Author(s): Olaleye, Sunday Adewale; Sanusi, Ismaila Temitayo; Ukpabi, Dandison

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Chapter 7
Assessment of Mobile Money Enablers in Nigeria

Sunday Adewale Olaleye
University of Oulu, Finland

Ismaila Temitayo Sanusi
University of Eastern Finland, Finland

Dandison C. Ukpabi
University of Jyväskylä, Finland

ABSTRACT

This chapter describes how mobile money is an emerging and innovative financial service delivery mechanism. With huge success, recorded mostly in the developing economies, it is scholarly unclear the antecedents of its adoption. Using a survey of 151 respondents comprising both the banked and underbanked in the South-Western part of Nigeria, the authors used the PLS-SEM to test the research hypothesis. The results reveal the enablers of mobile money, which are social influence, performance expectancy, security and effort expectancy, and inhibitors such as system anxiety and cost. Privacy, trust, image and convenience were not found significant in this study. Social influence, performance expectancy and effort expectancy variables adapted from the UTAUT model have considerable influence on mobile money in Nigeria. Study implications and future directions are offered.

INTRODUCTION

Mobile banking is thriving but the rural dwellers that account for more than half of the population of Nigeria are lagging in benefitting maximally in this technological advancement. Nigerian banking sector has shifted its attention from traditional banking to internet banking to add more values to the services it offers. Despite the complementary innovation in the banking sector, a vast range of customers has still left behind especially the rural areas due to the infrastructural deficit (Asongu, 2015). Mobile Money can be used to top up the phone, pay for groceries, transfer funds to other subscribers and helps to carry cash in a digital wallet instead of carrying a physical cash that is vulnerable to robbery (Greenacre, 2013). Despite the benefits of mobile money, it is not yet to practice all these functionalities in Nigeria.

The benefits and the challenges of mobile money are growing together. Regardless of its benefits, mobile money had failed to catch up quickly in the rural areas of Nigeria where relatively few people have bank access. It is also difficult to ascertain whether the success stories of mobile money in one part of Africa can be replicated in another part with the same result. As the users' knowledge, adoption, use and continuous use is progressive in Nigeria, some existing scholars have considered the rise of mobile money in the context of Australia regulation (Greenacre, 2013). There has been a focus on mobile money market development with a study on migration from giant robots to mobile money platforms, integrating trust into the technology acceptance model with a focus on poor citizens of India. Mobile money has been studied in the context of the promises and pitfalls (Bhattacharya, 2015; Chauhan, 2015; Osei-Assibey, 2015; Kusimba, Yang and Chawla, 2015; Osazevbaru and Yomere, 2015; Alao and Sorinola, 2015; Blumenstock, Callen, Ghani and Koepke, 2015), mobile money remittances and household welfare (Munyegera and Matsumoto, 2016), comparison of two countries on politics of mobile money (Suárez, 2016) and mobile money in non-profit sector (Yunus, Khan, Tasnuba, Husain and Misiti, 2016).

Mobile money is an emerging technology without a universal business model. It is a developing technology in Africa with an ecosystem of banking sectors, mobile network operators, merchants, retailers, and consumers. Though the goal of every business is to reduce running costs and improve business performance, mobile money emergence is not without its own challenges. Presently, there is a vacuum in interoperability of mobile money operators, lack of unified method of operations, lack of trust, insufficient user's experience, limitation of smartphones users in the rural areas, low literacy level in the rural areas, erratic mobile network, limits on the amounts that mobile money user can transfer per day and regulatory issues (Greenacre, 2013; Ondiege, 2015). These are the standing challenges that are contending against the enabling factors of mobile money penetration and advancement. Though the

practitioners are working towards finding solutions to these challenges, there is a need for scholars to fathom the enabling and inhibiting factors of mobile money to ensure its diffusion.

The overall goal of this research project is to assess, analyze and evaluate mobile money in Nigeria. The specific objective is to find out the enablers of mobile money in Nigerian rural and urban areas and the inhibiting factors of mobile money penetration and advancement. The study will examine in detail the benefits of mobile money to its stakeholders through its enabling factors and how to seek caution from its inhibitors. This study will use positivist approach to examine the hypothetical relationships within the conceptual model. The study adapted the predication of Pantano and Priporas (2016) as they suggested a quantitative method for mobile retailing study for insight. The sections of this study will be in the following order. Part two evinces the background of mobile money globally and the brief overview of mobile money. Part three explore the relevant literature while part four showcase the methodology and the data analysis for the mobile money study. Part five discusses the findings, managerial implications and future direction of mobile money.

BACKGROUND

Lawack (2012) defines mobile money as "…a digital repository of electronic money developed and implemented on mobile devices, allowing peer-to-peer transactions (P2P) between mobile devices (M2M) from users of the same service." Mobile money has revolutionized money transfer and payment systems (Kirui, Okello and Nyikal, 2012). Thus, with access to a mobile phone, payment could be made such as school fees, utilities, transport fares and even professional charges such as legal and medical bills. This has largely minimized the hardships occasioned by lack of access to banking platforms faced by rural dwellers in the emerging markets. Globally, there are about 150 mobile money services offering subscribers range of money transfer options. The origin of mobile money has been traced to Safaricom, a mobile operator who launched the M-PESA platform in Kenya in 2007 and currently has about 15 million active subscribers making 3 million transactions a day totaling 700 million dollars per month (Brookings Institutions, 2013). The success of M-PESA has resonated in the emerging markets with different mobile money services across different countries. In the developing countries where banking services are mainly available in the cities and urban areas, the emergence of mobile money has improved livelihood. As a matter of fact, urban migrants could easily send money to dependents in the countryside without resorting to traveling or postal charges.

The success of mobile money globally has been attributed to enablers such as mobile phones, network access, government regulation and interoperability. The workability of the innovation thrives on the mobile phones. Consequently, the success of the innovation in the emerging markets is attributed to the deregulation of the telecommunication industry in such markets thereby making access to mobile phones easier and accessible. As a matter of fact, the person sending the money must have access to a mobile phone just like the person receiving the money. Additionally, market size is a contributory factor to the success of the mobile money innovation, as the two countries where the innovation has recorded huge success are Kenya and Indonesia with a population of 48 million and 242 million respectively. Government regulation/central bank support is also a factor for the success of the innovation. Strong state support has been cited as a critical antecedent for the success of the Indonesia model of mobile money (EY, 2017). According to the report, the government provided the policy guidelines that specified terms for outsourcing mobile payments to retail agents. With this, many people bought into the service based on a clearer understanding of the *modus operandi* of the innovation. The policy guidelines also helped to imbue trust into the system by clarifying areas that were considered as legal loopholes in its operation. Finally, interoperability, that is, the attribute of a system to work synergistically with other systems without restriction, is also lauded for the success of the Indonesia model. The Indonesian three mobile operators agreed to an interoperable mobile interface thereby enabling subscribers to send money irrespective of the network.

The socio-economic impact of the mobile money innovation is profound. First, it has opened employment opportunities for many unemployed. The success of M-PESA in Kenya has created 40,000 agents who also employ additional people with different capacities for the day-to-day operation of their business (Oyebode, 2014). Other countries where the innovation succeeded, for instance, Indonesia has also provided employment opportunities for the jobless. Second, mobile money has improved the standard of living of the people by having access to finance as at when needed. Access to finance has been a major contributor to poverty in developing countries. Thus, with the introduction of mobile money, a husband for instance, who works in the city can easily transmit cash to his family in the countryside to meet up with their present financial needs. Mobile money has also contributed to the ease of doing business and reduction of traffic and road crashes. Indisputably, developing countries are noted for poor and chaotic traffic systems. Sometimes, these traffic challenges arise because of an urgent need to meet up with issues such as to send money and make payments. With the introduction of mobile money, one can easily transmit payment without necessarily being on the road, thus, reducing the amount of vehicular traffic on the road at any given time.

However, as novel as the mobile money innovation with its profound impact on the economy, it has woefully failed in many countries. After an extensive review of 196 peer-reviewed and practitioner papers published between 2001-2011 on the subject, Diniz, de Albuquerque and Cernev (2011) summarised that failure of the mobile money innovation in many countries is attributed to the following: first, lack of business model. The hype in the adoption of the innovation because of its success in Kenya led to a chaotic and fuzzy operation deficient of a clear-cut business model. Therefore, many people were lethargic to embrace the service. Second, technological security/user interface limitation posed a serious challenge to its smooth operation. For instance, many feared that their phones would be hacked or cloned and the personal identification number (PIN) through which users gain access to the platform would be abused. Thus, trust, being the cornerstone of exchange relationship was lacking. Third, lack of infrastructure/poor network especially in the developing countries where solid telecommunications infrastructure is a new phenomenon. Many of the developing countries leapfrogged to mobile telephony without experiencing the robust infrastructure that enabled the wired telephone lines. Some country-sides are yet to be connected and those living in such areas are completely cut off from the mobile money revolution. Fourth, deficient regulatory framework and lack of co-operation among service providers also hampered its success in many countries. Some governments did not provide the regulatory guidelines necessary for its success, as a result, there were many legal loopholes in its operation. This mainly contributed to the cold feet some service providers developed and because of interoperability challenges, money transfer was only limited within those in the same network. Finally, illiteracy has also been blamed for its failure in some countries. Some people in the developing countries though possess mobile phones but only use such for its functional purpose of making and receiving calls. Mobile money thrives on mobile apps that needs to be downloaded with basic instructions and inability to read and understand those instructions hampered its usage.

Assessment of Mobile Money in Nigeria

According to the CNBC Africa (2016), Nigeria is the leading country in Africa with the highest diffusion of smartphone and internet penetration. Consequently, many areas are benefitting from digitization. Scholarly evidence exists on the use of internet in Nigerian secondary schools (Adomi and Kpangban, 2010) and universities (Oye, Iahad and Rabin, 2011) with significant impact on the performance of Nigerian students in both national and international academic competitions. Curiously, the impact of ICT on consumers' banking services is comparatively lower. Mobile money emergence is an answer to the quest of the unbanked and the underbanked Nigerians. The banking industry in Nigeria has gone through several structural

reforms; however, the most dramatic was the recapitalization of the capital base of the banks in 2004 from 2 Billion Nigerian Naira to 25 Billion Nigerian Naira (Barros and Caporale, 2012). After the consolidation, the number of banks shrank from 89 to 75 with the capital base moving from 3209 Billion Nigeria Naira to 6555 Nigeria Naira. Additionally, Barros and Caporale (2012) report that the number of bank branches grew from 3,382 to 4,500. The post-consolidation Nigerian banks became stronger and customer-driven. In a bid to attract more customers, efforts were made to diversify their channels of reaching to customers. Considering the huge number of the underbanked, the regulatory authorities came up with the policy of mobile money consisting the bank-led and non-bank led-models (Yakub, Bello, Adenuga, 2013). The bank-led model is made up of a licensed deposit money bank in a consortium of other registered business who come together to deliver mobile money services while non-bank-led model consists registered businesses independent of banks who operate mobile money services in Nigeria. As at 2015, Giginyu (2015) reports that there were 21 licensed mobile money operators comprising 15 non-bank operators and 6 bank operators. Furthermore, the expansion drive of the Central Bank of Nigeria to reach as many Nigerians as possible has also led to 8 additional operators who are currently under pilot schemes and are awaiting registration. However, security and lack of basic infrastructure such as stable power supply are critical setbacks to the rapid acceptance of the initiative.

## CONCEPTUAL FRAMEWORK AND HYPOTHESES

Closely related to mobile money is mobile banking. Scholars have extensively studied mobile banking in the context of adoption, usage, and continuous usage, as such, different theories, models and frameworks have been used in these studies (Shaikh and Karjaluoto, 2015). With the understanding that mobile money is an emerging concept in the electronic finance literature, our study shall adopt some prominent theories and models in examining mobile money adoption in an emerging market context. Thus, the unified theory of acceptance and use of technology (UTAUT), Trust-technology acceptance and some relevant models will be integrated into this study.

System Anxiety

Many of those who are newly introduced to a piece of information system usually feel anxious about using it, however, that anxious feeling ebbs as they continue to use it. System anxiety is defined as "the apprehension or fear that results when an individual is faced with the possibility of using an IS" (Hackbarth, Grover, and

Figure 1. Integrated conceptual framework of mobile money
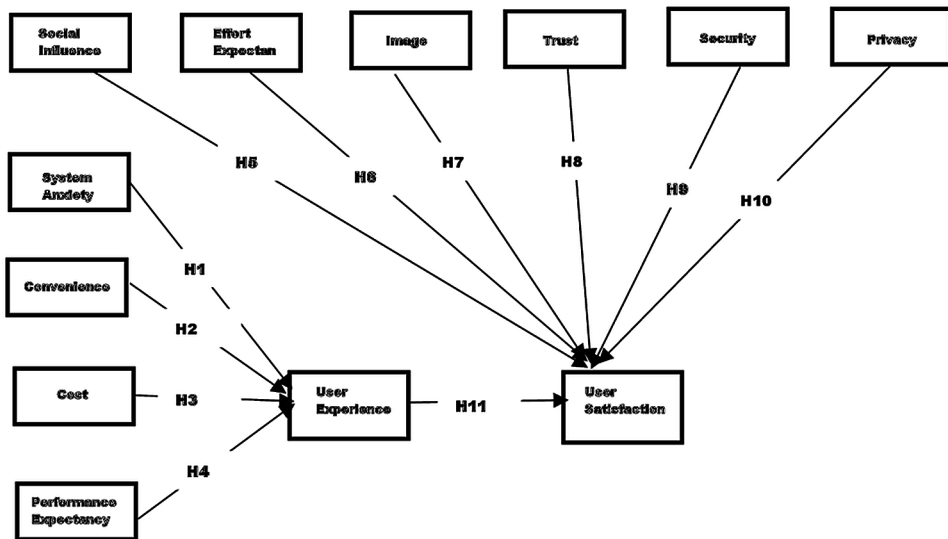
Mun, 2003, p.223). System anxiety varies across demographics with adults and women demonstrating more anxiety than the young and male users (Malaquias and Hwang, 2016). Hackbarth, Grover, and Mun, (2003) reported that system experience is a stronger approach to decreasing system anxiety and increasing ease of use. Earlier, Brown and Coney (1994) contended that self-rated skills, typing ability, and computer attitudes were the factors that induced computer use anxiety among medical practitioners. In the mobile shopping context, Lu and Yu-Jen (2009) argue that anxiety is a key negative determinant of using mobile phones. In the same study, it was reported that the user's self-perception of mobile skillfulness significantly influences anxiety, enjoyment, and usefulness. Finally, in the mobile banking study in Brazil, (Malaquias and Hwang, 2016) reported that effective communication with users outlining its importance can reduce anxiety in the use of mobile banking services. Thus, this study argues that mobile money as an innovation is bound to generate anxiety among users and negatively influence user experience.

H1: System anxiety of mobile money platform will negatively influence user experience.

Convenience

Using a piece of technology poses some difficulties to early users. As a matter of fact, convenience is an important construct in the information systems literature.

A proper understanding of the concept of convenience should incorporate sub-elements such as time, place, acquisition, use and execution dimensions (Yoon and Kim, 2007). In a study of mobile commerce adoption, Wu and Wang (2005) found that convenience and time saving is a critical motivation for consumers to engage in mobile commerce. Additionally, Luo, Li, Zhang, and Shim (2010) posit that the growth and popularity of mobile banking is a result of the convenience users enjoy, thus saving them time and effort. Users can simply conduct banking transactions at the convenience of their homes or offices without necessarily travelling to the banks. Similarly, when users perceive that using mobile money will increase their convenience in banking transactions, its adoption will be high. This leads to the following hypothesis:

H2: Convenient mobile money platform will positively influence user experience.

Cost

Marketing literature usually conceptualizes the monetary cost or price of a product with the quality of that product or service to determine its value to consumers (Venkatesh, Thong and Xu, 2012). Generally, it is perceived, the more expensive products are of higher quality than the less expensive ones. As a result, firms usually adopt different pricing strategies which usually appeal to different classes of customers. In the information technology literature, cost, sometimes modelled as price, it is usually evaluated based on the monetary value the user places on the piece of the technology. Thus, when the cost is perceived as high, it is expected to have more value and quality than a piece of technology that is less costly. In mobile commerce adoption, the cost is a significant factor which was found to have a negative effect on behavioural intention to adopt the technology (Wu and Wang, 2005). Similarly, it is likely a significant factor in adopting mobile money, implying that users will develop a negative response to its adoption when the cost of its usage is considered high. Thus, the following hypothesis is proposed:

H3: The cost of using mobile money services will negatively influence user experience.

The Unified Theory of Acceptance and Use of Technology (UTAUT)

The UTAUT theory unified prior existing information technology adoption models and not only identifying the individual-level factors that underpin technology adoption but also uniquely underscores the antecedents that either constrain or support the influence of these factors (Venkatesh and Zhang, 2010). It postulates

that performance expectancy, effort expectancy, social influence and facilitating conditions are the triggers of technology adoption. Furthermore, the theory adds that education, age, and income could also moderate how these factors influence individuals. Though not as popular as the original technology acceptance model (TAM), the application of UTAUT in different countries and contexts has assumed a significant proportion. For instance, it was applied in a study of e-government services in Kuwait (AlAwadhi and Morris, 2008), health information technology in Thailand (Kijsanayotin, Pannarunothai and Speedie 2009) and most importantly, studies on mobile information systems (Min, Ji, and Qu, 2008; Zhou, Lu and Wang, 2010; Yu, 2012). While there are other important constructs in the UTAUT theory, a critical review of relevant literature in mobile banking underpins the extensive use of performance expectancy, effort expectancy, and social influence. Accordingly, our study will be limited to these three. Therefore, Carlsson et al. (2006) found that performance expectancy and effort expectancy were the main determinants of mobile services usage in Finland. Interestingly, however, Zhou, Lu and Wang (2010) contend that mobile banking adoption in China was significantly influenced by performance expectancy, social influence and facilitating conditions, as effort expectancy exerted insignificant influence. Furthermore, by integrating the UTAUT, the Task Technology Fit model (TTF) and Initial Trust Model (ITM), Portuguese mobile banking users reported that initial trust in mobile banking is formed when users identify performance gains from the platform. Thus, to optimize trust in the mobile banking platform, practitioners should ensure that users derive performance gains from the services of the mobile banking platform. However, another study found that as important as these variables are in mobile banking adoption, the individual's behavioural intention is the most significant determinant in mobile banking adoption (Yu, 2012). Thus, the following hypotheses are proposed:

H4: Performance expectancy of mobile money will positively influence user experience.

H5: Social influence will positively influence user satisfaction of mobile money.

H6: Effort Expectancy will positively influence user satisfaction of mobile money.

Image

Service provider's image has long been identified as having a strong influence on intention and continuous patronage (Jin, Lee, and Lee, 2015). To this end, firms try to deliver consistent quality products and services to maintain a good image with its customers. As a matter of fact, the image of a firm is not determined by the firm's communications efforts through advertising and new media platforms, but through the experience of customers during service encounters. In the mobile money context,

since financial services are adopted with caution, users may wish to determine the corporate image of the service provider before they adopt the service. Thus, those who have performed well through good services conjure the positive image and are more patronized than those relatively unpopular. Additionally, customer determination of the service quality which is a yardstick for performance is underpinned by speed, interactivity, security, and promptness to answer queries. The study thus argues that image is a significant factor in determining users' perception of satisfaction with mobile banking services. Thus, the following hypothesis is proposed:

H7: Image of mobile money operator will positively influence user satisfaction.

Trust-Technology Acceptance Model

Trust is a critical factor in an exchange relationship. As a matter of fact, the ubiquitous diffusion of information systems underscores the importance of trust in their adoption. As a multi-faceted construct that applies to different disciplines, trust has been defined based on disciplinary trajectories. Thus, Luo, Li, Zhang and Shim (2010) identified three dimensions of trust in relation to new information technology adoption: disposition to trust, structural assurance, and trust belief. They defined disposition to trust as "a general inclination in which people show faith or belief in humanity and adopt a trusting stance toward others" (p.224). Trust in financial systems-related information technology is important because users usually form security perceptions on the IT and when that perception is confirmed as secure, the trust will be developed towards it (Carlos, José, and José, 2009). In terms of mobile banking, initial trust, security, and privacy are very crucial in their adoption. Accordingly, Kim, Shin and Lee (2009) argue that trust-inducing forces: structural assurances, perceived benefits, personal propensity and firm reputation underlie the extent of mobile banking. Interestingly, firm reputation was not found to attract people, but more attractive forces were the perception of initial trust and relative benefits to the users. Within the trust framework, users trust is likely to increase if they perceive that security and privacy in the mobile banking platform are guaranteed. Thus, the following hypotheses are proposed:

H8: Trusted mobile money platform will positively influence user satisfaction of mobile money.
H9: Security of mobile money platform will positively influence user satisfaction of mobile money.
H10: Privacy confidence of mobile money platform will positively influence user satisfaction.

User Experience

User experience as a concept draws from both psychology, sociology, management and information systems (Olaleye, Sanusi, and Oyelere, 2017), thus, very difficult to proffer a concise definition. However, it has generally viewed as the perception an individual form from using or anticipated the use of a product, service or an information system (Law, 2011). It is a critical determinant of the adoption, use and continuous use of a piece of information technology. Those who are knowledgeable about the piece of the technology encounter less difficulty in its use. Conversely, new users usually encounter more difficult times using a piece of technology. Accordingly, Karahanna, Straub, and Chervany (1999) argue that at the initial adoption phase of a technology, subjective norm and affect play a key role in user experience, however, their influence wanes over time as the user gains more experience on the technology. In terms of mobile banking, Oliveira, Faria, Thomas, and Popovič (2014) posit user experience will be optimized if banks and relevant bodies highlight the benefits of its adoption. Thus, the following hypothesis is proposed:

H11: User experience of mobile money will positively influence user satisfaction.

User Satisfaction

Satisfaction is an important construct in both marketing and information systems literature because it leads to patronage or continuous usage of a piece of information systems. As a result, marketing practitioners make all necessary provisions to reduce unpleasant experiences that may arise in the consumption process. Equally, information systems are to provide utmost and pleasant experiences to the user. Thus, once a user is satisfied, he/she is likely to continue with the usage of the system. However, satisfaction varies across time and contexts. According to Mahmood, Burn, Gemoets, and Jacquez (2000), user's background, user experience, gender and degree of involvement all play a significant impact on the level of satisfaction which is derived from a piece of information technology. Additionally, in a study of mobile banking adoption among Korean users, Lee and Chung, (2009) contend that interface design quality has no effect on customer satisfaction, but customer satisfaction is affected by system and information quality.

RESEARCH METHODOLOGY AND SAMPLE

To accentuate objective measurements, the study employs quantitative methods to explain mobile money phenomenon in Nigeria. Ten independent variables were used to

predict two dependent variables and later commingle the two models. The first model considered mobile money user experience and adopted system anxiety, convenience, cost and performance expectancy as the predictors while the second model dwells on mobile money satisfaction and used social influence, effort expectancy, image, trust, security and privacy to predict mobile money user's satisfaction. To get a deeper insight into mobile money, user experience was used as an antecedent of mobile money satisfaction. The target of this study is the unbanked and underbanked that constitute the resident of urban and the rural dwellers acclaimed to be mobile money users in Nigeria. The study adopts measurement from the extant studies (see Table 1 for details) and employ 7-Point Likert Scales with a minimum of scale 1 as strongly disagree and a maximum of scale 7 as strongly agree. Apart from the Likert Scales, the study examines the in-depth demographic profile of the mobile money users.

The survey for the study was administered between 06.02.2017 to 09.03.2017 in the South West part of Nigeria and the questionnaire was designed to capture the knowledge, experience and the satisfaction of the mobile money users. 250 copies of the questionnaire were administered offline and retrieved 163 copies back with a response rate of 60.4% which is above average. 12 questionnaires were excluded during the data cleaning process due to their inconsistency. The participants of the mobile money study (n=151) consist of 81 (54%) male, 70 (46%) female, single 81 (54%), married 70 (46%), Yoruba 118 (78%), Igbo 16 (10%) Hausa 10 (7%) other tribes 7 (5%), bachelor's degree 85 (56%), high school/diploma 45 (30%), master's degree 17 (11%), doctoral degree 3 (2%), no formal education 1 (1%), students 85 (56%) public sector 18 (12%) teaching, 14 (9%) private sector, 14 (9%) self-employed 13 (9%) researchers 3 (2%) armed forces 2 (1%) other occupations 2 (1%), Less than ₦100000 109 (72%), ₦100000-₦200000 26 (17%), ₦200001-₦300000 9 (6%), ₦300001-₦400000 5 (3%).

Data Analysis and Results

To analyze the mobile money data, the study employed three steps consecutively. The data were examined to take care of outliers, unengaged responses, and missing data to pave the way for confirmatory factor analysis (CFA). The study runs partial least square-structural equation modelling (PLS-SEM) for convergent validity to ensure correlation between the study items and its parent factor and discriminant validity to examine if any of the study items correlate highly with another variable other than its parent factor. The study used SPSS 24 for reliability test of Cronbach alpha and varimax rotation for Exploratory Maximum Likelihood factor analysis to explore the dimension of the constructs. The study retained the items that load higher than 4.0 and excluded the items with low loadings (Sundaram 2016). The higher factor loading has a better explanatory power than the factor loadings that

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Table 1. Overview of items measure

Constructs and Measurement Items

System Anxiety
It scares me to think that I could cause to destroy a large amount of information by hitting the wrong key during mobile money transfer.
I hesitate to use mobile money platform for fear of making mistakes that I cannot correct.
M-money is somewhat intimidating to me.
I am scared of losing a lot of information by using mobile money system.

Convenience
M-money makes money transfer easy
M-money makes transactions convenient
I believe m-money reduces turnaround time to transfer money
M-money system reduces stress for me

Cost
M-money system enables the transfer of money at low cost
Using mobile money services is cost burden to me
The mobile device setup for using mobile money charges me a lot of money
The cost of using mobile money is higher than using other banking channels

Performance Expectancy
Using mobile money would save my time
I can use mobile money in anyplace
I would find mobile money useful
Mobile money is a useful technology for me.

Social Influence
People who are important to me think that I should use mobile money
People who are familiar with me think that I should use mobile money
People who influence my behavior think that I should use mobile money
Most people surrounding me use mobile money

Effort Expectancy
Learning to use mobile money is easy for me
Becoming skillful at using mobile money devices is easy for me
Interaction with mobile money platform is easy for me
Mobile money system would be flexible for me to utilize.

Image
If I use mobile money system I will have more prestige than those who do not.
If I use mobile money system I will have a high profile.
Mobile money will be a status symbol for me.
Mobile money will enhance my self-importance.

Trust
M-money is a trustworthy service
I can count on m-money to protect my money
I can count on m-money to transfer my money safely
The m-money can be relied on to keep its promises

Security
I feel comfortable that mobile money technological structures adequately protect me from problems.
I feel comfortable that encryption and other technological advances of mobile money systems make it safe for me to do transaction on the Internet.
Mobile money systems provide a safe environment to transfer money.
Secured mobile money platform allay me fear of cyber theft

Privacy
I am concerned that using mobile money collects too much personal information about me.
I am concerned about threats to my personal privacy when using the m-money.
I believe that mobile money vendor will protect my information from unauthorized person.
I believe that mobile money vendor will not sell my information

User Experience
I believe m-money is easy to use
I believe m-money is simple and understandable for performing transactions
I believe that the use of m-money is trouble-free
I believe mobile money system is fast to use for transactions

User Satisfaction
I have a favorable experience using m-money
I believe that the use of m-money is beneficial
I like the idea of transferring money through m-money platform
I am satisfied with mobile money features.

The items of User Experience (UE), User Satisfaction (US) and Convenience (CON) were adopted from the existing TAM studies (Davis, 1989; Wu, 2011; Igbaria *et al.*, 1997; Venkatesh *et al.*, 2003; Venkatesh and Davis, 2000; López-Nicolás *et al.*, 2008, Chauhan, 2015). Items pertaining to trust (TR) were adapted from Fogel and Nehmad (2009) and Chauhan (2015), Image (IM) adapted from Fain and Roberts (1997), Kuisma et al. (2007) and Laukkanen and Kiviniemi, (2010). Cost (CT) and Effort Expectancy (EE), Performance Expectancy (PE), Social influence (SI) adopted from Luarn and Lin [2005],, Venkatesh and Zhang [2010], Foon and Fah [2011], Sripalawat, Thongmak, and Ngramyarn [2011], Security (SR) adopted from Arun, Brown, and Tang (2009), and Privacy (PR) was adopted from Awad, Farag, and Krishnan (2006).
*Note: Items of the constructs adopted from the corresponding authors
*Exchange rate: ₦1 = $0.0028

Figure 2. Integrated conceptual framework of mobile money
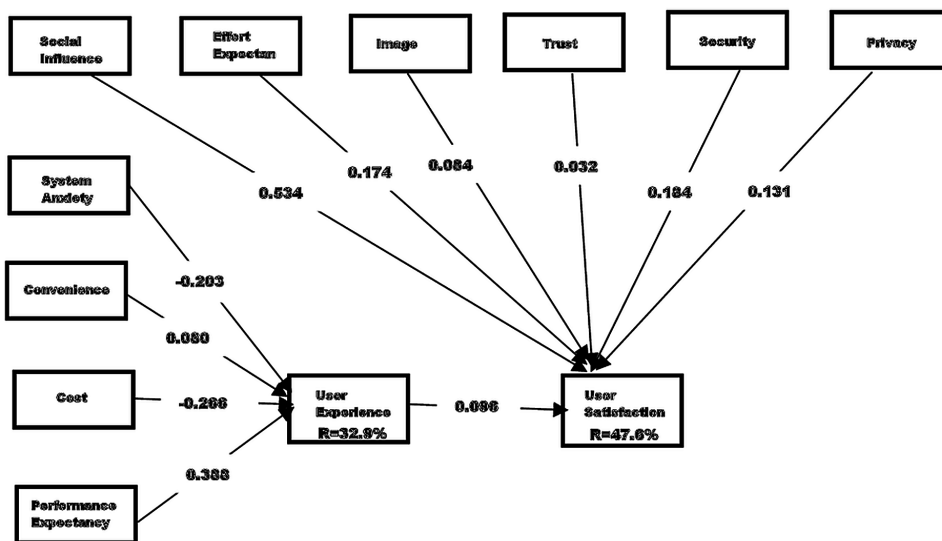
below 0.30 (See Table 2). SmartPLS statistics software is gaining popularity in different research domain most especially in marketing and the behavioural sciences (Lu, Kwan, Thomas, and Cedzynski 2011). SmartPLS was considered fit for this study because of its robustness to handle data small sample size and sensitive model (Ringle, Sarstedt, and Straub 2012). Table 2 shows the result of the data analysis and the factor loadings with a minimum of 0.46 and maximum of 0.97. The composite reliability (CR) and average variance extracted (AVE) meet the threshold

Table 2. Overall CFA for the measurement model

Constructs and Measurement Items	Standardized Loadings	Mean	SD	CA	CR	AVE
System Anxiety						
SA1	0.84	3.45	2.02	0.79	0.67	0.51
SA3	0.56	3.37	1.67	0.78		
Convenience						
CON3	0.93	5.40	1.43	0.78	0.75	0.61
CON4	0.59	4.52	1.59	0.77		
COST						
CT1	0.93	5.53	1.40	0.78	0.68	0.54
CT4	0.47	3.89	1.63	0.78		

Table 2. Continued

Constructs and Measurement Items	Standardized Loadings	Mean	SD	CA	CR	AVE
Performance Expectancy						
PE1	0.70	5.23	1.48	0.77	0.78	0.64
PE4	0.89	5.30	1.53	0.77		
Image						
IMG3	0.53	2.60	1.55	0.78	0.71	0.57
IMG4	0.93	3.07	1.70	0.78		
Social Influence						
SI1	0.96	5.02	1.33	0.78	0.76	0.62
SI2	0.57	5.58	1.14	0.78		
Effort Expectancy						
EE1	0.72	4.29	1.80	0.78	0.85	0.59
EE2	0.91	4.81	1.56	0.78		
EE3	0.70	4.65	1.84	0.78		
EE4	0.75	4.70	1.67	0.78		
Trust						
TR1	0.70	5.38	1.45	0.78	0.88	0.65
TR2	0.71	4.95	1.73	0.78		
TR3	0.91	4.90	1.50	0.77		
TR4	0.89	4.75	1.44	0.77		
Security						
SR1	0.81	4.91	1.46	0.78	0.83	0.56
SR2	0.65	5.17	1.40	0.78		
SR3	0.85	4.46	1.66	0.77		
SR4	0.64	5.09	1.43	0.78		
Privacy						
PR3	0.82	5.17	1.44	0.78	0.70	0.54
PR4	0.64	4.41	1.66	0.78		
User Experience						
UE2	0.88	4.77	1.75	0.77	0.75	0.61
UE3	0.66	5.23	1.70	0.78		
User Satisfaction						
US3	0.46	5.74	1.19	0.78	0.71	0.57
US4	0.97	4.98	1.45	0.77		

of 0.7 and 0.5 but CR for cost was marginal. The Cronbach's alpha for the items all reached the threshold of 0.7. Table 5 reveals the latent variables correlations. Table 4 exhibits the path coefficients of the constructs. System anxiety of mobile money platform will negatively influence user experience, that is, SA → UE β = .20 and t = 2.77, the path SA → UE is significant at (p<0.01) and the cost of using mobile money services will negatively influence the user's experience COST →
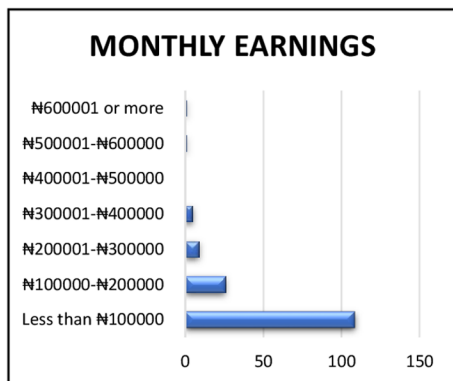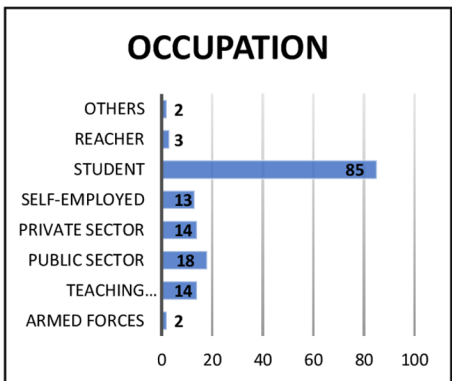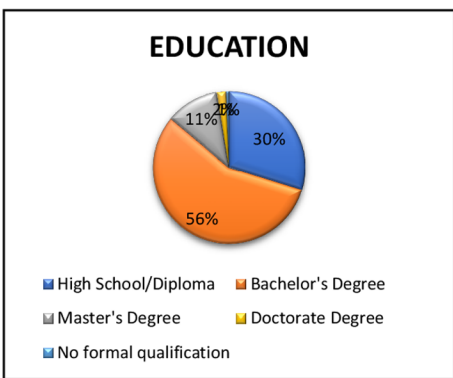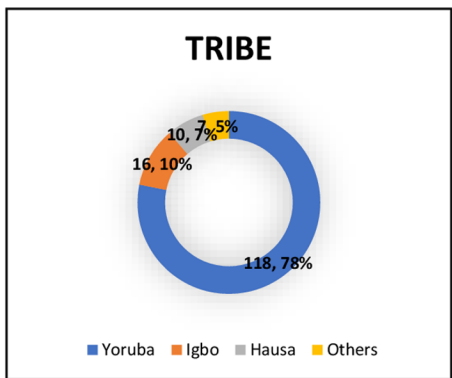
Table 3. Latent variable correlations

	CON	COST	EE	IMG	PE	PR	SA	SI	SR	TR	UE	US
CON	1											
COST	0,1752	1										
EE	0,3228	0,0865	1									
IMG	0,0794	0,0391	0,1408	1								
PE	0,647	0,138	0,2726	0,0655	1							
PR	0,1378	0,0728	0,1517	0,035	0,1923	1						
SA	0,0259	0,049	0,0337	0,138	0,0217	-0,0883	1					
SI	0,0841	-0,1218	0,0713	0,158	0,2178	0,15	0,0622	1				
SR	0,0244	0,117	0,076	0,043	0,2083	0,0087	0,0039	0,0399	1			
TR	0,0103	0,0944	0,2167	0,077	0,0922	0,1868	-0,1176	-0,0731	0,2086	1		
UE	0,3762	0,3037	0,1533	0,0934	0,4758	-0,0478	0,2249	0,0424	0,1022	0,0941	1	
US	0,2004	0,0356	0,2793	0,2166	0,5286	0,2428	-0,0671	0,588	0,2401	0,1091	0,169	1

Table 4. Standardized path coefficients and corresponding hypothesis results

Hypothesis	Path	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	Beta	T-Test	Hypothesis Confirmed
H1	SA → UE	-0.204	0.073	0.073	0.20	2.77	Yes
H2	CON → UE	0.094	0.109	0.109	0.08	0.73	No
H3	COST → UE	-0.226	0.064	0.064	0.23	3.54	Yes
H4	PE → UE	0.386	0.105	0.105	0.38	3.71	Yes
H5	SI → US	0.526	0.078	0.078	0.54	6.81	Yes
H6	EE → US	0.179	0.074	0.074	0.18	2.34	Yes
H7	IMG → US	0.086	0.061	0.061	0.09	1.37	No
H8	TR → US	0.036	0.078	0.078	0.03	0.42	No
H9	SR → US	0.193	0.062	0.062	0.18	2.98	Yes
H10	PR → US	0.130	0.073	0.073	0.14	1.78	No
H11	UE → US	0.091	0.067	0.067	0.09	1.44	No

Figure 3. Descriptive statistics

GENDER
- Male
- Female

Female 46%
Male 54%

MARITAL STATUS

Single: 81
Married: 70

TRIBE

- Yoruba
- Igbo
- Hausa
- Others

10, 7%
5%
16, 10%
118, 78%

EDUCATION

- High School/Diploma
- Bachelor's Degree
- Master's Degree
- Doctorate Degree
- No formal qualification

30%
56%
11%
2%

OCCUPATION

- OTHERS: 2
- REACHER: 3
- STUDENT: 85
- SELF-EMPLOYED: 13
- PRIVATE SECTOR: 14
- PUBLIC SECTOR: 18
- TEACHING…: 14
- ARMED FORCES: 2

MONTHLY EARNINGS

- ₦600001 or more
- ₦500001-₦600000
- ₦400001-₦500000
- ₦300001-₦400000
- ₦200001-₦300000
- ₦100000-₦200000
- Less than ₦100000

UE $\beta = 0.23$ and t = 3.54 at (p<0.0005). Performance expectancy of mobile money will positively influence the user's experience PE $\rightarrow$ UE β = .38 and t = 3.71 at (p<0.0003) and social influence will positively influence the user's satisfaction of mobile money SI $\rightarrow$ US $\beta = 0.54$ and t = 6.81 at (p<0.05). Effort expectancy will positively influence the user's satisfaction of mobile money EE $\rightarrow$ US $\beta = 0.18$ and t = 2.34 at (p<0.02) and security of mobile money platform will positively influence the user's satisfaction of mobile money SR $\rightarrow$ US $\beta = 0.18$ and t = 2.98 at (p<0.003). Perception of performance expectancy (3.71) is the highest predictor of user experience while cost (3.54) intermediate and system anxiety (2.77) is the lowest predictor of user experience. On the other hand, social influence is the highest predictor of user satisfaction of mobile money (6.81) and effort expectancy is the lowest predictor of user satisfaction (2.34). Mobile money user satisfaction records the highest variance and explains (R^2=47.6%) while user experience of the mobile money user explains (R^2=32.9%). 52.4% and 67.1% variance of the mobile money model could not be explained.

DISCUSSION AND IMPLICATION

The main objective of this study is to find out the enablers of mobile money in Nigeria rural and urban areas and the inhibiting factors of mobile money penetration and advancement. The study was limited to three constructs from UTAUT theory namely performance expectancy, effort expectancy and social influence as literature review reveals its extensive use and shows mobile banking adoption is influenced by the three constructs (Carlsson et al., 2006; Zhou, Lu, and Wang, 2010). Other constructs were incorporated into the study such as convenience, cost, image, privacy, system anxiety, security, trust, user experience and user satisfaction to increase perceptiveness of the enablers and inhibitors of mobile money in Nigeria. This study has filled a vacuum in the extant studies in developing countries by using integrated models by incorporating UTAUT (performance expectancy, effort expectancy, and social influence), convenience, cost, image, privacy, system anxiety, security, trust, user experience with user satisfaction intent. The result reveals that out of the eleven hypotheses tested six were accepted and five rejected.

The results reveal the enablers of mobile money which are the social influence, performance expectancy, security and effort expectancy, and inhibitors such as system anxiety and cost. Privacy, trust, image, and convenience were not found significant in this study. Social influence, performance expectancy and effort expectancy variables adapted from the UTAUT model have considerable influence on mobile money in Nigeria as their influence has been established in previous

studies (Venkatesh, et al., 2003; Carlsson et al., 2006; Zhou, Lu, and Wang, 2010). This research provides several contributions. First, social influence had a positive association with user satisfaction and the highest predictor of user satisfaction. This is an indication that the influence of other people like family members or friends motivates the satisfaction of mobile money users. Second, performance expectancy positively impacts user experience and emphasis on the outcome is that the rate at which an individual believes that using the system will help him or her to attain gains in performance or will be more useful than existing form influences user experience. Third, cost influences user experience, this reveals cost as a significant factor in mobile money adoption, implying that users will develop a negative response to its adoption when the cost of its usage is considered high and as well adopt it when the cost is considered low. Again, security affects user satisfaction which suggests that security concerns bothering on cyber theft, unsafe environment for the transaction or technological structure of mobile money influence the satisfaction of users. Furthermore, system anxiety influences user experience, that is, the negative effect that may stir up phobia during intention to use or in the process of interacting with computers of any kind will affect the experience of using mobile money. Effort expectancy finally impacts user satisfaction, and it reveals the dependence of Effort expectancy on user satisfaction. This depicts that the user of mobile money will be satisfied with the usage of the system if the system is easy to use.

Managerially, this study has two implications. As evident in the study that social influence is found to be the most influential predictor of user satisfaction, it is, therefore, the understanding of the possibilities of third parties to influence the decision of adopting mobile money. In this respect, banks could develop marketing campaigns illustrating the benefits of mobile banking compared to other ways of using the financial services (Laukkanen, Sinkkonen, Kivijärvi and Laukkanen, 2007). The output of the study informs the mobile money stakeholders that security policy awareness and functional policy is profitable to bring about user satisfaction of the system. This will encourage the users to use mobile money without the fear of security concerns while intending to do a transaction or during transactions. The result of this study gives a technical solution to mobile money providers in Nigeria. The mobile money providers need to galvanize their existing mobile money platform and come up with a user experience (UX) design that will increase mobile money user's satisfaction. The UX design should be simple to use and free from technical jargons likely to confuse the mobile money users. Inculcating gratification elements such as social media that will pave the way for socialization and interaction will increase social influence in a communal setting of Nigeria. Introduction of Public Key Infrastructure (PKI) for encryption and decryption will alleviate insecurity of the mobile money users.

LIMITATIONS AND FUTURE RESEARCH

Although this study provides some insights, it is not without limitations. The study shows the difference among the tribes which the respondents belong to in percentage, and this constitutes a limitation to this study. The Yoruba tribe has 78% and other tribes in the country represent 22%. This result shows that the perception of the tribes is not congruent. It will be interesting if the future research could investigate enablers of mobile money and the inhibiting factors of mobile money in Nigeria rural and urban areas based on various tribes as the country houses over 256 tribes. The research should also extend to segment profiling and consider more members of the society as against student's dominant in the sample. The future study can probably consider using gender, age, experience and voluntariness of use as moderating variable regarding user experience and satisfaction as Carlsson et al. (2006) emphasized the mediators. Future researchers should evaluate the introduction of mobile money considering the underbanked and unbanked using mixed method. The combination of the quantitative and qualitative methodology will enrich the study and get deep insight from rural dwellers and urban of the unbanked and underbanked.

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