

# **GEOGRAPHIC FACTORS INHIBITING E-BANKING IN NIGERIA: A CASE STUDY OF AKWA IBOM AND CROSS RIVER STATES**

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## **ABSTRACT**

*The aim of this study was to examine geographic factors inhibiting e-Banking in Akwa Ibom and Cross River States of Nigeria. The study adopted a cross sectional survey design using questionnaire to elicit data from the respondents and Friedman Fr test to test hypotheses. However, the study's results also shows among others, that inadequate securities of transactions through e-banking and lack of the peoples' knowledge about its usage were some of the geographic factors that hindered the usage of E-banking. It was therefore, recommended among others, that financial institutions should devise alternative but cheaper power supply outlet such as solar energy, issue to their customers ATM cards with the account holder's photo and government policies should focus on enhancing the people economically and the provision of basic infrastructures, such as: electricity, communication, transportation.*

**Keywords:** *Electronic banking, driving factors, inhibiting factors, innovation, infrastructures, geographic specific factors.*

## INTRODUCTION

In the new global economy, information and communication technology (IT) is the major driver, not just of improved quality of life, but also of economic growth. Moreover, there are strong indications that IT has the potential to continue driving growth for the foreseeable future (Atkinson and McKay, 2007). Electronic banking is an offshoot of IT and it provides the classic and current means of banking. E-Banking has brought changes into the banking industry, and is having major effects on banking relationships. Its provision is increasingly becoming 'a need to have' than 'a nice to have' service.

Anwana (2008) shows that all the 25 banks in Nigeria adopt electronic banking in one form or another although the adoption level is mostly at the low and basic interactivity and functionality level. The banking consolidation of 2005 and customers' insatiable appetite for efficient services has added to compel banks to adopt e-banking at a much faster rate. At the current low rate of e-banking adoption, it is doubtful if Nigeria shall meet its set target of becoming a key player in ICT and e-banking by the year 2020. There are, however, factors that enhance or inhibit adoption of the new innovation, e-banking. These are the driving or the inhibiting factors. The driving factors are the inherent derivable beneficial identities to be enjoyed, in using an innovation. They promote the utilization of e-banking products and services by bank customers. The inhibiting factors are the inherent dispelling characters, which tend to dissuade the use of an innovation. They constrain utilization of e-banking products and services.

So far, studies on e-banking in Nigeria have focused on the entire country. Little effort is spared to disaggregate performance across the different states or geopolitical zones to determine if there are location-specific differences or regional factors that could affect e-banking adoption. This explains why the present study concerns itself with identifying the key factors that drive and the factors that inhibit adoption of e-banking products and services in the South-South geopolitical zone of Nigeria. For Chiemeké, Ewwiekpaefe and Chete, (2006), the drivers of e-banking products and services among customers are; access to the services, low cost, and privacy.

Customers would tend to adopt the e-banking services that are accessible to them. Dauda, Santhapparaj and Asirvatham (2007), in their study of factors influencing adoption of e-commerce in Malaysia and Singapore observe that incentives to adopt e-banking is determined by relative advantage, Internet experience, banking need, triability, subjective norm, self efficacy, facilitating condition, and government support.

Relative Advantage is defined as the extent to which a person views an innovation as offering an advantage over previous ways of performing the same task (Rogers, 1983; Agrawal and Prasad, 1997). Internet Experience and Banking Need is defined as the degree to which an innovation is viewed as being consistent with the existing values, needs and experience of users (Rogers, 1983; Taylor and Todd, 1995). Triability is the extent to which users would like an opportunity to experiment with an innovation prior to committing to its usage (Rogers, 1983; Agrawal and Prasad 1997).

Subjective Norm refers to a person's perception that certain actions are more valuable than another, which determines what the person decides to do ultimately (Fishbein and Ajzen, 1975; Tan and Theo, 2000). Self-Efficacy is defined as an individual's self confidence in his or her ability to perform a task (Bandura, 1983; Taylor and Todd, 1995); while Facilitating Condition refers to the easy access to technological resources and infrastructure. Government Support is consistent with the national systems of innovation theory that posits that government policies may encourage or mandate technology development and adoption (King, Gufbaxani, Kraemar, McFarlane, Raman, and Yap, 1994; Wokkott, McHenry, Goodman, and Foster, 2001).

Rao, Singh, and Maheshwari (2002) identify value, customer relationship and value configuration as factors that can encourage usage of e-banking. Value is what an investor gets and what gets created when organizations set out to pursue their missions. It consists of economic, social and environmental value components and takes into consideration factors like services provided, product innovation, and schemes and benefits, Customers relationship consists of the beneficiary of the value offered. It also includes the tools, customer management, created trust, loyalty and branding and communication tools used to get in touch with the customer.

Value configuration includes the capability and resources that are required for successful e-banking operation. It includes Internet servers, software, automated teller machine (ATM) and call centres. Other factors to be taken into consideration are strategy, Information Technology infrastructure, technologies used and capabilities.

Awamleh and Fernandes (2005) while investigating the extent of adoption of e-banking and determinants of customers satisfaction in the United Arab Emirate identified three factors; namely, Independence, Convenience, and Security. The Independence dimension captures the concept of customers' interaction with their banks using the Internet without the need to directly interface with bank employees. Convenience depicts the ease and practicability of the channel, which includes the ability to access banking services, around the clock, from anywhere. Security dimension measures customers' perceptions of channel reliability and safety and also the speed by which transactions are completed.

Lee K., Lee H. and Kim (2007) while studying factors influencing the adoption behaviour of mobile banking in South Korea opines that trust had a stronger influence on the adoption behaviour of customers. That is, the consumers' trust of the bank, telecom provider, and wireless Internet.

Agboola (2006), notes that low rate of adoption of the technology might be due to its perceived cost, fear of fraudulent practices, and inadequate e-banking facilities, inability of many households to afford terminals and all accessories required for effective connection, high capital investment required for its operations in banks, low level of economic development, ineffectiveness of telecommunication service providers, and epileptic supply of electricity. A study by Al-Sabbagh and Molla (2004), of e-banking in Oman reveals that perceived security and trust are the top issues inhibiting e-banking adoption. Preference for face-to-face personal banking was found to be one of the outcomes of perceived insecurity and distrust.

Weak regulatory framework for ICT generally and e-banking in particular can be a major inhibiting factor. Onwudinjo (2002) report shows that the absence of a comprehensive regulatory framework has been identified as a major barrier to customer's acceptance of the e-banking services. Data

protection provisions and other legal infrastructures are required to ensure that operators play within the rules, and privacy of the customers are maintained. Closely related to inadequate regulation are, dearth of skilled manpower to harness the IT bits, and lack of government commitment to making the key investment decisions.

Ayo, Ekong, Tolulope, and Adebisi (2007) indicate that the major threat to e-banking includes security of transactions and unavailability of basic infrastructures, complication of services and cost of services being other factors. For Ezeoha (2005), the inhibitors of e-banking include lack of adequate operational infrastructure like proper telecommunication and power, and cyber criminal activities. Chung and Paynter (2002) revealed that in New Zealand, the major inhibiting factors are security, complication of Internet banking and limited publicity given to these services by banks.

Five important characteristics of an innovation that influences its adoption have been identified by Rogers (1983) as relative advantage, compatibility, complexity, observability and triability. The list was subsequently expanded to fifteen (15) to include perceived risk, trust, security and privacy, concern and cost of e-banking (Al-Sabbagh and Molla, 2004; Tan and Teo, 2000; Polatoglu and Ekin, 2001, Mattila, 2003). Taylor and Todd (1995) developed the Decomposed Theory of Planned Behaviour (DTPB) and posit that an intention to adopt and use technology is affected by attitude, subjective norms, relative advantage, compatibility and perceived behavioral control, by decomposing them into more specific dimensions. In a related study, Davis (1989) used the Theory of Reasoned Action (TRA) and developed the Technology Acceptance Model (TAM) to look into the drivers and inhibitors of consumers' e-banking adoption and usage.

TRA and TAM based study uses Perceived Ease of Use (PEOU) and perceived Usefulness to determine individuals' acceptance of technology. PEOU has to do with level of believe that a particular system will relieve physical stress and mental efforts and PU has to do with the level of perceived benefits of using a system. The models above informed most of the studies on the Drivers and inhibitors of e-banking and usage. This study shall therefore use the research findings and instruments from previous studies as the basis of conducting this research. Two hypotheses were formulated in null form for this study:

- Ho<sub>1</sub> Ease of use, privacy, accessibility, cost of e-banking products and services, confidence, government policy, trust and social influence are not the major geographic factors that drive e-banking adoption in the South-south geopolitical zone of Nigeria.
- Ho<sub>2</sub> Inadequate security, lack of knowledge of use, inadequate telecommunication facilities and infrastructure, inadequate public power supply, lack of trust, poor economic condition and lack of confidence are not the major geographic specific factors that inhibit e-banking adoption in the South-south geopolitical zone of Nigeria.

## **RESEARCH METHODOLOGY**

This study was conducted between October 2008 and January 2009. It adopted a cross sectional survey design. The population comprises all the beneficiaries of E-banking services and products in Akwa Ibom and Cross River States. A sample of 60 and 40 respondents were randomly selected from Akwa Ibom and Cross River States respectively, this adds up to a total of 100 respondents. Out of a total of 25 commercial banks existing in both States, 14 or 56 percent of the banks showing strong presence in both states constituted the banks from whose customers and staff were studied. The questionnaire code named E-Bangs (electronic banking adoption and usage questionnaire) was the major instrument used for data collection. This questionnaire was administered on the respondents at the banking halls of the selected banks. The selected banks were: First Bank of Nigeria Plc; United Bank for Africa Plc; Union Bank of Nigeria Plc; Zenith International Bank Plc; Diamond Bank Plc; Guaranty Trust Bank Plc; Oceanic Bank International (Nigeria) Plc; Ecobank Nigeria Plc; Skye Bank Plc.; Access Bank Plc.; Bank PHB Plc.; Fidelity Bank Plc.; Equitorial Trust Bank Plc; and Intercontinental Bank Plc.

The Friedman Fr Test was used to compare the distributions of measurements for Five (5) treatments on the response elements of the driving and inhibiting factors of e-banking laid out in 8 and 7 blocks respectively, using randomized block design. These factors were derivable from a five-point, 26 and 19 items Likert type Scale questionnaire which showed the respondents' expression of disagreement or agreement to the driving and inhibiting factors of e-banking.

## RESULTS AND DISCUSSION

**Table 1a:** Driving factors of E-banking in Akwa Ibom and Cross River States

| Variables         | Responses         |                   |                   |                     |                     |
|-------------------|-------------------|-------------------|-------------------|---------------------|---------------------|
|                   | A                 | B                 | C                 | D                   | E                   |
| Ease of Use       | 102(4)            | 113(5)            | 31(2)             | 36(3)               | 17(1)               |
| Privacy in Use    | 77(4)             | 130(5)            | 39(3)             | 37(2)               | 17(1)               |
| Accessibility     | 89(4)             | 155(5)            | 49(2)             | 65(3)               | 31(1)               |
| Cost              | 78(4)             | 143(5)            | 68(2)             | 71(3)               | 40(1)               |
| Government Policy | 59(4)             | 130(5)            | 24(1)             | 52(3)               | 35(2)               |
| Confidence        | 59(4)             | 60(5)             | 57(3)             | 62(1.5)             | 62(1.5)             |
| Trust             | 51(3)             | 81(4)             | 40(1)             | 82(5)               | 46(2)               |
| Social Influence  | 73(4)             | 81(5)             | 24(1)             | 66(3)               | 56(2)               |
|                   | T <sub>A</sub> 31 | T <sub>B</sub> 39 | T <sub>C</sub> 15 | T <sub>D</sub> 23.5 | T <sub>E</sub> 11.5 |

Key: A = Strongly Agreed; B = Agreed; C = Neutral; D = Disagreed;  
 E = Strongly Disagreed; T<sub>i</sub> = Rank sums for the treatments; Values in parenthesis = the ranks

Computation of the Fr test

$$Fr = \frac{12}{bk(k+1)} \sum_{i=1}^N T_i^2 - 3b(k+1)$$

Where:

b = blocks (number of Factors);

k = treatments (response elements)

$$Fr = \frac{12}{8 \times 5(5+1)} (961 + 1521 + 225 + 552.25 + 132.25) - 144$$

$$= 12/240 (961 + 1521 + 225 + 552.25 + 132.25) - 144$$

$$= 0.05 \times 3391.5 - 144 = 25.575$$

Fr test recommends that where the treatments or blocks are larger than 5, the sampling distribution of Fr be approximated by a Chi-Square distribution with (R - 1)(C - 1) degrees of freedom, where R = Row and C = column of the response elements, in this case, the blocks are larger than 5 as they are 8 and so we can approximate the Fr test as recommended. R = 5 and C = 8, so, (R - 1)(C - 1) = (5 - 1)(8 - 1) = 28. The decision is that reject Ho where Fr is greater than chi-square critical value. From the computations above, Fr is 25.575 and the Chi-square table value at 0.05 degree of freedom is 16.93. Since Fr is greater than chi-square value, we reject the null hypothesis that

ease of use, privacy, accessibility, cost of e-banking products and services, confidence, government policy, trust and social influence are not the major geographic factors that drive e-banking adoption in the South-south geopolitical zone of Nigeria.

**Table 1b:** Inhibiting Factors of E-banking in Akwa Ibom and Cross River States

| Variables                             | Responses         |                   |                  |                   |                   |
|---------------------------------------|-------------------|-------------------|------------------|-------------------|-------------------|
|                                       | A                 | B                 | C                | D                 | E                 |
| Inadequate Security                   | 44(3)             | 48(4)             | 14(1)            | 58(5)             | 36(2)             |
| Lack of knowledge of use              | 84(3)             | 114(4)            | 36(1)            | 122(5)            | 44(2)             |
| Inadequate telecommunication          | 40(3)             | 66(5)             | 18(1)            | 53(4)             | 23(2)             |
| <b>Facilities and Infrastructure:</b> |                   |                   |                  |                   |                   |
| Inadequate public power supply        | 52(4)             | 67(5)             | 20(2)            | 43(3)             | 18(1)             |
| Lack of trust                         | 77(4)             | 80(5)             | 24(1)            | 68(3)             | 50(2)             |
| Economic condition                    | 75(4)             | 80(5)             | 29(1)            | 68(3)             | 48(2)             |
| Lack of confidence                    | 62(4)             | 94(5)             | 43(2)            | 57(3)             | 42(2)             |
|                                       | T <sub>A</sub> 25 | T <sub>B</sub> 33 | T <sub>C</sub> 9 | T <sub>D</sub> 26 | T <sub>E</sub> 13 |

Key: A = Strongly Agreed; B = Agreed; C = Neutral; D = Disagreed;

E = Strongly Disagreed; T<sub>i</sub> = Rank sums for the treatments; Values in parenthesis = the ranks.

Computation of the Fr test

$$Fr = \frac{12}{bk(k+1)} \sum_{i=1}^N T_i^2 - 3b(k+1)$$

$$= 12/210 (625 + 1089 + 81 + 676 + 169) - 126$$

$$= 0.05714 \times 2640 - 126 = 24.85$$

The blocks are larger than 5 (they are 7 here), so, the sampling distribution of Fr is approximated by a Chi-Square distribution with (R - 1)(C - 1) degrees of freedom, R = 5 and C = 7, = (5 - 1)(7 - 1) = 24. The decision is that reject H<sub>0</sub> where Fr is greater than chi-square critical value. From the computations above, Fr is 24.85 and the Chi-square table value at 0.05 degree of freedom is 13.85. Since Fr is greater than chi-square value, we reject the null hypothesis that inadequate security, lack of knowledge of use, inadequate telecommunication facilities and infrastructure, inadequate public power supply, lack of trust, poor economic condition and lack of confidence are



not the major geographic specific factors that inhibit e-banking adoption in the South-south geopolitical zone of Nigeria.

### **The driving factors of e-banking**

Based on the results of the analysis on table 1a, , it was revealed that the major geographic factors driving e-banking in Akwa Ibom and Cross River States of the South-South geopolitical zone of Nigeria are: ease of use of e-banking by customers; privacy enjoyed by the customers while using the technology; the accessibility at any time to it by users; lower cost of transaction associated with it; government policies promoting its adoption; and social influence. It is also pertinent to note, from the respondents responses to the questionnaire questions, that confidence and trust on e-banking do not drive its adoption by users.

The important factors adduced by the people of Akwa Ibom and Cross River States of the South-South geopolitical zone of Nigeria as motivating their adoption of e-banking are that e-banking is easy to use compared to the traditional banking. This therefore helps to satisfy customers' banking needs. It makes conducting banking transactions easier, convenient and quick. Privacy is maintained with e-banking. It is compatible to the life style of the people, their business needs and is free of interferences by others. e-Banking services can be accessed from anywhere and at anytime, and provides instant feedback on transactions, customers can asses their accounts/transact financial undertakings any time because it is easily accessible. Transactions have low or no cost with e-banking, it provides a cheaper way to conduct banking, and helps to reduce customers' movement cost to banks. Clear government support and policies, enactments, regulations and protective laws motivate the use of e-banking. Friends/colleagues/family members, boss/parents/employer are other factors that socially influence the adoption of e-banking.

On the other hand, the people do not have confidence on e-banking because they do not feel secured from intruders while using it and it is prone to fraudulent practices and at the mercy of fraudsters. Also, they do not trust e-banking because of some infrastructure failures such as power supply and telecommunication network greatly experienced in the area.

## **The inhibiting factors of e-banking**

From the analysis on 1b, it was observed that the major inhibiting factors of e-banking in Akwa Ibom and Cross River States of the South-South geopolitical zone of Nigeria are inadequate security, lack of knowledge of use of the technology, inadequate and moribund telecommunication facilities and infrastructure, inadequate public power supply, lack of trust, poor economic condition of the people, and lack of confidence on the technology by the people.

The people claimed that the major factors that inhibits or discouraged their adoption of e-banking are that its services and products are not reliable and secured, and so, are not trusted. They do not know how to use some of the e-banking products/services, their banks do not offer training or education on its usage and so, they prefer face-to-face banking to e-banking, because, they think it is complex. There are no adequate telecommunication facilities, infrastructure and network in the area to encourage their adoption of e-banking. The area is infested with frequent interruption of power supply, and incessant power outage discourages usage of e-banking products. E-banking customers are not legally protected in the area, so, people do not lay much trust on it as they are not protected by law against defaulting banks or even fraudsters. There is high incidence of poverty in the area causing many not to have knowledge of and access to e-banking products/services. Also, their income levels are too low to start savings and therefore adopt e-banking. There is high incidence of unemployment in the area leaving the people with no source of income to operate e-banking

## **CONCLUSION AND RECOMMENDATIONS**

The south-south geopolitical zone of Nigeria is the area from which the majority of the wealth of Nigeria comes, through crude petroleum products dug/extracted from the area. The people of the zone appreciate the usefulness of the provision of banking products and services through the new innovation of electronic banking. Moreover, factors exist which motivates their adoption of the innovation. E-banking requires threshold level of basic infrastructures. The level of basic infrastructures required for e-banking simply is not present in all areas, especially the south-south region.

This is an impediment to delivering e-banking to the people. The basic infrastructures (electricity, telecommunication, transportation, etc), in a country needs to be at a minimum level for any E-banking solution to succeed. That, in turn, depends on the level of development and economic conditions of the people within the country. In the south-south region of Nigeria, even today, the basic infrastructures of electricity, telecommunication, and transportation is very poor. This coupled with the high prevalent poverty level and lack of trust and waning confidence on the innovation due to activities of fraudsters does not provide enough motivation for e-banking adoption. Here, the possibility of e banking solutions succeeding is rather low, though they are ironically needed the most here. Policy makers should devote higher level of attention to Information Technology and e-banking policies and implementation.

To avert the epileptic power supply and other problems, financial institutions should set up solar powered computer peripheral as an option. Though the initial capital cost may be higher, the institutions will stand to gain at the long run. To ensure security, the banks should issue to their customers cards and other e-banking transactional documents with the account holder's photo, including other security engravings.

There is a need for financial education that will enable the customers to make effective use of e-banking. It is important for financial institutions to try to educate customers that with e banking their money is safe and can be accessed at anytime. Trust plays a very crucial role. Customers' lack of understanding also affects their level of trust. Therefore, to ensure customers confidence, the banks should help them to understand basic bank services, the costs and benefits, the use of ATM cards and other e-banking peripherals/instruments or products, and trust in e-banking products/services. Understanding e-banking products and services will help them with financial management, arrest the threat of theft/fraud and other dangers associated with using e-banking. All these can be achieved through means such as: media campaigns, street theatre, classroom teaching, and individual financial counselling.

Banks should provide adequate security measures to guide, protect and enhance customers' confidence, satisfaction, independence and convenience. Such measures include the provision of digital signature, digital certificates, 128 Bit Secure Socket Layer (SSL) Encryption. Government should enact adequate and proper legal framework, laws and regulations on e-banking, establish regulatory agencies to monitor, assess, audit and regulate the activities of internet service providers.

The people of the zone should be economically enhanced, opportunities for employment created for them and the wealth of their land made not to be a curse but a blessing to them. The basic infrastructure (electricity, telecommunication, transportation, etc), should be provided adequately by the necessary agencies and government for at least a minimum level of electronic banking solution to succeed in the south-south zone of Nigeria.

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