

## **Mobile technology adoption for microfinance delivery in Sub-Saharan Africa**

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### **ABSTRACT**

Low income communities in Sub-Saharan Africa (SSA) have unsatisfied demand for financial services. Despite the fact that microfinance institutions (MFIs) are emerging, these communities continue to have large unbanked populations who lack access to any form of microloan and other banking services. Ghana, Nigeria and other SSA countries have been hard hit with the problem for decades. Basu et al (2004) report that only about five or six percent of the populations in parts of Ghana and Tanzania have access to bank services including any form of credit. Despite such large percentage of unbanked population in Nigeria and other SSA communities, there are indigenous efforts to reduce the impact of the problem. This paper reports a study on how adoption and use of mobile telephony as well as informal social networks of women is helping to alleviate the credit problem. The main contribution of the paper is the report of the study that mobile telephone adoption in SSA is impacting indigenous development, the sharing of information and the support of microfinance service delivery.

Keywords: Technology adoption, mobile technology, microfinance, Base of the Pyramid Population (BOP), unbanked population, Sub-Saharan Africa, social network of women entrepreneurs, Nigeria, service delivery, ICT.

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## INTRODUCTION

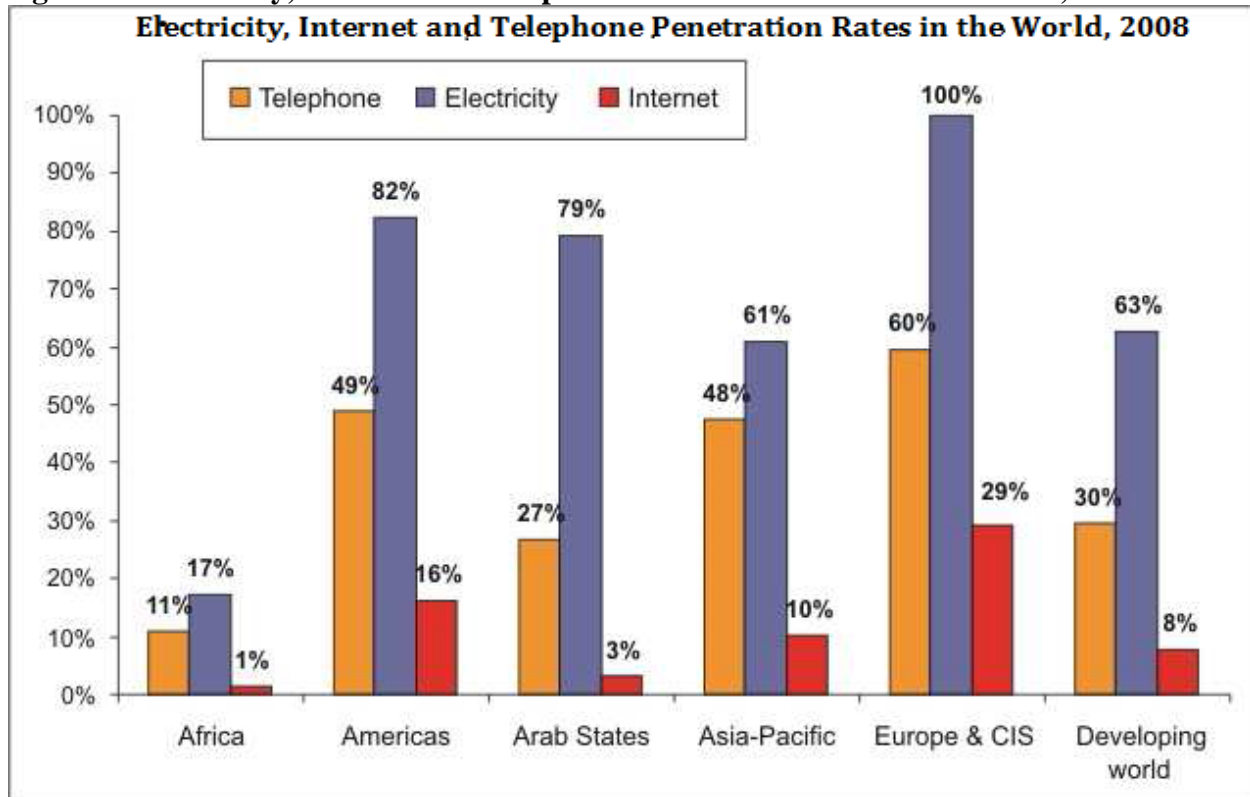
In discussing the topic of using mobile phones for microfinance delivery, it is relevant to first examine technology adoption and impact on service delivery. Two questions guide this discussion: (1) what information and communication technology (ICT) tools/services have been adopted? (2) Can mobile technologies enable the low-income persons who live on less than two U.S. dollars (\$2.00) per day to find sustainable sources of credit?

The literature overwhelmingly includes Nigeria and other SSA countries in the Bottom of the Pyramid (BOP) in all indices of development including telecommunications (Collier, 2007; Donner, 2008; Easterly, 2006; Hammond et al, 2007; Hart, 2005; Prahalad and Hart, 1999; Prahalad & Hammond, 2002; Prahalad, 2006; Sachs, 2005; U.N. Secretary-General Off the Cuff, 2008; World Bank, 2008; World Resources Institute, 2007). Although this paper is not addressing extreme economic poverty directly, it is helpful to know that income impacts adoption of technology tools and services. An average person in Nigeria and SSA BOP has very low income, less than two U.S. dollars (\$2.00) per day; has limited or no access to any form of banking services or credit and information technology (Collier, 2007; Sachs, 2005; World Bank, 2008; World Resources Institute, 2007).

Castells (1996, 1997 & 1998) posits that information technology has combined with capitalistic market structures to create an Information Society. The paradox is that the transition to the new paradigm of the Information Society has created the world of the BOP or the “Fourth World”. According to Donner (2008), the Fourth World is a world of marginalized peoples and regions that have been bypassed by information technologies. The BOP people such as those in SSA are not integrated nor are they able to participate effectively in information networks and exchanges, as well as the advanced production and consumption of the Information Age. It is therefore important to examine ICT tools and services in Nigeria and SSA, particularly when discussing the adoption of technology tools for service delivery.

## LITERATURE

A major challenge that Nigeria and the other SSA countries face is bringing all forms of ICT, including electricity to the rural areas (Conradie et al, 2003; Lagmia, 2005; and Ekanem, 2008; ITU, 2008). Many rural villages are yet to be connected to their nation’s electricity grid (Conradie et al, 2003; Ekanem, 2008; Sachs, 2005). Figure 1 is ITU (International Telecommunications Union), 2008 statistics on the world electricity, telephone and Internet penetration. As shown in the figure, Internet and telephone penetration rates for Africa, when compared to other developing world regions like Arab States and Asia-Pacific, remains the lowest.

**Figure 1: Electricity, Internet and Telephone Penetration Rates in the World, 2008**

Source: ITU Research, <http://www.itu.int/ITU-D/ict/statistics/ict/index.html>

In Nigeria for instance, a typical village is inherently poor, lack electricity, illiterate and preoccupied with the basic needs of food, healthcare and shelter. When the local government's rural electrification project has not extended the electricity grid to a rural village, people use paraffin lanterns for their household lighting (Ekanem, 2008). In an interview with Ekanem (2<sup>nd</sup> January, 2009), he explained that as a former United Nation Economic Commission for Africa (UN ECA) official, he lived in Ethiopia and traveled around Nigeria, Cameroon, Ghana, Tanzania and other regions of Africa. He had observed rural living and how people made daily trips to have their mobile phones charged at the houses of a few other co-inhabitants of the village who could afford to power their homes with generators. For the rural poor, the issue of access to an electricity grid and ICT assumes great urgency.

## **NIGERIAN ICT POLICY**

Nigeria is the largest country in Africa with a population of 133.5 million and a gross domestic product (GDP) of 188.5 billion. Nigeria crafted an ICT Policy, "USE IT" in 2001. The goal for developing "USE IT" was to have ICT policy in place to aid with national development. The sub-goals for "USE IT" were to use ICT for education, wealth creation, poverty reduction, job creation and global competitiveness (Nigerian National Policy for Information Technology, "USE IT", 2001). The ICT Policy envisioned making "Nigeria an IT capable country in Africa and a key player in the Information Society by the year 2005, using IT as an engine for sustainable development and global competitiveness" (p. 5). The Policy specified many broad objectives, including the following:

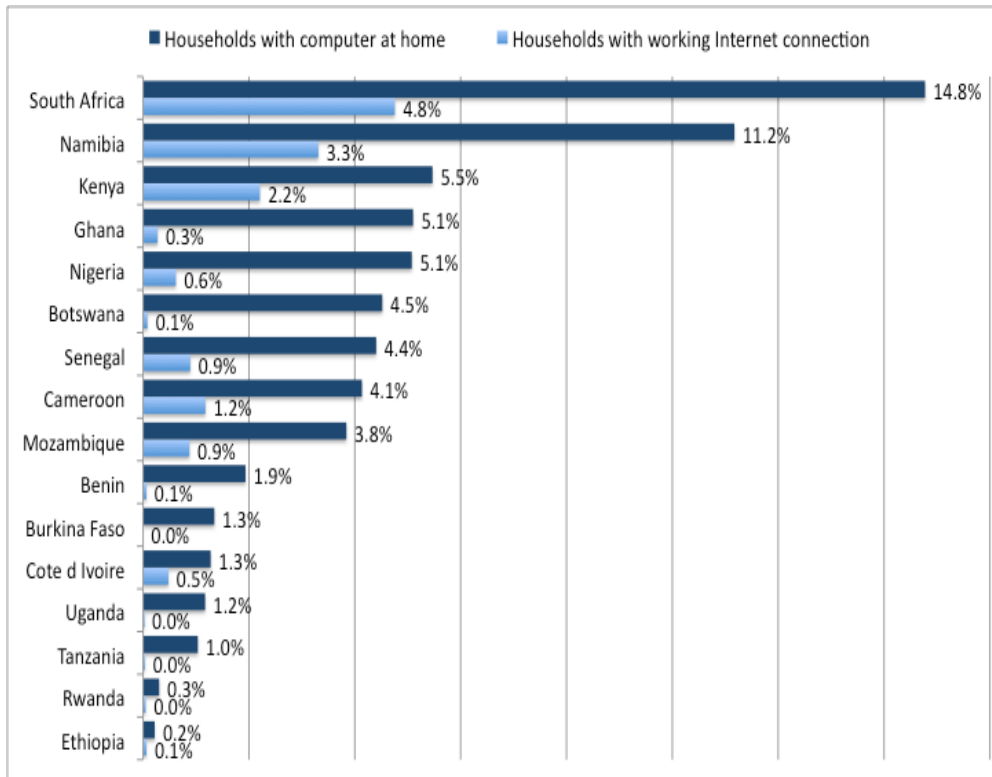
- To ensure that Information Technology resources are readily available to promote efficient national development
- To guarantee that each state benefits maximally, and contributes meaningfully by providing the global solutions to the challenges of the Information Age.
- To empower the youth with IT skills and prepare them for global competitiveness
- To integrate IT into the mainstream of education and training.

The ICT Policy had broad goals but lacked specific guidelines or strategies for supporting policy implementation in different sectors including the finance sector. The strategy for implementing the Policy in the educational sector was also lacking; in fact it was discussed under human resources development. It is therefore not surprising to see that in the 10th year after the formulation of USE IT Policy in Nigeria, universities in the country still lack computer laboratories or libraries that are equipped with media services or computers that can be used to access the Internet. According to Oyelekan (2008:8), “Perhaps, it would not be out of place to say that Nigeria has no national policy in the integration of ICT into her educational system”. Today, Nigeria is still a very late starter in terms of overall implementation of its ICT policies. There is inadequate number of computers and skilled personnel in government offices, universities, and the private sector.

In the case of telecommunication, the Center for Rural Development Cooperatives (2006) reported an opinion poll about the Nigerian NCC (National Communications Commission). The NCC is a government agency that was created by Government Decree Number 75 in 1992 to regulate the Nigerian telecommunications industry after its privatization in the same year. The 2006 Opinion Poll gathered data on the perception of stakeholders such as consumers, vendors, and service providers on NCC. The 2066 respondents were drawn from all states in the country; the polling was done to obtain data about the NCC’s effectiveness and transparency in regulating the telecommunications industry. Among the many findings, a large proportion of the participants in the survey (29.8% of individual consumers, 29.5% of corporate consumers, and 30.7% of service agents) considered NCC ineffective in performing its job. A significant number of participants (14.2% individual consumers, 9.9% of corporate consumers, and 19.8% service agents) did not indicate their opinion in the survey.

The good news is that the academic communities are embarking on evidence-based ICT research that are getting both government and private sector attention and adding to knowledge. Some African countries are involved in such studies and projects. One of such studies is edited by Gillwald (2008), and the study is: *Towards evidence-based policy in Africa: ICT access and usage across 17 countries*. The results of both demand and supply sides of ICT researches in several Africa countries can be found at [researchICTAfrica.net](http://researchICTAfrica.net). Figure 2 is adapted from Gillwald’s study; it shows ownership of computers and Internet connection in study participants’ homes in Nigeria and other 15 SSA countries.

**Figure 2: Computer Ownership and Internet Connection at Study Participants' Homes (researchictafrica study, 2008)**



Based on the statistics in Figure 2, South Africa and Namibia are the only two African countries that show above ten percent computer ownership at home with at least three percent connectivity to the Internet. Nigeria and several other countries like Cameroon, Ghana, Kenya, and Mozambique record between three and five percent computer ownership at home with only about one percent connectivity to the Internet. Etim (2009) in a related ICT study confirmed this statistics for Nigeria; the connectivity to the Internet was mostly by dial-up access at less than 100kbps. Fixed land lines have also seen stagnated growth in SSA. ITU Research (2008) records that although mobile phones have great prospect for Africa, fixed telephone lines remain the exception and penetration is at 3 per 100 inhabitants and it is, by far, the lowest in the world.

**MOBILE PHONE AND SERVICE DELIVERY**

The limited availability of computers and fixed land lines have posed significant barriers in the takeoff of fixed broadband in both Nigeria and SSA, whereas both fixed and mobile broadband have reached significant levels in Europe and the Americas (ITU Research, 2008). Despite these limitations, there is a growing need to use ICT such as mobile phones for service delivery including microfinance delivery in Nigeria and other SSA countries. Sullivan (2007), in reporting the case of microcredit and mobile telephony in Bangladesh and Grameen Bank partnership with a telecommunication business, argues that connectivity and microcredit are siblings because both could empower an individual to escape poverty. Sullivan states:

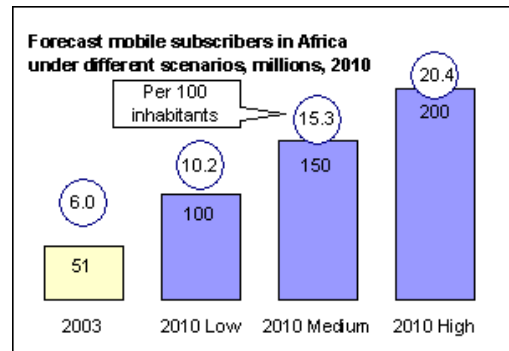
Despite obvious differences, connectivity and credit could both empower the individual and play a large role in development. Just as credit allows a woman access to a capital-based economy, connectivity could give her access to new markets in that economy, allowing a one-person business to grow and eventually provide job. Like capital where capital is scarce, connectivity produces high returns where communications are scarce. Credit and connectivity empower all people, even the poor and illiterate – a key point in a country with high rate of illiteracy (pp. 39 – 40).

Other reasons are to help eradicate extreme economic poverty, which was defined earlier as living on less than two U.S. dollars (\$2.00) per day; tackle unemployment and support sustainable development in the region. A starting point is to look at ways to use ICT that has diffused successfully in the region and mobile phones have diffused (Butler, 2005; Business Week, September 2007; cellular.co.za, 2004, Etim, 2010; ITU Research, 2008). New studies are however needed to understand the rate of diffusion in different segments of the populations and regions like the urban and rural areas.

As further research is conducted, it will be possible to better predict mobile phone innovation, particularly diffusion rate and usage impact. An attempt at earlier predictions was made by ITU Research in 2004 (see Figure 3). ITU Research predicted that there will be between 100 million to 200 million mobile subscribers in Africa by 2010. The current report for mobile technology subscribers for Nigeria and South Africa is over 80 million. Nigeria has more than 46 million cellular subscribers (Nigeria, 2007). South Africa had 42.4 million mobile subscribers in 2007 and that number is expected to grow to 48.5 million by the end of 2011 (ResearchANDMarkets, 2008).

Since many people are adopting mobile phones, it can serve as the ICT tool for service delivery. An important factor that has helped to support the recent trend of mobile phone adoption and use in Nigeria and other SSA regions has been in the formulation and implementation of ICT policy by each of the African countries. Many country-owned telecommunication services have been privatized and the leaders of most of the countries have crafted ICT policies (Poodts, 2006; Rezaian, 2007). The countries are now looking at ways to use ICT to support business & economic development, education, infrastructure, and governmental services (Negroponte, 1998; Ifinedo, 2007; NEPAD, 2007).

Relaxed regulations, favorable government policies, reduced ICT costs, and the usefulness of the technology to enhance lives are also factors that have helped the diffusion of mobile technology over the fixed (wired) lines or the personal computer (Etim, 2009; Butler, 2005; Business Week, September 2007).

**Figure 3: Mobile Technology Diffusion in Africa (ITU Predictions in 2003)**

[http://www.cellular.co.za/news\\_2004/may/0501004-itu\\_says\\_africa\\_is\\_the\\_world.htm](http://www.cellular.co.za/news_2004/may/0501004-itu_says_africa_is_the_world.htm)

In the next section, a 1988 study on bank financing of small businesses in Plateau State, Nigeria is discussed in order to provide a historical perspective in microfinance delivery. In this earlier study (1988) on bank financing of small scale industries in Nigeria, the author found that banks were not willing to lend funds to low income borrowers despite the fact that they owned and managed small scale enterprises. What has changed between 1988 and 2009 in terms of access to credit by low income persons? The 1988 study is brought in to make a point and to provide a historical review that will help the reader to understand the trend - mobile technology is facilitating connectivity and networking to access cheaper sources of capital in place of bank loans. The 2009 study and the findings in that study are discussed in the last section of the paper.

### **PAST APPROACH TO MICROFINANCE DELIVERY IN NIGERIA (1988 STUDY)**

The Nigerian economy has been agro-based before and immediately following the 1960 independence from Great Britain. However, beginning from the 1970s, the oil boom illusion diminished the progress in this sector. The State of the Nigeria economy started deteriorating in the mid 1980s. Nigerians started returning in to agrarian way of life and small scale industrialization for their survival. Very early studies like those of Akeredolu-Ale, 1975 & Orsaah, 1977 showed that small scale industries can stimulate entrepreneurship and if properly managed and funded, can grow into large business concerns.

It was in this era of the 1980s that small scale industrialization was emerging in Nigeria that the author embarked on a study (1988) to investigate bank financing of these small businesses. There were few studies that preceded mine; one of such studies was conducted by Ihyiambe (1986). He found that commercial banks regarded small scale enterprises as being high risk for their funds when compared to large enterprises. Banks imposed stringent conditions on small scale enterprises and these lending practices did not favor the people; many of them could not meet the banks' lending requirements.

Plateau State (study location) had a microloan scheme that rendered financial assistance to SSIs. The microloan scheme could be traced back to the Northern Credit Scheme that was established in 1966. The former Benue-Plateau State took over the Scheme when the Northern region was split into additional new states. The present Plateau State had its own microloan scheme in 1976 and it was renamed to Small Scale Industries Credit Scheme (SSICS) under the management of the Plateau State Ministry of Industries (Agyina, 1986).

The main objective of the microloan scheme or SSICS was the development and promotion of small scale industries (SSI) in the State through provision of lines of credit or small loans to entrepreneurs and industrialists. Other objectives of SSICS were to create employment opportunities, utilize local resources for industrial production, develop through workshops entrepreneurs who had the potential of setting up modern SSIs and encourage establishment of small enterprises in rural areas in order to reduce rural-urban migration. The funds for the loan scheme came from the State's annual budget allocation, the Federal Government allocation, returns on earlier years' investments (3 percent interest was charged at the time of the study) and the World Bank (Plateau State was one of the few states in Nigeria that benefited by the World Bank pilot financing of SSIs in Nigeria in the 1980s). As at the time of the study, SSICS had a capitalization value of N3,588,131.37 (naira) and had disbursed a total of 191 microloans to SSIs in the State (Lektu, 1987). Table 1 shows a sample of the projects and the loan amounts that were disbursed by SSICS.

**Table 1: Projects and Microloans Disbursed under SSICS, 1985**

Name of Project	Number of Projects	Amount (Naira)
Corn mill	36	194,800.00
Cement block	20	521,889.00
Bakery	16	276,256.00
Mechanic workshop	12	77,203.00
Rice Mill	10	183,225.00
Garri processing	10	233,000.00
Poultry farm	8	36,120.00
Minning	6	60,000.00
Printing press	6	278,000.00
Saw mill and timber	5	222,770.00
Black smith	4	41,092.00
Livestock feeds	4	260,000.00
Stone crushing	3	138,950.00
Bus services	1	315,945.20

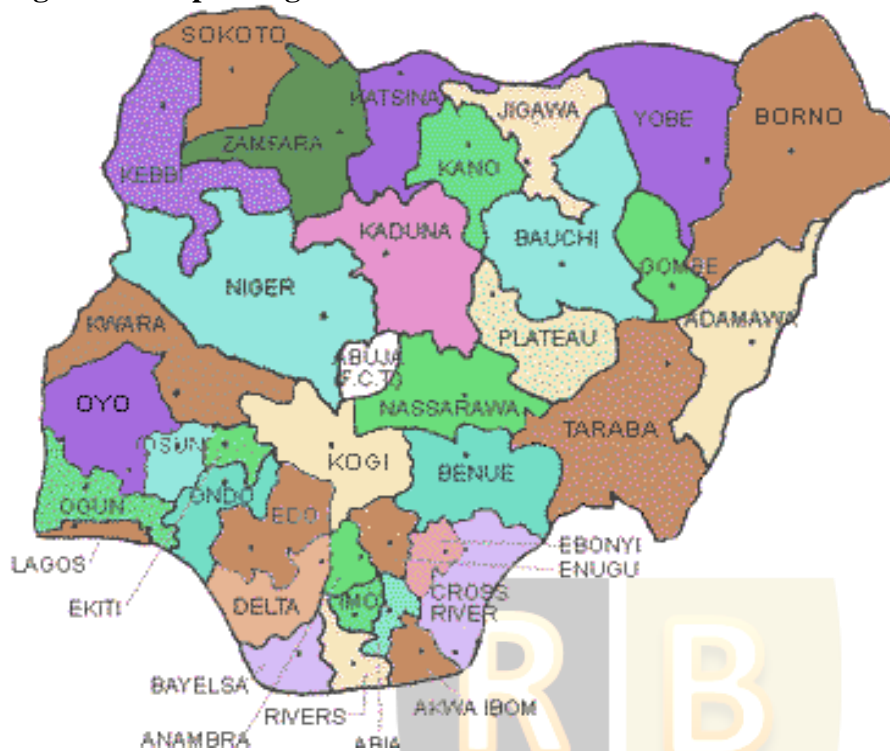
Source: Lektu, J. D. (1987). The role of small scale industries in transforming Plateau State (1976 – 1985), *Unpublished thesis*, University of Jos, Nigeria, 43 – 45.

Motivated by the findings in the studies reviewed and the fact that there was no study that clearly outlined the impact of bank policies on financing of SSIs, the researcher set out to answer the following questions in that earlier study:

- a) Are the lending policies of banks inhibitor to small scale industrialists' interest in seeking bank loans?
- b) For those small scale industrialists that have availed themselves of bank funds, are their borrowing capacities limited by these lending policies?

The study was conducted in Plateau State (<http://www.plateaustate.gov.org/>). Figure 4 shows the map of Nigeria and the location of Plateau State (or State for short).



**Figure 4: Map of Nigeria and the location of Plateau State**

Source: [http://www.waado.org/nigerdelta/Maps/Nigeria\\_States.html](http://www.waado.org/nigerdelta/Maps/Nigeria_States.html)

## METHODOLOGY

The questionnaire technique was used for the study. The questionnaire contained 24 items and was administered to small scale industrialists in the State. The questionnaire sought information from the respondents in five categories: owner/partner profile including managerial training, respondents' perception of commercial bank lending policies, their success or failure in getting bank loans, their opinion on the interest charged for bank loans and study participants' opinion about the general effect of the loan (if loan was received) on their business. An Area Sampling technique was used. Small scale industrialists that visited First Bank of Nigeria branches in Jos (State capital) and the surrounding communities like Bukuru were requested to complete the questionnaires. With First Bank's permission, respondents were given time to complete the questionnaires during their bank visits except for cases where they preferred to complete and return later. However, it was difficult to get back those questionnaires that were not completed during the bank visits. In the rural areas, about 95 percent of the SSI lacked the ability to read and write English language. The researcher lacked skill in the local dialects or Hausa language and resorted to using an interpreter wherever possible. Out of the 250 copies of the questionnaire that were distributed, 80 usable copies (32 percent) were returned. This was considered sufficient for the purpose of the research because respondents represented the various units of the population in the study.

**IMPORTANT FINDINGS**

Finding #1: Although SSIs that participated in the study had great interest in First Bank loan programs (82%); they were not able to borrow funds from the Bank because of stringent lending policies. More than seventy six (76) percent of respondents indicated that First Bank lending policies were either difficult or very difficult to meet. These SSIs lacked the collateral that First Bank needed them to provide as guarantee for the loan and as such, they were considered to be high risk loan applicants. Table 2 shows a cross-tabulation of lending policies and participants’ interest in bank loans. From Table 2, sixty one percent (61%) of the respondents who had very high or high interest in bank funds responded that bank policies were either very difficult or difficult to meet. Further analysis was done via hypothesis testing with a null hypothesis (Ho) that stated that bank policies were not inhibitors to SSIs borrowing from First Bank of Nigeria. A Chi-Square ( $X^2$ ) Statistical analysis led to the rejection of Ho at .05 confidence level ( $p = .05$ ); leading to a conclusion that the lending policies of First bank were inhibitors to SSIs borrowing from the bank.

**Table 2: Cross-tabulation of Perception about Bank Lending Policies and Interest in Seeking Bank Loan**

<b>Interest in Bank Loans</b>	<b>Very High Interest</b>	<b>High Interest</b>	<b>No Interest</b>	
<b>Lending Policies</b>				<b>Total</b>
<b>Very difficult to meet</b>	8	7	9	24
<b>Difficult to meet</b>	12	22	3	37
<b>Not difficult to meet</b>	12	5	2	19
<b>Total</b>	32	34	14	80

Finding #2: The small scale industrialists that succeeded in borrowing from First Bank had their borrowing capacities significantly reduced because of the bank lending policies. Respondents were asked if their initial loan amount request was reduced by a very small amount, half or significantly larger amount (includes those who were not given loans). More than 71% of the study participants indicated that the initial loan amount they requested from First Bank was reduced by half or more than half that amount. The reasons for this action by First Bank as provided by the respondents are shown in Table 3 and more than 50 percent of the respondents indicated that inadequate collateral or combination of it with another factor such as unsatisfactory accounting records caused the loan reduction or disqualification.

**Table 3: Reasons for Loan Reduction**

<b>Lending Policies Not Met by Borrower</b>	<b>Number of Responses</b>	<b>Percentage (%)</b>
<b>Collateral requirement not adequate (A)</b>	20	28.57*
<b>Accounting records of business not satisfactory (B)</b>	10	14.29
<b>Poor business proposal (C)</b>	6	8.60
<b>A + B</b>	18	25.70
<b>A + C</b>	12	17.14
<b>B + C</b>	4	5.70
<b>Total</b>	70	100

Further statistical analysis using One-Way ANOVA led to the rejection of the null hypothesis - First Bank lending policies had no significant effect on the borrowing capacity of small scale industrialists,  $p=.05$ . A conclusion was made that First Bank lending policies significantly impacted the borrowing capacities of SSIs.

The 1988 study is reviewed primarily to highlight a significant historical flaw on bank financing of SSIs in Nigeria. The Federal Government of Nigeria had at the time instituted penalties against banks who were not lending to SSIs, however many of the banks preferred paying the penalties rather than offer microloan to SSIs. The current events in microfinance delivery have been made possible because of the failure of banks to serve SSI. In the next and final section of this paper, a case study of contemporary microfinance delivery in Nigeria that is being enabled by mobile technologies is discussed.

### **CONTEMPORARY MICROFINANCE DELIVERY – A CASE STUDY**

Although this study reports the case in Nigeria, other related cases have been reported in other SSA countries. The New Partnership for African Development (NEPAD, 2002) argues that there are many related characteristics among nations in SSA. This case study is likely a common story in the different countries in SSA and there is a great need to document the progress in microfinance delivery using these different approaches. This study reports one of the women organizations in Akwa Ibom State of Nigeria (refer to Figure 4 for the location of Akwa Ibom State in the map of Nigeria), “Nka Iban”, meaning *Women Society*. The organization can also be called Akwa Ibom Women Cooperative Society (or Cooperative Society for short). It is important to note that this form of cooperative society is identified by such generic names as “Esusu” in Nigeria or “Osusu” in Ghana. The researcher was introduced to this particular Cooperative Society by one of the members during an ICT study in Nigeria in 2009 when she was investigating mobile technology adoption/diffusion among students in the country. As at 2009, the Cooperative Society that was founded in 2007 by less than ten women who were in need of funds for business ventures had grown to 180 women members.

Although the members had different profiles, they all had a common need, a sustainable method of financing their small scale businesses. Significantly, it was their level of connectivity and networking that was enabled by mobile phones that led to their popularity. The women were from different villages that surround Uyo, the capital city of Akwa Ibom State. Some of them had grade school and college education while some did not know how to read or write the

English language. They were a mixed group with diverse skills/occupation - crafts, sewing, sculpting, petty trading, children day care, fashion designers, hair dressers, funeral/wedding planners and small scale farmers. Some of the women ventured out on a part time basis in order to supplement the income from another job like teaching. Five women in the Cooperative Society were interviewed.

## **METHOD OF INVESTIGATION**

Informal interviews were conducted and each lasted for about 30 minutes. The women interviewed were teacher/part-time trader, hair dresser, seamstress, mobile telephone shop operator or “hand-set lady” and a small scale farmer. Except for the farmer that was interviewed during her delivery of vegetables to a client, each interview was conducted informally at the interviewee’s business location. The following five open-ended questions were asked to each person in effort to gather information about sources of financing and uses of mobile phones to enable sustainable access to financing and effective business operations.

### **Interview Questions**

1. What type of small business are you in?
2. What circumstances or needs led to the start of your small business?
3. How did you get initial startup money and subsequent funds to operate your business? Did you borrow from the bank?
4. Has your mobile phone enabled you to get access to short or long-term loans and to carryout everyday business operations?
5. What social networks are you affiliated with that have helped you to find funds or build clientele for your business?

I discuss the key information gathered particularly with reference to the first woman (teacher/trader). The first person interviewed, an elementary school teacher, had introduced the researcher to the other four women that were also interviewed. They were all members in the Cooperative Society. The teacher, at the time of meeting in 2009 had taught at the same school for about 15 years. As a teacher with many years of experience, she had networked well with other teachers in her school district and found that some of the other teachers would prefer to buy and share full bags of stockfish (smoked Norwegian fish that is one of Nigerian imported delicacies for different kinds of soups), locally caught and smoked fish and Cray fish (shrimp) among themselves because these items were very expensive in the local open market (there are many middle men between the main distributors and the final buyers). She participated and later became the lead person or the “contractor” to supply the other teachers with the goods. This business opportunity was what she had hoped for since the economy went downhill in the late 1990s. She narrated how salaries were paid two to three months late, her family’s lack of basic necessities of food and how she resorted to borrowing from friends/family members until her salary was paid. This business venture therefore helped immensely to supplement the income from her teaching job.

Becoming a contractor that others depended on required that she had to come up with enough money to buy five to eight bags of stock fish and other goods every two weeks when she traveled by public bus transport to *Ibeno* or *Oron* (trading towns at the gulf of Atlantic Ocean in

Akwa Ibom State). She joined the Cooperative Society to get funding from a pool of funds that she and the other members of the Cooperative Society contribute to and held in a bank. The funds support the Cooperative Society's microloan scheme and the bank manages the funds based on a fee. The Cooperative Society was also an entity that the bank can advance loans to periodically when the members need such funds.

Information and communication technologies and in this case, mobile phones enabled the people. The teacher/trader that can rightfully be called a business entrepreneur and the other four women that were interviewed had basic mobile phones and they used them effectively. The women did not have land lines or computers. The mobile phones that they could afford to buy were Nokia basic phones for voice communication and SMS (short message service or texting). None of the women that were interviewed used SMS with their phones; it was voice contact or face-to-face interactions. These basic mobile phones lacked advanced feature support as well as the smartness capability for accessing data, including Internet data. The women had heard about the Internet but had no knowledge of how it could relate to them or how they could use it. With their phones, the women were able to make voice calls and coordinate their Cooperative Society activities including meetings and fund distributions. Calls made included scheduling of their Cooperative Society meeting, business appointments with clients, talking with the dealers ahead of time to order/negotiate price before their trips, and in fact, the teacher/trader reported that she would call to check the weather conditions, particularly during rainy seasons before her trip to *Oron* or *Ibeno* to purchase goods.

Another empowerment to the women that was uncovered in the case study was that unlike the entrepreneurs or SSIs in the 1988 study, these contemporary entrepreneurs are using the banking system to their advantage. None of the women individually had a bank loan; however, the bank was willing to lend to their entity, the Cooperative Society. As members in the Cooperative Society, they individually had no access to bank funds but with the trust among them, their contributions were held in a bank account and the bank saw the pool of money as guarantee for loans that could be taken out in the Cooperative Society's name.

## CONCLUSION

In this 21<sup>st</sup> Century, people, particularly entrepreneurs, enterprising college graduates, SSIs and women should no longer be concerned with how to get money to fund a business idea or a small enterprise because they should be able to access microloans from banks or MFIs. The focus should be how to empower the people through innovations and cooperative societies or social networks for effective business operations and service delivery.

If ICT is to play a significant role in the next five to ten years in Nigeria and other SSA countries for development and nation building, African leaders will need to learn from the examples in several Asian countries like Bangladesh, China, India, Malaysia and Singapore on the use of ICT tools like mobile phones for service delivery (Sullivan, 2007). Taking the case of Yunus (1999), Grameen Bank has provided microloans to women, including the "phone ladies" in Bangladesh for a total amount of about six billion dollars. More than five million families live in rural Bangladesh and engage in effective non-internet social networks and cooperative societies. Mobile phones will have to be used as tools for effective microfinance and service delivery for the people of SSA.

In conclusion, a cooperative society like *Nka Iban* of Akwa Ibom State of Nigeria that was discussed in this paper is a social network. These women entrepreneurs no longer have to

feel powerless when it comes to requesting for bank loans or other attractive bank products to support their business ventures. The women in *Nka Iban* were able to network and team effectively through an organized cooperative society. There is the trust element and mobile technology use that helped to strengthen this social network. The cooperative society became an entity that could borrow from the bank without the stringent lending policies and the bank could deliver funds to the women as the business needs arose.

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## **ABOUT THE AUTHOR**

Dr. Alice S. Etim research focus is information and communication technology (ICT) use to support organizational systems and project management. She also researches ICT acceptance/adoption in extremely poor world regions or the Bottom of the Pyramid (BOP) populations and ways to use ICT tools and services to enable the populations. Alice has a PhD in Information and Library Science from the University of North Carolina at Chapel Hill, MSBA in Business Information Systems from Mississippi State University and MBA from Delta State University. She is a faculty member in the School of Business and Economics, at Winston Salem State University (WSSU) and a research collaborator on the Provider Patient-centeredness and Disparities Outcome Measurement Initiative in North Carolina. Prior to joining the School of Business and Economics (SBE) in August, 2010, Alice worked for IBM Software Group for twelve years and left in 2009 at the position of a Staff Software Engineer with IBM Software Group. Alice is a certified project management professional (PMP), and has managed medium to large scale as well as international projects. Alice's research interests also include the application of ICT in overcoming health disparities, mobile technologies, cloud computing impact on business and microfinance delivery.