviating poverty. Based on our empirical results, we offer several policy implications.

First, to reduce poverty rates in the region, the central bank and policymakers must implement policies that will address impediments to financial inclusion. In this regard, promoting an optimal digital financial inclusion amongst the population by financial institution and Internet network providers is key to poverty reduction.

**Figure 9:** Complaints/fear about bank products



Source: Field survey 2015/2016

Complement efforts to reduce poverty. The role of microfinance in promoting credit allocation to rural dwellers in the Niger delta at a very low interest rate without many constraints should be emphasized.

Second, availability of credit at lower interest rates with no collateral to lower income groups should be emphasized. In this context, financial packages should be developed by financial institutions that permit easy access to credit using phones by the rural population. This will further improve access to financial services and products, which in turn triggers investment in productive activities and reduce poverty.

Thirdly, to further reduce poverty, more optimal digital financial measures must be put in place to educate the use of financial services and products that can further address financial exclusion of low-income groups. In this wise a dedicated network must be used by all financial institutions for their data plan. POS, ATM s and other financial products must be brought close to the rural communities with proper education and advocacy on use and functions. Non smart phones should be designed to be compatible to make use of financial products.

Fourthly, ATMs should be upgraded to stop debiting without payment and constantly having network to function effectively without long ques. This can encourage the local population to use this product.

## REFERENCES

- Amidžić, G., Massara, A., Mialou, A. (2014), Assessing Countries' Financial Inclusion Standing: A New Composite Index. Global Financial Development Report. World Bank IMF Working Paper WP/14/36.
- Beck, T., Demirgüç-Kunt, A., Levine, R. (2007), Finance, inequality and the poor. *Journal of Economic Growth*, 12(1), 27-49.
- Beck, T., Levine, R., Levkov, A. (2010), Big bad banks? The winners and losers from bank deregulation in the United States. *Journal of Finance*, 65(5), 1637-1667.
- Bencivenga, V.R., Smith, B.D. (1992), Deficits, inflation, and the banking system in developing countries: The optimal degree of financial repression. *Oxford Economic Papers*, 44(4), 767-790.
- Burgess, R., Pande, R. (2005), Do rural banks matter? Evidence from the Indian social banking experiment. *American Economic Review*, 95(3), 780-795.
- Central Bank of Nigeria (CBN). (2014), Central Bank of Nigeria Annual Report. Abuja: CBN.
- Claessens, S., Feijen, E. (2007), Financial Sector Development and the Millennium Development Goals, World Bank Working Paper No. 89. Washington: World Bank.
- Claessens, S., Perotti, E. (2007), Finance and inequality: Channels and evidence. *Journal of Comparative Economics*, 35(4), 748-773.
- Enhancing Financial Innovation & Access EFINA Report (2012). Available From: <http://www.efina.org.ng/media-centre/news/access-to-financial-services-in-nigeriasurvey-2012/>. [Last retrieved on 2016 Apr 20].
- Enhancing Financial Innovation & Access EFINA Report (2014). Available From: <http://www.efina.org.ng/media-centre/news/access-to-financial-services-in-nigeriasurvey-2014/>. [Last retrieved on 2016 Apr 21].

- Greenwood, J., Jovanovic, B. (1990), Financial development, growth, and the distribution of income. *The Journal of Political Economy*, 98(5), 1076-1107.
- Hariharan, G., Marktanner, M. (2012), *The Growth Potential from Financial Inclusion*. ICA Institute and Kennesaw State University. Available from: [http://www.frbatlanta.org/documents/news/conferences/12intdev/12intdev\\_hariharan.pdf](http://www.frbatlanta.org/documents/news/conferences/12intdev/12intdev_hariharan.pdf). [Last retrieved on 2016 May 8].
- Honohan, P. (2007), Cross-country variation in household access to financial services. Paper presented at the conference. Access to Finance. Washington, DC: Organised by the World Bank, March 2007. p. 15-16. Available from: <https://www.ideas.repec.org/a/eee/jbfina/v32y2008i11p2493-2500.html>. [Last retrieved on 2016 Apr 23].
- International Monetary Fund (IMF). (2007), *World Economic Outlook*. Washington: International Monetary Fund (IMF).
- Jahan, S., McDonald, B. (2011), A bigger slice of a growing pie. *Finance and Development*, 48(3). Washington: International Monetary Fund. Available from: <http://www.imf.org/external/pubs/ft/fandd/2011/09/Jahan.htm>.
- Khan, H.R. (2011), *Financial Inclusion and Stability: Are They Two Sides of the Same Coin?* Address by Shri H R Khan, Deputy Governor of the Reserve Bank of India. At BANCON, 2011. Organized by the Indian Bankers Association and Indian Overseas Bank, Chennai. Available from: <http://www.bis.org/review/r111229f.pdf>. [Last retrieved on 2016 May 18].
- Levine, R. (1997), Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, 35(2), 688-726.
- Luo, D., Zhou, J. (2009), Financial deepening and regional economic growth: Based on the analysis of China's inter-provincial panel data. p243-246. Available from: <http://www.seiofbluemountain.com/search/download-file.php?id=3100> April, 26.
- Mahendra, S.D. (2006), Financial inclusion: Issues and challenges. *Economic Political Weekly*, 41, 4310-4313.
- Mbutor, O.M., Uba, I.A. (2013), The impact of financial inclusion on monetary policy in Nigeria. *Journal of Economics and International Finance*, 5(8), 318-326. Available from: <http://www.academicjournals.org/JEIF>. [Last retrieved on 2016 May 21].
- Ministry of Economic planning, Delta State. (2008), *Delta Seeds-Delta State Economic Empowerment and Development Strategy (2005 – 2007)*. Available from: <https://www.scribd.com/document/149566114/Delta-State-Economic-Empowerment-and-Development-Strategy>. [Last retrieved on 2016 Apr 26].
- NNPC. (2005), *Towards Rebuilding the Niger Delta 1999 – March 2004*. Nigeria National Petroleum Corporation. NNPC Corporate. Available from: <http://www.nnpcgroup.com>. [Last retrieved on 2016 Apr 26].
- Petters, S.W. (2011), Conservation and Development of the Niger Delta, (Saturday, September, 24).
- Rangarajan Committee. (2008), *Report of the Committee on Financial Inclusion Committee Report*.
- Sarma, M. (2008), *Index of Financial Inclusion*. Indian Council for Research on International Economic Relations. Working Paper No. 215.
- Sarma, M., Pais, J. (2010), Financial inclusion and development. *Journal of International Development*, 23, 613-628.
- Subbarao, D. (2009), *Financial Inclusion: Challenges and Opportunities*. Being a Paper Presented by Dr Duwuri Subbarao, Governor Reserve Bank of India, at the Bankers' Club, Kolkata. December 9; 2009. Available from: [http://www.rbi.org.in/scripts/bs\\_speeches\\_view.aspx?id=452](http://www.rbi.org.in/scripts/bs_speeches_view.aspx?id=452). [Last retrieved on 2016 May 21].