Factors that Influence the Acceptance of Mobile Money in Nigeria

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Abstract- *Availability of Mobile phones creates opportunities for banking institutions to introduce new services. Among the latest services in banking institutions in Nigeria is mobile money. Thus, the purpose of this study is an attempt to identify the underlying factors that influence the mobile money acceptance in South East of Nigeria. This paper extends the applicability of the Technology Acceptance Model (TAM) with other constructs, like ''perceived credibility (PC)'', the ''amount of information about mobile money (AIMCs)'', "perceived financial cost (PFC)", and ''perceived expressiveness (PE)'' to study the intention to accept mobile money. Data were collected from 314 bank customers in South-east of Nigeria, and was analyzed using the partial least square structural equation modelling technique. The result of hypotheses testing confirmed that perceived ease of use, perceived financial cost, and Amount of information about mobile money are the important influencer for the intentions to accept mobile money. However, perceived usefulness, perceived credibility, perceived expressiveness and self efficacy are not important in predicting the intentions of south-east customers to accept mobile money. This study provides new information about an emerging market and technology to the practitioners, government and academics. The study extends the understanding of TAM to newly emerging contexts such as the mobile money in South east of Nigeria.*

Keywords- *Acceptance; Mobile Money; TAM; South East of Nigeria*

1. INTRODUCTION

Mobile money is one of the financial services that are offered through mobile phones (Jenkins, 2008)[47]. According to Ignacio and Dan (2010)[45] mobile money was first developed in Kenya by mobile phone operator, Vodafone, and was launched commercially by its Kenyan affiliate Safaricom in March 2007. Arguably, Mobile financial services are among the most promising mobile applications in the developing world due to its ease of operation, and Donovan (2012)[29] state that Mobile money transforms nation's economy, as it is accepted across commerce, health care, agriculture, and other sectors. The World Bank Group is well positioned to support the growth of mobile money, and the industry has grown significantly in size and scope since the First Mobile Money Summit held in May 2008 in Cairo, Egypt (MMS 2009)[62]. Furthermore, Diniz, Albuquerque and Cernev, (2011)[26] posit that Financial services that are provided through mobile phone technology have multiple configurations, goals, and characteristics, which distinguished it from another. They went further to state that the differences depend on the combination of agents, technologies and objectives; if they have banking features, they are called mobile banking; if they have transaction payment features, they are recognized as mobile payments; and if they replicate the concept of money with digital features, then they are called mobile money. Therefore, mobile money, which is the emphasis of this paper, is money with digital features.

The development in information technology in recent age has forced many banks and financial operators to upgrade with different innovative products, which differentiate and makes access to financial services easier. Some of these innovations are; Automated Teller Machine (ATM), online Internet Banking, Mobile Banking, Mobile Payment and recently Mobile Money. The cashless programme of Central Bank of Nigeria (CBN) is designed to reduce the circulation of money in the country by enabling people pay for goods and services without need for cash (Ugwu and Epiahe 2014)[91]. This policy has created some concern about mobile money application in Nigeria. Phillips consulting ltd (2013)[74] posits that the provision of financial services through mobile phone are efficient and effective means of including the large number of population that do not have formal bank account into banking services. Thus, it will assist in boosting the domestic savings and the country's revenue. Equally, the World Bank president (July 2007 – June 2012), Robert Zoellick said that providing financial services to the 2.5 billion people who are unbanked could boost economic growth and opportunity for the world's poor (MB 2012).

According to MMS (2009)[62], FSD Kenya found that four out of five M-PESA users believe that not having access to M-PESA's services would have a "large negative impact" on their lives. It was further posited that users M-PESA see it as being faster (98%), more convenient (97%), and more secure (98%) than other methods that are often use in sending or receiving money.

Equally, in Philippines, CGAP found that approximately 90% of mobile money users view their money to be safe and would recommend the services to family and friends (see MMS 2009)[62].

Interestingly, the Global System of Mobile communication, otherwise known as GSM was introduced into the Nigerian market in the year 2001 and its demand has rapidly expanded (NCC 2008)[68]. Report by the NCC (2013)[67] went further to state that Nigeria has the highest number of mobile phone users in Africa - more than 93 million, representing 16% of the continent's total mobile users. One might argue that Nigeria is a good market for mobile money operators, since Mobile phones are increasingly becoming an essential part of the lives of the average Nigerian and other developing countries of the world (Medhi, Ratan, & Toyama, 2009)[61]. Although, Agwu and Carter (2014) [5]Findings reveal that Africa is an extremely fast-growing mobile market, yet few Nigerians are making innovative use of mobile money technology to meet the need for a cashless system (Phillips consulting Ltd 2013[74]; Ugwu and Epiahe 2014)[91]. Phillips consulting Ltd (2013)[74] shows that majority of survey respondents in Nigeria (over 60%) know about mobile money but of the total number of respondents who know about mobile money, only 29% are registered with any of the mobile money operators (MMOs) while the remaining 71% are not. Phillips consulting Ltd (2013)[74] went further to state that in 2010, 6% of the survey respondents registered with an MMO (mobile money operator), 14% in 2011, 40% in 2012 and another 40% in 2013. This shows that there has been an increase in acceptance till 2012 and 2013.

The mobile money operation in Nigeria seems to be troubled by weaknesses, especially in South east of Nigeria. Most of the respondents registered with mobile money operators live in Oyo state (Ibadan), while the registered minority lives in Abia state (Phillips consulting ltd 2013)[74], one of the States in South East Nigeria. This rate of Mobil Money acceptance in Nigeria, especially in South East, has crop up numerous questions that prompted this research. Many researchers have applied variety of methods and frameworks to study mobile money (Peruta 2017[73]; Narteh, Mahmoud & Amoh 2017[66]; Waitara, Waititu, & Wanjoya, 2015[97] Tobbin & Kowornu, 2011)[90], therefore, making it difficult to compare the results of different studies and the progress in adoption theory. The objective of the present study is to examine the factors that influence the acceptance of mobile money in south east of Nigeria. In order to deal with the above issues we used the extended Technology Acceptance Model (TAM). The rest of the paper is divided into brief Literature review, Theoretical background, Research Methodology, Result & Discussion, and Conclusion.

2. LITERATURE REVIEW

Literature has shown that Mobile financial services have become the most promising mobile applications in the developing world since the advent of information age. According to Aker, Boumnijel, McClelland, and Niall (2011)[11], more than 110 money mobile systems have been deployed, with more than 40 million users. For example, M-PESA, the most well-known system, started in Kenya and is now operational in more than six countries. M-PESA has more than 20 million users who transferred $500 million a month during 2011 Aker at el (2011)[11]. Therefore, the presence of mobile phones in Nigeria environment should be an avenue for the introduction of mobile money, which will boost economic growth. Although, Phillips consulting ltd (2013)[74] stated that respondents who are not registered with any MMO were because of; lack of information (29%), safety issues/concern with security of account information (27%), reliability issues/concern with effective transaction processing (23%) and a lack of interest/need for the service (17%). Other reasons they gave for non-usage of mobile money include "Problems with network service providers" and "Insufficient funds to warrant use" but our study looked at factors from the developed theoretical perspective. Literature on the acceptance of mobile money in Nigeria is very scanty and no study has been conducted in Nigeria with regard to the acceptance of mobile money using technology acceptance model. Most of the researchers concentrate on adoption of mobile or internet banking. Few studies on mobile money highlighted inconsistence factors that influence the adoption.

A recent research, Peruta (2017)[73] investigated the characteristics of countries sharing the same levels of adoption of mobile money services and comparing the mobile money adoption levels in respect to financial inclusion objective. The finding shows that adoption of mobile money requires prior knowledge and experience of such services. Therefore, Mobile Money Unbanked (MMU) service providers should deploy wide-ranging network of agents in order to raise awareness and educate people about mobile money (McKay & Pickens 2010; Flaming, McKay, & Pickens 2011). Therefore, MMU service provider should license and delegate local agents to enables them educate the local population and promote mobile money services within a climate of trust and confidence. Peruta (2017)[73] equally show the impact of banking system in the operation of mobile money in 2011 and 2014 in Kenya and Tanzania, he posits that Kenya records a higher level of adoption of mobile money than Tanzania due to greater efficiency of the Kenyan banking system. That shows that mobile money may not achieve its objective of financial inclusion in rural areas that are suffering lack of banking access. Mobile money suppose to provide an extended banking solution to all, especially the unbanked in rural areas (Alexandre, Mas and Radcliffe 2010), but mobile money operators may not

manage their cash and provide quality service, in absents of appropriate and available banking infrastructure. Similarly, Peruta (2017) [73]found that mobile money require relatively formal banking system, contrary to the known objective of mobile money 'banking beyond branches'. Interestingly, the scope of this work covers where there is formal banking system.

Also, Narteh, Mahmoud and Amoh (2017)[66] assess the influence of eight exogenous variables (Perceived usefulness, Perceived Ease of Use, Social influence, relative advantage, perceived complexity, Perceived risk, Perceived cost of use and perceived trust) on the Behavioural Intentions of users of mobile money services in Ghana. Narteh, Mahmoud and Amoh (2017)[66] found that perceived usefulness, Perceived Ease of Use, perceived trust, Perceived Cost of Use and Social Influence are the factors that significantly lead to the adoption of mobile money services. Also, the model show that about 65% of factors that influences customers to adopt mobile money services are explained by the exogenous variables tested in the study. Similarly, Tobbin and Kowornu, (2011)[90] used structural equation modeling with AMOS 18, and found that perceived ease of use, perceived usefulness, Perceived Risk and Perceived Trust as the key determinants of behavioral intention. Also, Waitara, Waititu, and Wanjoya (2015)[97] found that Performance Expectancy, Effort Expectancy and Social Influence have significant influence on the use of Mobile Money Transfer service in Kenya, while Facilitating Conditions has no significant influence. Based on this finding, Mobile Network Operators should provide necessary knowledge to the users about the mobile money operation and cost implications. They should equally provide the necessary assistance when there are difficulties while using Mobile Money Transfer service.

According to Narteh, Mahmoud and Amoh (2017)[66], mobile money services are used mostly for buying airtime, and receiving and transferring money; paying bills and managing savings are relatively used by fewer respondents. Also, Gutierrez and Choi (2014)[37] posit that mobile money is for sending and receiving money. Therefore this may imply that users of this service do not trust or perceived some risks with the use of mobile money service for managing savings. But, Narteh at el (2017)[66] argue that mobile money should be used for managing savings among the unbanked. Thus, most of the benefits of mobile money, such as convenience of paying for goods and services, payment of utility bills and broader financial inclusion to the unbanked are not fully utilized by the users.

2.1 Theoretical background

Based on previous studies on mobile money acceptance, there are little or no theoretical foundations for the formulations of hypotheses (Peruta 2017[73]; Narteh, Mahmoud & Amoh 2017[66]; Waitara, Waititu, & Wanjoya, 2015[97] Tobbin & Kowornu, 2011)[90].

Therefore theoretical foundation of this work is developed from (Mathieson, Peacock, & Chin, 2001[59]; Davis, 1989[25;] Adams, Nelson, & Todd, 1992[1]; Chin & Todd, 1995[21]; Doll, Hendrickson, & Deng, 1998[27]; Segars & Grover, 1993)[82]. Furthermore, this study examines the acceptance of mobile money in South East of Nigeria with Technology Acceptance Model (TAM) as theoretical foundation. Many scholars have developed different theories in social psychology to study adoption; for example; Theory of Reasoned Action (TRA) by Ajzen and Fishbein,(1980)[9]; Theory of Planned Behaviour (TPB) by Ajzen, (1985)[6], Technology Acceptance Model (TAM) by Davis, (1989) and some many other theories. According to Davis (1989), TAM has been validated as a powerful and parsimonious framework for explaining the acceptance of Information Technology in different context. Davis, (1989)[24] further explained that acceptance of a new technology system is determined by the users' intention to use the system, which is determined by the users' beliefs about the system. The two beliefs are perceived usefulness and perceived ease of use. Researchers have examined the two beliefs of Technology Acceptance Model as instrumental in explaining the difference in the intention to accept information technology. In the view of Davis (1989)[24], Perceived Usefulness (PU) is the extent to which a person believes that using a particular system will improve his or her job performance, while Perceived Ease of Use (PEU) is the extent to which a person believes that using a particular system will be free of effort.

2.1.1 Perceived ease of use and Perceived usefulness

Technology Acceptance Model (TAM) has been used by different Researchers, and they agreed that it is valid in predicting the individual's acceptance of information system (Adams, Nelson, and Todd, 1992[1]; Segars and Grover, 1993[82] Chin and Todd, 1995[21]; Doll, Hendrickson, and Deng, 1998)[27]. However, Moon and Kim, (2001)[65] argue that the TAM's principle constructs (Perceived Usefulness & Perceived Ease of Use) alone do not fully reflect the particular influence on technological acceptance and usage factors that may be consider by users before accepting information technology. Equally, Harrison and Rainer, (1992)[41] state that Individual and environmental differences play a crucial role on the factors that influence acceptance of a technological innovation. Therefore, perceived ease of use and perceived usefulness alone may not fully explain behavioural intentions towards the use of mobile money, this necessitating a search for additional factors that can better predict the acceptance of mobile money through an in depth review of literature.

H1. Perceived ease of use significantly affects South-East bank customers' intention to accept mobile money system.

H2. Perceived usefulness significantly affects South-East bank customers' intention to accept mobile money system.

2.1.2   Perceived self-efficacy

According to Majchrzak and Cotton (1988)[55], Individual and environmental factors play a crucial role in the acceptance of any technological innovation in different disciplines. Many individual factors have been studied, including demographic and situational variables, cognitive variables, and personality-related variables (Zumd, 1979)[101]. However, many researchers have empirically shown significant relationships between individual differences and IT acceptance (Agarwal & Prasad, 1999; Venkatesh, 2000[93]; Venkatesh & Morris, 2000)[96]. Also, Davis, Bagozzi, and Warshaw (1989)[25] posit that one's beliefs about an innovation fully mediate the effects that all other variables in the external environment may have on an individual's use of that innovation. Self-efficacy plays an important role in shaping individuals' feelings and behaviours in an environment. According to Compeau and Higgins (1995)[23], Individuals with high self-efficacy used computers more, derived more enjoyment, and experienced less computer anxiety. Consequently, several variables may have a significant influence on users' acceptance of mobile money. Among variables that influence acceptance of technology, Chau (2001)[19] argued that only perceived self-efficacy can be manipulated by practitioners through promotion and training. However, scholars have confirmed the critical role played by computer self-efficacy in individual acceptance of Information Technology (Chau, 2001[19]; Hong, Thong, Wong, & Tam, 2001[42]; Johnson & Marakas, 2000[48]; Agarwal, Sambamurthy, & Stair, 2000)[4]. Thus, perceived self-efficacy of mobile phone should be an important knowledge resource for users to adopt mobile money.

H3. Perceived self-efficacy significantly affects South-East bank customers' intention to accept mobile money system.

2.1.3   Perceived credibility

According to Gefen, Karahanna and Straub (2003)[35], Trust is an important factor in acceptance of information technology. Many relationships and acceptance of many businesses are based on trust. However, Larzelere and Huston, (1980)[52]; and Doney and Cannon (1997)[28] conceptualised trust as the same as perceived credibility. Also, Ganesan, (1994)[34] sees Perceived credibility as the extent to which one partner believes that the other partner has the required expertise to perform the job effectively and reliably. Furthermore, Ba and Pavlou, (2002)[14] sees Perceived credibility as usually impersonal and relies on reputation, information and economic reasoning. This is to say that trust based on a partner's expertise and reliability focuses on the expectations that the actions of the partner are reliable (Lindskold, 1978)[53]. However, it is more related to one's judgment on the privacy and security issues of the mobile money systems. Consequently, we conceptualise perceived credibility as a new construct to reflect the security and privacy concerning mobile money operation.

H4. Perceived credibility significantly affects South-East bank customers' intention to accept mobile money system.

2.1.4   Amount of information

Scholars have posited that consumers' level of information influence acceptance of emerging technologies (Howard and Moore, 1982[43]; Sathye, 1999[81]; Pikkarainen, Pikkarainen, Karjaluoto & Pahnila, 2004)[75]. Arguably, the level of information that bank customers have about Mobile money will determine the possibility of accepting the system. Hence, Sathye (1999)[81] stated that low awareness of online banking is a major factor causing people not to use online banking. Also, Howard and Moore (1982)[43] reported that consumers must be aware and understand the new products before adoption. Similarly, Pikkarainen, Pikkarainen, Karjaluoto and Pahnila, (2004)[75] found out that information possessed by bank customers has a positive affect over online banking acceptance. Therefore, the importance of knowledge about computer-based technologies is recommendable and can be extended to the mobile money system. Mobile money acceptance in South-East of Nigeria may also relies on information published by banks and distributed to their bank customer.

H5: The amount of information on mobile money service significantly affects South-East bank customers' intention to accept it.

2.1.5   Perceived Expressiveness

According to Amin, Muhammad, Hamid, and Lada (2006)[13], ''Perceived Expressiveness'' was a significant factor on acceptance of SMS banking. Also, Plant (2000) on his research on teenagers, found that teenagers value mobile phones as means of expression and social communication. Similarly, Nysveen, Pedersen, and Thorbjornsen, (2005)[71] posit that ''Perceived Expressiveness'' has a strong direct influence on one's intention to use mobile chat services regardless of gender. Thus, Perceived Expressiveness is an individual's ability to express their emotions or identity (Cassidy, Park, Butovsky, & Braungart, 1992)[18]. These findings suggest that ''Perceived Expressiveness'' may influence the acceptance of mobile money system.

H6. Perceived Expressiveness significantly affects South-East bank customers' behavioural intention to use mobile money.
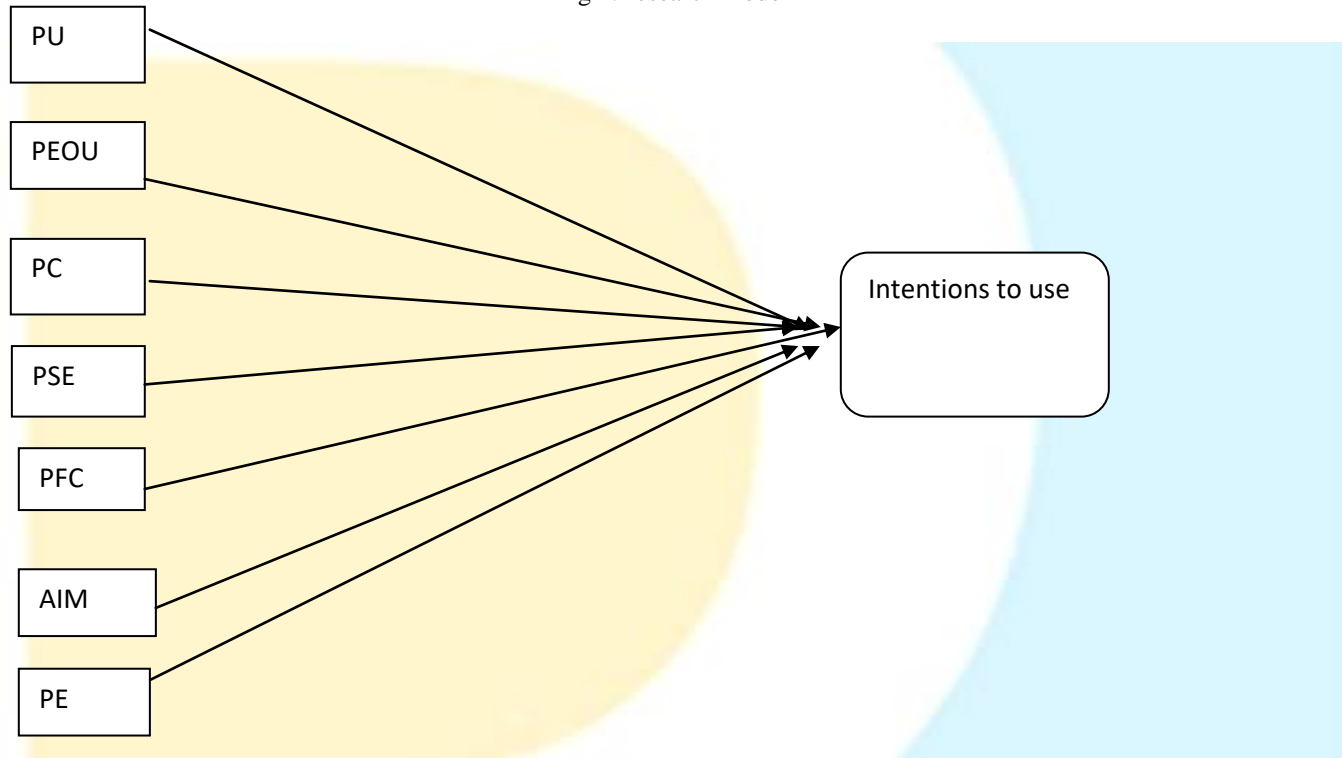
2.1.6   Perceived financial cost

Perceived financial cost involves all those cost of transaction, registration, and purchase of new device for the financial service transactions. Tobbin, (2010)[89] confirms that transactional cost influence behaviour intention to use Mobile Money transfer services. Similarly, mobile banking adoption is highly influence by economic factors (Yang 2009[99]; Huili & Chunfang 2011)[44]. Equally, many other scholars have shown that perceived financial cost will influence the acceptance of mobile banking (Luarn & Lin 2005[54]; Sadi, Azad, & Noorudin 2010[80]; Sripalawat, Thongmak and

Ngramyarn, 2011)[85]. According to Yu (2012)[100], perceived financial cost is the second most important factor in affecting people intention to use mobile banking. Thus, cost of cell phone is critical factor that may hinder people from using mobile money.

H7. Perceived financial cost significantly affects South-East bank customers' behavioural intention to use mobile money.

Fig 1.Research model

Notes: PU, perceived usefulness; PEOU, perceived ease of use; PC, perceived credibility; PSE, perceived self efficacy; PFC, perceived financial cost; AIM, the amount of information about mobile money; PE, perceived expressiveness

3. RESEARCH METHODOLOGY

The instrument used in this study was adapted from previous studies. The research covers customers of banks in South-East of Nigeria; which are made up of five states, Abia, Anambra, Ebonyi, Enugu and Imo. The findings and conclusion of this study was based on information/data collected from the customers of banks in South-East of Nigeria. Where no sampling frame exists, probability sampling techniques may not be used, and Malhotra (2007)[56] suggests the use of a convenience/judgmental sample of about 200 to 400 for attitudes studies. Therefore, sample size of this study was 385. The 385 participants were shared among the capital cities of the five states that made up the South-East of Nigeria, using the percentage of the south-east population of 16,381,729 (Nigerian 2006 census); Anambra State 25.53% of 385 (98 participants), Imo State 24.02% of 385 (92 participants), Enugu state 19.88% of 385 (77 participants), Abia state 17.30% of 385 (67 participants), Ebonyi state 13.27% of 385(51 participants) (see 2006 Nigeria census).

According to Bohmstedt (1970)[17], the content validity of an instrument and the items selected must represent the concept around which generalizations are to be made.

Consequently, the variables selected for the highlighted constructs were adapted from previous studies. Firstly, three Items for "perceived ease of use" and three items for "perceived usefulness" were taken from the previously validated work of Davis, (1989). Secondly, the two items for "behavioral intention" were taken from previous work of Agarwal and Prasad, (1999)[3]. Thirdly, the three items for "perceived self-efficacy" were adapted from the work of Compeau and Higgins (1995)[23]. Fourthly, two items for "Perceived credibility" were adapted from Wang et al. (2003)[98]. Fifthly, three items for "the amount of information on mobile money system" were adapted from Pikkarainen et al., (2004)[75]. Sixthly, two items for "Perceived Expressiveness" were adapted from Nysveen et al., (2005)[71]. Finally, two items for "perceived financial cost" were adapted from Luarn and Lin (2005)[54]. We adapted and moderated all the constructs to suit the study of mobile money acceptance in South east Nigeria.

Likert scales of (1–5), ranging from ''strongly disagree'' to ''strongly agree'' were used for all questions, except for the items measuring perceived self-efficacy, which ranged from ''not at all confident'' to ''totally confident.'' Pre-testing of the instrument was conducted through selected bank consumers, as well as experts in the

online/mobile banking. Bank customers were selected conveniently to collect data by self-administrated questionnaires. Out of 385 questionnaires distributed 314 questionnaires were returned. In this research the data were processed using the PLS-SEM.

4. ANALYSIS OF DATA AND RESULT

This study investigates the factors influencing customers' acceptance of money in south East of Nigeria. Due to the strict measure and assistance of research assistant there were no invalid questionnaires. The response rate indicates a valid response of about 81.6%. The high response rate is as a result of the data collection strategy adopted (self-administration of questionnaire and help of trained research assistance). Out of the validated questionnaire, out of rang was checked, and none was discovered. Questionnaire may be incomplete to varying degree (Malhotra 2007)[56].

(Table I) Reliability Statistics

Cronbach's Alpha	N of Items
.754	20

Therefore, Missing values analysis was conducted and it was discovered that there were no missing value. According to Hair et al (2011)[40], missing value that is on a reasonable limit of less than 5% per indicator will be substituted, while Malhotra (2007) [56]argue that missing response becomes a problem when the proportion of missing responses is more than 10%. Malhotra (2007)[56]

suggests substituting a neutral value or imputing based on respondent's pattern of responses to previous questions, few missing

The inter-item consistency (Cronbach's Alpha) was adopted in this study. An internal consistency estimate of reliability was obtained to determine how consistent scores were across administration. If the scores have a high degree of consistency, then the questionnaire is said to be reliable. Before performing any internal consistency tests of reliability, all items were examined to ensure that the same scale was used and that all necessary reverse-scalings were complete. Cronbach's Alpha was computed for 20 items and the results yielded an alpha of .754. According to Sekaran (2006)[83], the closer the reliability coefficient gets to 1.0, the more precise it is. Therefore, the internal consistency reliability of the measurement used in this study is therefore deemed good and acceptable.

The test for outliers was calculated using Mahalanobis Distance D^2 approach (Pallant 2011)[72] and there were no outliers. Hence, the analysis was conducted using PLS-SEM; it takes care of outlier(s) and non-normal data (Hair, Hult, Ringle, and Sarstedt, 2014)[39]. Equally, in checking for collinearity in the data, VIF and tolerance statistics values are important. The interpretation shows that none of the variables had VIF value above 10 or tolerance value below 0.1 (Janssens, Wijnen, Pelsmacker & Kenhove 2008)[46], there is no multicollinearity in the data set. The lowest tolerance is 0.721 and the highest VIF is 1.387.

Table II Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.300	.354		3.668	.000		
	percievedUse	-.101	.074	-.077	-1.369	.172	.821	1.219
	percievedEase	.237	.067	.204	3.536	.000	.779	1.283
	percievedCredi	-.069	.058	-.068	-1.188	.236	.781	1.281
	percievedFince	.209	.053	.223	3.966	.000	.822	1.217
	percievedExprss	.057	.048	.068	1.204	.230	.819	1.221
	AmoutIfo	.151	.056	.151	2.725	.007	.848	1.179
	PercievSelfEfi	.218	.074	.177	2.952	.003	.721	1.387

a. Dependent Variable: BehaviouInten

Demographic analysis show that 52.2 percent of the respondents are males, while female is 47.8 percent. On marital status, 49.7 percent of the respondents are married, 43.6 percent are single while 6.7 percent are separated. On respondent age, 28.3 percent of the

respondents are under 25yrs, 39.5 percent is between 26-35yrs, 25.5 percent is 36-45, and 6.7 percent is 46 and above. Thus, majority of the respondents are within 45years and below. Educational qualification of the respondents shows that 26.8 percent have postgraduate

degree, first degree Bachelors of science/Higher National Diploma is 25.8 percent, West African Senior school Certificate or its equivalent is 39.8 percent and First

School Leaving Certificate is 7.6 percent. On profession, 36.3 percent is student, 36.3 percent is into business, 20.1 percent is public service and 7.3 percent is retired.
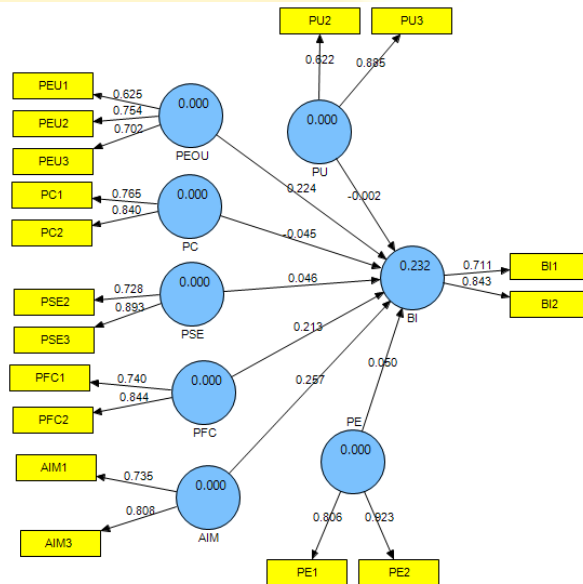

Fig 2: Measurement model

The standard PLS algorism was calculated (Figure 2) in SmartPLS software 2.0 (Ramayah 2015)[77] and loading of the indicators was asses through cross-loadings, composite reliability and AVE. Generally, the value for individual item loading below 0.70 was deleted (Hair, Ringle, & Sarstedt, 2011)[40]. When the PLS algorism was calculated initially, there were items that loaded below the threshold value and they were removed, for example AIM 2, PSE 1, and PU 1. According to Stark weather (2012)[86], Cronbach Alpha's measurement has some shortcomings and he recommended a more robust measure of assessing internal consistency reliability and convergent validity (*see table III*). Hair, Ringle, and

Sarstedt, (2011) posit that composite reliability should be greater than 0.70, while 0.60 to 0.70 is considered acceptable in exploratory research. The composite reliability for all the latent constructs in this study is greater than 0.70. Average Variance Extracted was used to assess the convergent validity. According to Hair, Hult, Ringle, and Sarstedt, (2014)[39], an AVE value of 0.50 or higher indicates that the construct explains more than half of the variance of its indicators, while value below .050 show weak indicator. Result of the PLS algorism shows that AVE value for all the constructs are above 0.50, apart from perceived ease of use.

Table III
Internal Consistency Reliability and Convergent Validity

Constructs	Items	loadings	AVE	Composite Reliability
Amount of Information	AIM1	0.7345	0.5958	0.7463
	AIM3	0.8075		
Behavioural Intentions	BI1	0.711	0.6083	0.7551
	BI2	0.8433		
Perceived Credibility	PC1	0.7648	0.645	0.7838
	PC2	0.8397		
Perceived Expressiveness	PE1	0.8055	0.7501	0.8567

	PE2	**0.9227**		
Perceived Ease of Use	PEU1	**0.625**	**0.4838**	**0.7365**
	PEU2	**0.7535**		
	PEU3	**0.7021**		
Perceived Financial cost	PFC1	**0.7402**	**0.6301**	**0.7724**
	PFC2	**0.844**		
Perceived self efficacy	PSE2	**0.7281**	**0.6638**	**0.7962**
	PSE3	**0.893**		
perceived usefulness	PU2	**0.6222**	**0.5856**	**0.7328**
	PU3	**0.8855**		

According to Campbell and Fiske (1959)[22], the term discriminant validity refers to the relationship of the off-diagonal terms of R_{xx} and R_{yy} with R_{xy}, such that x variables and y variables are indicators of different constructs. Thus, the discriminant validity was evaluated by the value of latent variable indicator loadings and cross-loading, the loading of a particular indicator should be higher in its own construct above its shared loading with other constructs. Discriminant validity was also assessed by the extent of correlation among the individual items. The individual items correlation indicated good discriminant validity since there is no indicator that loaded higher in another construct other than its originator construct (*see table iv*)

	AIM	BI	PC	PE	PEOU	PFC	PSE	PU	AVE
AIM	**0.7719**								**0.5958**
BI	0.3395	**0.7799**							**0.6083**
PC	0.1856	0.1592	**0.8031**						**0.645**
PE	0.2018	0.2273	0.1599	**0.866**					**0.7501**
PEOU	0.271	0.3346	0.3028	0.2337	**0.6956**				**0.4838**
PFC	0.0191	0.2549	0.305	0.3176	0.1235	**0.7938**			**0.6301**
PSE	0.3492	0.2481	0.3419	0.2799	0.3635	0.1536	**0.8147**		**0.6638**
PU	0.1302	0.161	0.2592	0.1554	0.3093	0.2146	0.3908	**0.7652**	**0.5856**

Table iv

There are seven (7) direct effect hypotheses in this study. For the directionality of hypotheses, the p. value was used to ascertain if the paths are significant (Hair, Hult, Ringle, and Sarstedt, 2014)[39]. In order to obtain the statistical t-values and the standard error, the PLS bootstrapping resampling was run with 5000 bootstrapping samples. Thus, the closer the path coefficients is to + 1 indicates a strong positive relationship (and vice versa for negative values), while the closer it is to 0, the weaker the relationships and very low values close to 0 generally are not statistically significant (Hair et al 2014)[39]. Table v shows the result of direct hypotheses testing. The Amount of Information → intention to accept Mobile money path has the highest value of path coefficient (beta 0.26), t-value of (3.98), standard error (0.065), and the p-value is 0.00, therefore the hypothesis is accepted. Perceived financial cost→ intention to accept Mobile money path coefficient has a (beta 0.21), standard error of (0.07), t-value of (3.26) and p-value is 0.00. Perceived Ease of use → intention to accept Mobile money path is also significant with beta value of (0.2244), standard error of (0.0764), t-value of (2.94) and p-value of (0.00). Lastly, perceive credibility, perceive Expressiveness, perceive self efficacy, and perceive usefulness have p-value of 0.42, 0.38, 0.49 and 0.98 respectively, therefore they are not significant.

Table V Result of Direct Hypotheses

Hypotheses	Relationship	STD. beta	STD Error	T value	P Value	DECESION
H5	AIM -> IAMM	0.257	0.0646	3.9795	0.00	**supported**

H4	PC -> IAMM	-0.0448	0.056	0.7994	0.42	not supported
H6	PE -> IAMM	0.0497	0.057	0.8717	0.38	not supported
H1	PEOU -> IAMM	0.2244	0.0764	2.9372	0.00	**Supported**
H7	PFC -> IAMM	0.2135	0.0656	3.2562	0.00	**supported**
H3	PSE-> IAMM	0.0461	0.0671	0.6869	0.49	not supported
H2	PU -> IAMM	-0.0018	0.0665	0.0278	0.98	not supported

Notes: PU-perceived usefulness; PEOU-perceived ease of use; PC-perceived credibility; PSE-perceived self efficacy; PFC-perceived financial cost; AIM-amount of information about mobile money; PE-perceived expressiveness; IAMM-Intention to accept Mobile money
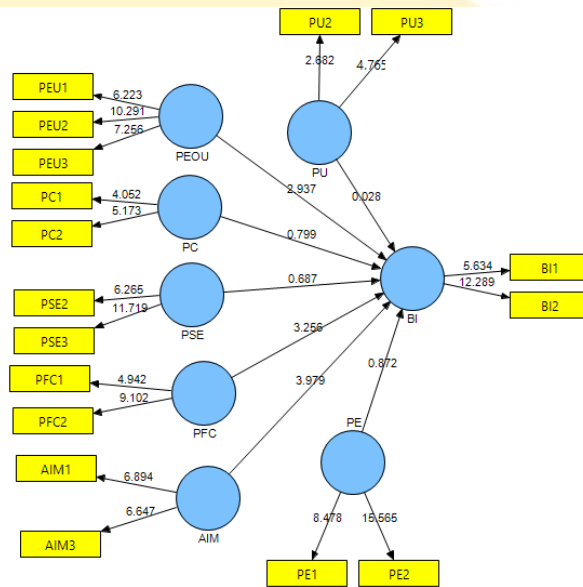

Fig 3, bootstrapping for direct Hypotheses

In Table V and fig 3 above, found that Perceived ease of use, perceived financial cost, and Amount of information are significantly and positively predictors of Intention to accept Mobile Money in South East of Nigeria. And perceived expressiveness, perceive self efficacy, Perceived usefulness and perceived credibility are not significant in Intention to accept Mobile Money. These are the reasons for the low rate of acceptance of mobile money in South East of Nigeria.

The results of this analysis as set out in Table V and Figure 3; with regards to the intention to accept Mobile Money in South East of Nigeria, theoretically, this study disapproves the appropriateness of TAM in predicting Mobile Money acceptance among bank customers in South East of Nigeria. Evidently, Perceived Usefulness, which is one of the principal factors of TAM, is not significantly predictor of Intention to accept Mobile Money in South East of Nigeria (t 0.03, p 0.98). This result is not consistent with the previous studies (Mathieson, Peacock, and Chin, 2001[59]; Doll, Hendrickson, and Deng, 1998[27]; Chin and Todd, 1995[21]; Segars and Grover, 1993[82]; Adams, Nelson, and Todd, 1992[1]; Davis, 1989)[25]. The null hypothesis '2' is rejected. Also, perceive self efficacy is not

significant for intention to accept mobile money in south-east of Nigeria. This result is not consistent with previous result (Compeau & Higgins 1995[23]; Agarwal & Prasad, 1999[3]; Venkatesh, 2000[93]; Venkatesh & Morris, 2000)[96]. The null hypothesis '3' is rejected. We equally found that Perceived credibility is not significantly predictor of Intention to accept Mobile Money in South East of Nigeria (t 0.79, p 0.42). This result is not consistent with the previous research (Lindskold, 1978[53]; Ba and Pavlou, 2002)[14]. The null hypothesis '4' is rejected. Equally, Perceived Expressiveness is not significantly predictor of Intention to accept Mobile Money in South East of Nigeria (t 0.87, p 0.38). This indicates that Perceived Expressiveness is not a predictor in explaining Intention to accept Mobile Money in South East of Nigeria. This result is not consistent with the results of previous studies (Nysveen et al., 2005)[71]. The null hypothesis '6' is rejected.

Table V and fig 3 equally show that PEOU (t 2.94, p 0.00) is significantly related to intention to accept mobile money. The result is consistent with the previous research (Davis, 1989; Mathieson, 1991)[58]. The null hypothesis '1' is accepted. The bank manager should ensure that customers are provided with adequate training on mobile

money application usage. Equally, Amount of information (t 3.98, p 0.00) is significantly related to intention to accept mobile money in South East of Nigeria. In this study, the Amount of information about Mobile Money has the ability to predict and explain the intention of bank customer to adopt the system. The result is consistent with the previous research (Pikkarainen et al., 2004)[75]. The null hypothesis '5' is accepted. Therefore, it is important for banks or policy makers to increase the information about mobile money services, which will equally increase the ease of use and trust. Perceived financial cost was significantly predictor of mobile money acceptance in South East of Nigeria. The T-value is 3.26, and P Value is 0.00, which is significant. Therefore, hypothesis '7' is accepted.

5. CONCLUSION

This study is one of the few, so far, which investigate the factors that influence the mobile money acceptance in South East of Nigeria. In this research we have defined several factors that act as drivers for information technology acceptance, which will equally affect mobile Money acceptance. Our empirical results show that only three factors; perceived ease of use, perceived financial cost, and Amount of information affect the South East bank consumers' acceptance of mobile money. This study provides important information to the practitioners and bank managers. They should create favourable perceptions concerning the perceived ease of use, perceived financial cost, and Amount of information among mobile money customers. Creating these positive perceptions might be achieved by offering free seminars to customers about those listed factors. And perceived usefulness, perceived credibility, perceived expressiveness and self efficacy are factors that do not influence the acceptance of mobile money in South East of Nigeria. This may be because of availability of other related mobile banking application in Nigeria.

Given that, mobile money today is evolving into an essential component of the overall Nigeria financial system facilitating the growth and development of the Nigerian economy. The aspiration of Nigerian government is to have a resilient, competitive, and dynamic mobile money system that meets, not only the economic needs of the nation, but more importantly the socio-economic development of the country, and to promote financial inclusion. Therefore, conducting a research study related to mobile money is imminently crucial, since mobile money is still in its growing stage, compare from other countries. As the government strives to build strong financial institutions, like mobile money for financial inclusion, specific studies are essential to help the government learn more about the voice of Nigerian banking customers regarding mobile money. Thus, Nigeria, which envisioned itself as capable of introducing mobile money, needs to have a strong base of customers in place first, by studying the factors that

influence its acceptance. From the perspective of the subject matter, this study has distinctly contributed to the body of knowledge of mobile money by closing the literature gaps. This study shows that acceptance of information technology may not be basically on its usefulness; rather other factors may drive its acceptance.

This present study, other than fulfilling other organizational and government requirements, also contributes significantly to the mobile money literature. Arguably, this will be the first study in Nigeria that tests (TAM) Technology acceptance model, specifically, in the area of mobile money. More significantly, the research incorporates new variables in the theoretical framework on product attributes of previous researches that investigated adoption behaviour in internet and mobile banking. Hence, the findings of this research will help policy makers and financial institutions in formulating and implementing meticulous policies by taking into consideration the factors that influence the acceptance of mobile money by bank customers, which are perceived ease of use, perceived financial cost, and Amount of information.

The limitations of this study are the sample size and the sample frame. The sample frame is bank customer in an urban area, future study should study unbanked in rural areas. The sample size of this study is small and did not cover the six geo-political zone of Nigeria; future study should increases the sample size to cover other geo-political zone of the country. Secondly, the study's measure was not extensive and future studies should increase the number of measures to be use. Nevertheless, despite these limitations, this study explored the factors that influence the acceptance of mobile money by bank customers in south-east of Nigeria.

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