

A customer perspective on infrastructure & legislative effects to use mobile banking app in Nigeria

Abba Hassan*, School of Science & Technology, Abubakar Tatari Ali Polytechnic, Bauchi, Nigeria

Mohammed Bala Yakubu, School of Science & Technology, Abubakar Tatari Ali Polytechnic, Bauchi, Nigeria

Mohammed Bulama, School of Science & Technology, Abubakar Tatari Ali Polytechnic, Bauchi, Nigeria

Aliyu Abdullahi Shitu, School of General Studies, College of Agriculture, Bauchi, Nigeria

Suggested Citation:

Hassan, A., Yakubu, M. B., Bulama, M. & Shitu, A. A. (2019). A customer perspective on infrastructure & legislative effects to use mobile banking app in Nigeria. *Global Journal of Information Technology: Emerging Technologies*. 8(3), 102–113.

Received June 23, 2018; revised August 21, 2018; accepted November 02, 2018;

Selection and peer review under responsibility of Prof. Dr. Dogan Ibrahim, Near East University, Cyprus.

©2018 SciencePark Research, Organization & Counseling. All rights reserved.

Abstract

In today's age of new opportunities and emerging technologies, various studies have affirmed that the adoption of information and communication technology required an enabling environment like that of mobile device. Mobile banking is an ICT application considered to be of vital use among people in different countries of the world, who are likely to have different infrastructural development or resource facilitating conditions. Despite all the benefits of mobile banking application, yet its adoption is beyond the industry expectations in Nigeria and most African countries. This can be attributed to some factors. This study examines the resistance factors that influence the adoption of mobile banking application in Nigeria in relation to enabling environment, based on customers perspective and concluded that customer's resistance to use mobile banking services in Nigeria was significantly influenced by inadequate bank branches, absence of legislative framework, high cost of monthly Internet subscription and poor quality of Internet/telecommunication services.

Keywords: Mobile banking usage, customer's, technology, resistance, resources.

* ADDRESS FOR CORRESPONDENCE: **Abba Hassan**, School of Science & Technology, Abubakar Tatari Ali Polytechnic, Bauchi, Nigeria.

E-mail address: zumkas@yahoo.com/ Tel.: +2347014414248

1. Introduction

Mobile banking services is defined as a platform of e-commerce which allows people to access their banks account while on the move, at any convenient time and place (Suoranta, 2003). It is also considered as the process of providing banking and related financial services, such as payment for goods and services purchased, savings, inter-account funds transfer and other market transactions electronically through mobile devices (Tiwari, Buse & Herstatt, 2007). However, there has been a tremendous growth in mobile phones banking market in many countries of the world. In the last few years research shows that the advent of global system for mobile communication (GSM) have brought about effectiveness and efficiency in the ways and manners that banking and other business transaction are been carry out (Tiwari et al., 2007). Mobile phones nowadays serve as a platform for launching new computing trend in banking industries such as the launching of mobile banking application by many banks (Pillania, 2009). The utilisation of mobile devices for conducting banking activities initiates the concept of what is today called mobile banking (m-banking).

However, literature suggested there is a significant increase in the number of GSM subscribers in both developed and developing countries of the world because of the device flexibility and portability, which allow customers to access their banks account anytime, anywhere (Pillania, 2009). The mobile market is one of such markets that are very fast in the world (Gupta & Gollapudi, 2008; Nawafleh, 2015). Banks and other financial services providers have seized this opportunity to penetrate new market in order to gain more market share by offering a variety of services that add value to the customers through the use of mobile devices inform of m-banking services (Nawafleh, 2015).

Mobile banking or in other word banking at home reduces customer transaction time, as well as allowing customers to access their bank account from anywhere, anytime irrespective of their geographical location, through mobile devices. Similarly, client can also transfer funds to another person's using just only the device keypad, unlike the traditional banking services where customer has to go the banking hall before performing such transactions, and customers can also use their mobile devices to request for cheque books and demand draft details where another person passed a draft or cheque for payment claim to be issued by the account holder (Goodman & Harris, 2010). In the field of commercial and business, mobile devices play an important role as it increase the speed of transaction drastically, increases flexibility and reduce the cost of transactions (Ha, Canedoli, Baur & Bick, 2012).

Though there are few study conducted in Nigeria with regards to mobile banking application in general, but the few literature suggest that the level of mobile banking adoption in the country is still very low compared to other parts of European and some Asian countries and this may be attributed to inadequate infrastructures, lack of access to financial institutions, security and privacy concerns of individuals, inappropriate law that will protect the privacy of individuals, cultural barriers and other demographic factors. Therefore, the study will examine/explore the factors responsible for people resistance to use mobile banking.

2. Related work

The scope of this study is to examine the factors responsible for the slow adoption of mobile banking application, including people intention to use mobile banking services, after critically reviewing the literature that pertain to the development of mobile banking services in African countries and other countries of the world. The variables such as lack of security and privacy, lack of trust were the strongest factors that influence people intention to use mobile banking services negatively in most developing countries (Shaikh & Karjaluto, 2015). Similarly, Touray, Salminen and Mursu (2013) observed that banks staff also plays an important role in encouraging people to adopt new technology, they stressed that resistance by bank staff to adopt new innovation may lead to a poor adoption pattern and malfunctioning among customer's. Therefore, staff must always show their willingness to adapt with the shifting technological needs (Champolivier, Debaeke, Thibierge, Dejoux, Ledoux, Ludot, et al., 2011). However, the time taken by people to accept a new technology such as

mobile banking also depends on the device operability and the reliability of the new computing trend or technology (Karjaluo, Laukkanen & Kiviniemi, 2010), as people intention to use the new channels is affected by security and privacy issues involved as shown by previous research works (Lim, Vos, Flaxman, Danaei, Shibuya, Adair-Rohani, et al., 2013; Oni & Ayo, 2010) that bank's e-services quality is measured by people on the basis of trust, reliability and other security measures in providing such services (Kazi & Mannan, 2013). However, the implementation of mobile banking services in some of the Asian countries has proven to be more successful, especially in South Korea, Japan, Malaysia and other Asian countries (Tan, Chong, Loh & Lin, 2010). The major difference between the Asian successful implementations of mobile banking services and that of the failure in some European and North American countries is primarily attributed to the 'payment culture' of the consumers that are country-specific (Goyal, Pandey & Batra, 2012).

3. Factors affecting mobile banking adoption

Based on the data analysed, it was observed that despite the proliferation of mobile phone (handsets) of different shapes and sizes, the adoption of mobile banking was restricted to some elite and urban customers in Nigeria.

Prior study done by Agwu, Okpara, Ailemen and Iyoha (2014) has identified trust as one of the most significant factors of mobile banking usage and impacted negatively on customer's intention to use the new emerging platform. It became very difficult for not only banks but also other business organisations as well to gain their customers trust (Chemingui & Ben lallouna, 2013) because trust is difficult to build but easy to lose as defined by Morawczynski and Miscione (2008), and indeed, trust itself is a multifaceted concept that requires careful handling in all banking transactions (Ha et al., 2012). Trust is considered as a cross-cutting concept in that people can trust or mistrust their own skills (Agwu & Carter, 2014).

It is only when people have confidence on the interface, the network that transports their cash, the institutions representatives who control/managed their cash (Chemingui & Ben lallouna, 2013) and also trust the institutions itself before they can adapt to any technological changes that arise (Ayo, Ekong, Afolabi & Adebisi, 2007) in a way or manner that the industry expects (Donner & Tellez, 2008). Similarly, Akturan and Tezcan (2012) stressed that some people may trust various people in their networks who they considered to be exchange partners in mobile banking transaction while others may not and this make it difficult for many customers to adopt m-banking services. However, whenever a new innovation like that of banking on the move is introduced, there will be no reasons for many customers to adopt, as there is no any prior knowledge from customers to fall back on (Goyal et al., 2012) because the experience or knowledge-based trust that normally developed through iterative interaction of the traditional banking system may not exist (Boateng, Hinson, Galadima & Olumide, 2014).

In addition, it is expected that customer's initial trust 'based on certain perceptive and possibly other forces such as cognitive cues' (Akinci, Aksoy & Atilgan, 2004) will play significant role on people decision to adopt mobile banking channels because initial trust differs from experiential trust in the early stage as mentioned by Saleem and Rashid (2011), as such trust is developed without previous experience. Therefore, it is assumed that the customers don't have credible, adequate and meaningful information about the services, and effective bonds with one another (Porteous, 2006).

There are issues related to trust which seemed to mediate the adoption of mobile banking services channels for remittances in Nigeria, current research (Agwu & Carter, 2014) shows that 2 out of 45 subjects in the Northern part of the country, and 3 out of 35 subjects in the Southern part were mostly concerned about the transferred fund not reaching the recipient's mobile phone and were wary on whether it would be possible to retrace lost money in case the recipient did not receive a remittance that was initiated, as such many people refused to embrace the new technology in the country (Agwu et al., 2014).

In another study done by Aliyu, Younus and Tasmin (2012), it was found that cost to be one of the inhibiting factors for people resistance not to adopt mobile banking services in most African countries. According to Agwu et al. (2014), it is the cost of compatible mobile phones and Internet services. Nowadays, modern smartphones that support mobile banking channels may cost less than a month's salary in developed countries such as US, UK and other parts of the world (Shaikh & Karjaluo, 2015), but many salary earners in Nigeria, for instance, will probably need more than a month's income (Agwu et al., 2014) to buy one of such devices for online transactions, thus affecting their intention to use the services.

Findings further revealed that the cost of compatible modern smartphones and the monthly cost of Internet subscriptions are beyond the reach of most public servant and those who works in private sectors in Nigeria (Agwu et al., 2014), as a result they depend on bank branches and are simply content with the 'short message services provided by their banks' (Agwu et al., 2014). Similarly, the maintenance and repairs cost of modern phones become a source of concern to many individual and form part of people reasons not to use mobile banking services in the country (Agwu, 2012).

However, research in the field of mobile banking according to Koivisto (2014) has shown that individual perception of cost in mobile banking services affects their attitude towards its usage (Akturan & Tezcan, 2012; Chemingui & Ben lallouna, 2013). In other words, customers willingness to use mobile banking service is affected once they realise that they are incurred to additional cost for using the services, as most customers are cost sensitive (Chemingui & Ben lallouna, 2013). While Reinhart and Rogoff (2013) perceived cost differently by stressing that, applying direct costs to mobile banking platforms might slow down consumer's intention to use it and may also affect the potential of this new technology, this contradicts the finding of Agwu et al. (2014), who viewed cost from the device cost and Internet services subscription. It is also worth noting that, once a new platforms such as that of mobile banking is been implemented, the incremental cost of each new customer is virtually zero (Ha et al., 2012). Therefore, banks should try to benefit from economies of scale than mint money from customer by directly charging users for using the new services channels (Chemingui & Ben lallouna, 2013).

Prior studies done by Goyal et al. (2012) stressed that individual perception of cost with regards to mobile banking services does not only mean the actual monetary cost for using the services but also the switching cost from customer point of view, as such customers won't switch from service to another if they do not recognise the real benefits to compensate their effort (Shaikh & Karjaluo, 2015).

4. Methodology

The aim of this study is to examine the perceived factors responsible for people resistance to use mobile banking services in Nigeria as country with developing economy. Qualitative approach was utilised, over quantitative, due to the exploratory nature of the research, in determining individual resistance to use the new services channel, and the scarcity of literature with regards to mobile banking usage in Nigeria. The nature of this study also requires the collection of primary data. Primary data is very important for this survey due to scanty of published literatures on the current issues under investigation. Therefore, there is need to gain firsthand knowledge from non-adopters of mobile banking services, non-bank customers in order to have clear understanding of the factors that influenced people intention to use mobile banking application.

5. Data collection

Data for this survey were collected from individual bank customers, business people, civil servant and students from the six geo-political zones of Nigeria, comprising of three major ethnic groups, i.e., Hausa, Yoruba and Igbo, and other small ethnic groups in the country, who are yet to embrace the services channel of mobile banking. In total, 250 questionnaires were distributed out of which 203

were correctly filled and returned. These comprise 103 males and 100 female with age ranges between 18 and 56. The questionnaire has two sections; section (A), demographic profile, and section (B), responses that best reflects customers beliefs with respect to mobile banking resistance, consisting of five cluster questions ranging from lack of security and privacy (e.g., lack of sophisticated technology, unsecure Internet environment, ways in which the services is offered, exposing privacy not only to banks but also to an unknown third party), high level of risk (e.g., lack of legal/legislative framework, technological problem, tracking of activities and negative information from colleagues about the services), limited access to financial institutions (e.g., bank branches not reachable at any time, overcrowded customers due to limited number branches) and resource facilitating conditions (e.g., lack of Internet/telecommunication services in many areas, low income earning, poor Internet/telecommunication services).

It takes the researcher over 3 months period to collect the data due to the difficulties in reaching the participants who reside across the six geopolitical zones, North East, North Central, North West, South East, South West and South-South of Nigeria, comprising students, self-employed individuals and those working either in private or public sector. However, the richness of the data collected was enough to reach a conclusion with regards to the survey objectives.

6. Experimental classification results and analysis

6.1. Demographic profile

The survey data produced 203 responses for the data sample. The customer demographics such as gender, age, ethnicity and employment status were analysed. The study sample consisted of 50.7% male and 49.3% female. The ratio of gender distributions shows that the difference between the male and female respondents was insignificant, this may be attributed to ways and manners in which the questionnaire was distributed by the researchers in order to have balance gender representation in the survey. Table 1 displayed the respondents' demographic profile. The group that constituted majority in the survey data sample was between the groups of 18–35 years consisting of 62%, followed by the age group of 35–55 years consisting of 22. Participants within the age of 56 years and above have the lowest percentage. The reason for this was that Gen Y are more likely to embrace mobile banking than Gen X, as most of the younger generation were used to social media (Agwu, 2012).

The respondent's ethnic distribution showed that majority of the participants were from the small ethnic groups other than the major ones, as they account for 35.5% of the total responses, followed by Hausa language consisting of 26.1%, while Igbo and Yoruba languages had 22.7% and 15.8%, respectively. However, the employment status of the respondents shows that 53% of the respondents were students, while those who work either in public or private sector account for 22%, and self-employed or business individuals constitute 25% of the total responses.

Table 1. Demographic profile

Gender	Frequency	%
Male	103	50.7
Female	100	49.3
Ethnicity	Frequency	%
Yoruba	32	15.8
Igbo	46	22.7
Hausa	53	26.1
Others	72	35.5
Age	Frequency	%
18–35	128	62
35–55	44	22
56–Above	33	26
Employment Status	Frequency	%
Students	107	53
Civil Servants	44	22
Self Employed	52	25

6.2. Hypothesis

For the purpose of this research, which is to examine/identify the resistance factors with regard to mobile banking adoption in Nigerian context, the following hypothesis were formulated to test whether there is a relationship between legal/legislative frameworks, limited access to financial institutions, high-cost monthly Internet subscription and poor quality of Internet and telecommunication services with mobile banking usage or not.

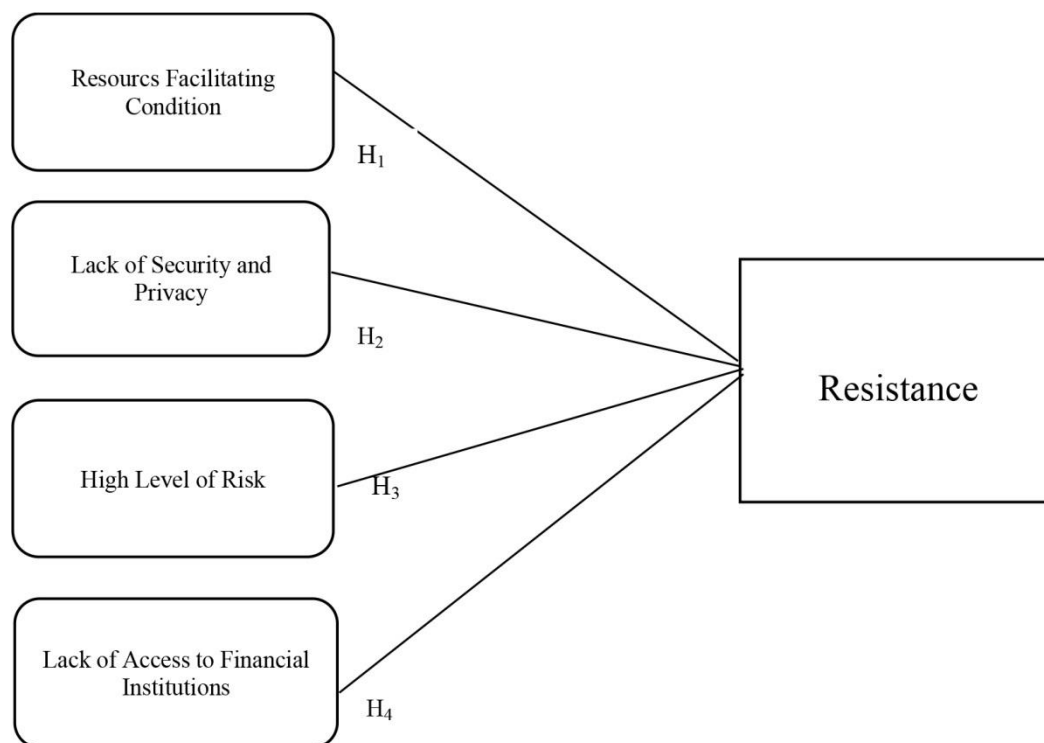


Figure 1. Research model

6.3. Findings

Based on the survey data collected from the respondents, i.e., the non-adopters of mobile banking services in Nigeria, who participate in this research comprising students, self-employed individuals and employees who either works in the public or private sectors. We discovered the following factors to be responsible for people resistance to use mobile banking services in Nigeria.

7. Resistance factors of mobile banking usage in Nigeria

7.1. Resource facilitating conditions

H₁—based on the responses obtained, the study discovered that there is relationship between the availability of resources that facilitate mobile banking application and people resistance to use the services, as shown in Table 2 below. Where Sd = strongly disagree, *d* = disagree, *n* = neutral, *a* = agree and Sa = strongly agree using Likert Scale

Table 2. Resource facilitating conditions. Likert scale Nigerian customers, (N = 203)

H ₁	Items	Sd	D	n	A	sa	Mean	Median
1	Lack of Internet and telecommunication services	13%	15%	17%	27%	28%	3.42	2.5
2	High cost of monthly Internet subscription	18%	19%	7%	33%	23%	3.22	2.5
3	Device does not support Internet application	12%	18%	14%	37%	19%	3.30	3
4	Poor quality of Internet and telecommunication services	18%	19%	8%	33%	22%	3.20	2.5
	Total	13.14	10.5					

Table 1 shows that there is relationship between lack of Internet and telecommunication service under **H₁** (resource facilitating condition) and people resistance to use mobile banking services in Nigeria, as the Mean value of 3.42 is higher than the Median which has a value of 2.5. Therefore, the respondents strongly agree that there is a relationship between their intention to use mobile banking services and lack of Internet/telecommunication services.

Another reason for many Nigerian customers resistance to use mobile banking services is the high cost of monthly Internet subscription as shown in Table 1. This can be attributed to customers monthly earning in Nigeria, as majority of them earn less than \$200 per month according to Agwu et al. (2014). Therefore, one can conclude there is a relationship between the costs of Internet under **H₁** and resistance to mobile banking usage, as the Mean value of 3.22 is above the Median value of 2.5. While the inaccessibility of Internet/telecommunication services is considered as a barrier to mobile banking usage by most villages' customers, others have access to the services but their devices does not support Internet application as shown in Table 1 with the Mean value of 3.30 and Median value of 3, this shows that the respondent agrees that lack of mobile devices that support Internet application under **H₁** influence their decision to use mobile banking services in Nigeria.

In addition to lack of Internet/telecommunication services, device that supports Internet applications and high cost monthly Internet subscriptions, the study discovered poor quality of Internet/telecommunication services is another factor that contributes to people resistance as shown in Table 1 that even those who have access to Internet and telecommunication services in Nigeria experienced poor services quality, as 30% and 24% of the respondents agrees that they opted not to use mobile banking services due to the poor quality of Internet/telecommunication services experienced in many part of the country. Similarly, the Mean value of 3.20 is higher than the Median

value 2.5, meaning that there is relationship between **H₁** and people resistance to mobile banking usage in Nigeria.

7.2. Lack of security and privacy

The study discovered that Nigerians needs for privacy is another reason for resisting mobile banking services, as majority of the customers strongly agree that banks lack the sophisticated technology and procedures to safeguard customer’s funds and other details. Similarly, the ways and manners in which the services are offered are not secured, as shown in Table 3 below.

Table 3. Lack of security and privacy. Likert scale Nigerian customers, (N = 203)

H ₂	Items	Sd	D	n	a	sa	Mean	Median
1	Lack of sophisticated technology and procedures	10%	16%	15%	31%	28%	3.10	2.5
2	Unsecure Internet environment (Internet vulnerability)	20%	10%	12%	30%	28%	3.15	2.5
3	Ways in which the service is offered (direct or indirect)	18%	19%	11%	32%	20%	3.19	2.5
4	Services channel exposes confidential information	22%	18%	10%	32%	18%	3.04	3
Total							12.48	10.5

As shown in Table 3, the respondent’s frequency has a Mean value of 3.10 and Median value of 2.5, indicating that the respondents strongly agreed that absence of sophisticated technology and procedure to safeguards customers under **H₂** in Nigerian banks contributed significantly to people resistance to use mobile banking services in Nigeria. Similarly, the vulnerability of Internet environment is another factor that affects people intention to use mobile banking services in Nigeria, as shown Table 3 that majority of the respondents strongly agreed that the vulnerability of Internet environment is one of the factors that affect customers’ intention to use mobile banking services. Therefore, one can conclude that there is a strong relationship between the vulnerability of Internet environment **H₂** and resistance to use mobile banking services, and this supports the findings of Porteous (2006), that for most customers to accept mobile banking services, the Internet environment required more security majors.

In addition, Table 3 clearly shows that there is relationship between the ways in which mobile banking services is offered to customers under **H₂** (directly or indirectly) and resistance to usage, as the difference between the Mean value of 3.19 is above the Median value of 2.5. Therefore, the ways in which the services are offered influenced people decision negatively with regards to mobile banking usage. This supports the findings of Goyal et al. (2012), who stressed that the ways in which banks offer’s mobile banking services to their customers are not secured. However, this study discovered that there is no strong relationship between mobile banking services channel **H₂** and individual’s resistance to use the services in Nigeria, as difference between the Mean value of 3.04 and Median value of 3 is insignificant. Similarly, the figure shows about half of the respondents disagreed that they opted not to use the services because it will expose their bank details and other information.

7.3. High level of risk

Table 4 shows a brief statistical analysis of the respondents’ responses with regards to risks involved in mobile banking application in order to determine whether there is a relationship between the risk involved in mobile banking services **H₃** and people resistance to use mobile banking services.

Table 4. Lack of security and privacy. Likert scale Nigerian customers, (N = 203)

H ₃	Items	Sd	D	n	A	Sa	Mean	Median
1	Lack of legal/legislative framework	16%	12%	16%	28%	28%	3.38	2.5
2	Technological problem associated with mobile devices	13%	12%	13%	35%	27%	3.51	2.5
3	Tracking of customers activities through mobile devices	18%	17%	8%	34%	23%	3.27	2.5
4	Negative information from colleagues who had bad experience about the services	19%	16%	9%	29%	27%	3.29	2.5
Total							13.45	10

Table 4 shows that there is relationship between legal/legislative framework under H₃ and resistance to mobile banking usage on the part of individuals. This is because a Mean value of 3.38 as compare to Median value of 2.5 clearly shows that the respondents strongly agree that Nigeria as a country lacks the basic legal and legislative framework required to protect customers in the digital realm; therefore, opted not to adopt the services, as there are no penalties specified for those engage in fraudulence activities. However, most of the Nigerian customers strongly agree that they do not embrace the new services channel of mobile banking because of the technological problem associated with newly introduced technology, as the Mean value of 3.51 is higher than the Median value of 2.5. Thus, indicating a strong relationship between technology problem under H₃ and customer's resistance to mobile banking usage in Nigeria.

Preponderance of respondents from Table 4 shows a Mean value of 3.27 and Median value of 2.5. This shows that the respondents who participated in the survey agree that they opted not to use mobile banking services because the devices will allow others to track their activities whenever they are conducted, thus opening the way for unauthorised individuals and government to monitor individuals movement, activities and other confidential information. Therefore, one can conclude that fears of tracking customer's activities under H₃ cluster contributed to people resistance to use mobile banking services.

However, another resistance factor that contribute to people resistance to use mobile banking services in Nigeria is the information they received from colleagues and friends who had bad experience about the services when they used it, as shown in Table 4, the Mean value of 3.29 is higher than the Median value of 2.5, meaning the respondents strongly agree that negative information about the services is one of the factors that contributed to their resistance. Therefore, there is relationship between H₃ and mobile banking resistance. This supports the findings of Chemingui and Ben lallouna (2013) who stressed that the nature information received from those who used the services influenced others decision as to use the services or not.

7.4. Lack of access to financial institutions

Another strongest resistance factor that contributes to people resistance to embrace mobile banking services in Nigeria is the limited number of financial institutions in the country as majority of customers lack access to financial institutions, particularly the rural areas as shown in Table 5.

Table 5. Lack of access to financial institutions. Likert scale Nigerian customers, (N = 203)

H4	Items	Sd	D	n	A	Sa	Mean	Median
1	Bank branches not reachable to customers at any time	12%	23%	17%	30%	18%	3.21	3
2	Crowded bank branches	10%	12%	9%	38%	31%	3.20	2
3	Unavailability of bank branches in rural areas	5%	10%	8%	39%	38%	3.86	2
4	Generally, the inaccessibility of bank branches influenced people decision to use mobile banking	9%	8%	17%	36%	30%	3.78	2.5
Total		14.05	9.5					

It has been found that there is a relationship between inadequate bank branches and resistance to mobile banking usage as shown in Table 5, majority of the respondents strongly agree that the low level of mobile banking usage in Nigeria is attributed to the inadequate number of banks in the country, as most if not all the banks branches were always crowded with people, this is because Nigeria is a country with an estimated population of over 180,000,000 and has only 22 banks operating with 1,752 branches nationwide according to Agwu et al. (2014). However, Table shows that 38% and 31% of the respondents strongly agree that the low level of mobile banking usage in the country is attributed to the lack of enough banks branches in the country.

Therefore, there is a strong relationship between availability of bank branches and people intention to use mobile banking in Nigeria, as majority of the respondents that participated in this survey opted not to use mobile banking service because bank branches were not reachable to them when and where they need it. As most of the local government areas and other villages in Nigeria lack access to financial institutions, particularly the northern part of the country.

8. Conclusion

In conclusion, the study identifies and describes some of the factors responsible for people resistance to use mobile banking services in Nigeria. The study results provide support for the research model. Resource facilitating conditions, lack of security and privacy, high level of risk and lack of access to financial institutions. The study discovered that poor quality of Internet/telecommunication services, lack of legal and legislative framework and lack of access to financial institutions by many Nigerian customers were the strongest resistance factors that contribute negatively on people intention to use mobile banking services in Nigeria. However, when introducing new technology like that of mobile banking, legal and legislative framework should be incorporated together. The limitation of this research is that the selected participants comprises only students, self/employed individuals and those who work either in public or private sectors, i.e., the non-adopters. It was assumed that the chosen respondents sample constitutes the majority of non-adopters of mobile banking applications. This study only examined resistance factors with regards to mobile banking usage from customer's point of view with special consideration to general enabling environment for mobile banking application. Therefore, future studies can explore other factors from multi-cultural perspectives.

This study recommends that the Nigerian government should design and implement policies, rules and regulation that can protect banking customers in the digital realm. In addition, services quality standards should be set for telecommunication services providers operating in Nigeria in order to ensure quality service delivery.

However, banks operating in the country should expand their scope of operation, by opening more branches, in order to ensure adequate access to financial institutions at any time. In addition, banks

should also support the government in the provision of infrastructures, particularly those that facilitate electronic transactions.

References

- Agwu, E. (2012). Generations X and Y's adoption of internet and internet banking in Nigeria: a qualitative study. *International Journal of Online Marketing (IJOM)*, 2(4), 68–82.
- Agwu, E. M. & Carter, A. -L. (2014). Mobile phone banking in Nigeria: benefits, problems and prospects. *International Journal of Business and Commerce*, 3(6), 50–70.
- Agwu, M., Okpara, A., Ailemen, I. O. & Iyoha, F. O. (2014). Adoption triggers and barriers of mobile banking services in Nigeria. *International Review of Social Sciences*, 2(9), 374–386.
- Akinci, S., Aksoy, S. & Atilgan, E. (2004). Adoption of internet banking among sophisticated consumer segments in an advanced developing country. *International Journal of Bank Marketing*, 22(3), 212–232.
- Akturan, U. & Tezcan, N. (2012). Mobile banking adoption of the youth market: perceptions and intentions. *Marketing Intelligence & Planning*, 30(4), 444–459.
- Aliyu, A. A., Younus, S. & Tasmin, R. (2012). An exploratory study on adoption of electronic banking: underlying consumer behaviour and critical success factors. case of Nigeria. *Business and management Review*, 2(1), 01–06.
- Ayo, C. K., Ekong, U. O., Afolabi, I. T. & Adebisi, A. A. (2007). M-commerce implementation in Nigeria: trends and issues. *Journal of Internet Banking and Commerce*, 12(2).
- Boateng, R., Hinson, R., Galadima, R. & Olumide, L. (2014). Preliminary insights into the influence of mobile phones in micro-trading activities of market women in Nigeria. *Information Development*, 30(1), 32–50.
- Champolivier, L., Debaeke, P., Thibierge, J., Dejoux, J. F., Ledoux, S., Ludot, M., Berger, F., Casadebaig, P., Jouffret, P., Vogrincic, C. & Lecomte, V. (2011). Construire des strategies de production adaptees aux debouches a l'echelle du bassin de collecte. *Innovations Agronomiques*, 14, 39–57.
- Chemingui, H. & Ben lallouna, H. (2013). Resistance, motivations, trust and intention to use mobile financial services. *International Journal of Bank Marketing*, 31(7), 574–592.
- Donner, J. & Tellez, C. A. (2008). Mobile banking and economic development: linking adoption, impact, and use. *Asian Journal of Communication*, 18(4), 318–332.
- Goyal, V., Pandey, U. & Batra, S. (2012). Mobile banking in India: practices, challenges and security issues. *International Journal of Advanced Trends in Computer Science and Engineering*, ISSN, 2278–3091.
- Goodman, S. & Harris, A. (2010). The coming African tsunami of information insecurity. *Communications of the ACM*, 53(12), 24–27.
- Gupta, S. & Gollapudi, S. (2008). CD95-mediated apoptosis in naive, central and effector memory subsets of CD4+ and CD8+ T cells in aged humans. *Experimental gerontology*, 43(4), 266–274.
- Ha, K. H., Canedoli, A., Baur, A. W. & Bick, M. (2012). Mobile banking—insights on its increasing relevance and most common drivers of adoption. *Electronic Markets*, 22(4), 217–227.
- Karjaluoto, H., Laukkanen, T. & Kiviniemi, V. (2010). The role of information in mobile banking resistance. *International Journal of Bank Marketing*, 28(5), 372–388.
- Kazi, A. K. & Mannan, M. A. (2013). Factors affecting adoption of mobile banking in Pakistan: empirical evidence. *International Journal of Research in Business and Social Science (ISSN: 2147–4478)*, 2(3), 54–61.
- Koivisto, K. (2014). *Mobiilipankkiasiainnin omaksumiseen vaikuttavat tekijät Suomessa*.
- Lim, S. S., Vos, T., Flaxman, A. D., Danaei, G., Shibuya, K., Adair-Rohani, H., AlMazroa, M. A., Amann, M., Anderson, H. R., Andrews, K. G. & Aryee, M. (2013). A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of disease study 2010. *The Lancet*, 380(9859), 2224–2260.
- Morawczynski, O. & Miscione, G. (2008). *Examining trust in mobile banking transactions: the case of M-PESA in Kenya, in social dimensions of information and communication technology policy*, (p. 287–298). Springer.
- Nawafleh, S. A. (2015). The effect of information technology on the bank profitability imperial study of jordanian banks. *International Journal of Business and Management*, 10(2), 170.

Hassan, A., Yakubu, M. B., Bulama, M. & Shitu, A. A. (2018). A customer perspective on infrastructure & legislative effects to use mobile banking app in Nigeria. *Global Journal of Information Technology: Emerging Technologies*, 8(3), 102-113.

Oni, A. A. & Ayo, C. K. (2010). An empirical investigation of the level of users' acceptance of e-banking in Nigeria. *Journal of Internet Banking and Commerce*, 15(1), 1–13.

Pillania, R. K. (2009). Multinationals and emerging markets. *Business Strategy Series*, 10(2), 100–103.

Porteous, D. (2006). *The enabling environment for mobile banking in Africa*.

Reinhart, C. M. & Rogoff, K. S. (2013). Banking crises: an equal opportunity menace. *Journal of Banking & Finance*, 37(11), 4557–4573.

Saleem, Z. & Rashid, K. (2011). Mobile banking adoption in banking sector of pakistan. *Journal of Yasar University*, 21(6), 3538–3560.

Shaikh, A. A. & Karjaluo, H. (2015). Mobile banking adoption: a literature review. *Telematics and Informatics*, 32(1), 129–142.

Suoranta, M. (2003). *Adoption of mobile banking in Finland*. Jyvaskyla, Finland: Jyvaskylan yliopisto.

Tan, K. S., Chong, S. C., Loh, P. L., & Lin, B. (2010). An evaluation of e-banking and m-banking adoption factors and preference in Malaysia: a case study. *International Journal of Mobile Communications*, 8(5), 507–527.

Tiwari, R., Buse, S. & Herstatt, C. (2007). Mobile services in banking sector: the role of innovative business solutions in generating competitive advantage. *Technology and Innovation Management Working Paper* (p. 48).

Touray, A., Salminen, A. & Mursu, A. (2013). ICT barriers and critical success factors in developing countries. *The Electronic Journal of Information Systems in Developing Countries*, 56.