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Digital Banking Adoption: Evidence from the Nigerian Youth Market

Ebru ESENDEMIRLI [1]
Alabi Abdulraouv OLAWALE [2]
Saban CELIK[3]
Mehmet Oguz KARAHAN[4]

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Abstract

This study aims to identify the factors influencing the adoption of digital banking in the Nigerian youth market. The research explores the adoption of both mobile and internet banking as part of a single digital banking concept. The research model extends the technology acceptance model (TAM) by further examining the impact of awareness, culture, social norms, perceived trust, perceived security on behavioral intention. The results suggest a strong influence of perceived trust on behavioral intention to adopt digital banking. Perceived ease of use, perceived usefulness, perceived security and perceived risk are key determinants of perceived trust in the Nigerian context. Other factors affecting behavioral intention are awareness and social norms.

Key words: Digital Banking, TAM, Perceived Trust, Awareness, Perceived Security, Social Norms

JEL Code: G21, G40, G50

1. Introduction

Digital banking diffusion has been a dynamic concept for the last two decades. Banks that offer a convincing digital customer experience are gaining momentum in the global financial services landscape. During the coronavirus pandemic, digital transactions, once a convenience, have turned into a necessity (PwC, 2020). Sub-Saharan Africa has risen above the rest of the world as the leader in mobile money transmission services, which has facilitated widespread access to

[1] Prof. PhD, Yasar University, Turkey, ebru.esendemir@yasar.edu.tr, http://orcid.org/0000-0002-0458-8740
[2] PhD, Yasar University, Nigeria, waleraouv@gmail.com, http://orcid.org/0000-0002-4070-3961
[3] Assoc. Prof. PhD, Izmir Katip Celebi University, Turkey, saban.celik@ikc.edu.tr, http://orcid.org/0000-0002-4918-4598
[4] Assoc. Prof. PhD, Yasar University, Turkey, oguz.karahan@yasar.edu.tr, http://orcid.org/0000-0003-0959-5824

financial services. Even though sub-Saharan Africa has lagged behind the rest of the world in terms of access to finance, certain nations in the region are now global leaders. East Africa has the highest rate of mobile money adoption and utilization throughout the region (IMF, 2019). Sub-Saharan Africa has a total of 1.1 billion population (World Bank, 2019a), with Nigeria being the most populated country with an estimated population of 200 million and the second-largest economy (IFC, 2020). The banking sector in Nigeria accounts for 80% of the financial sector. In Nigeria, the second largest technology center in Africa, investors are acquiring positions or stakes in the country's expanding technology ecosystem (PwC, 2020). International investors in Nigeria's banks have shown increasing interest due to economic growth, the country's young population, and the size of the market. 62% of the population is between 0-24 years of age (Indexmundi, 2020). Nigeria's non-banked population remains one of the largest in Sub-Saharan Africa (worldfinance.com, 2020). Nigeria's median age is 18. and digital banking is a good way to provide financial services to a segment of the population that is young and active on the Internet. Only 35% of the adults have a registered financial account and are digitally included (Finclusion.org, 2017). Thus, a range of studies has been carried out to explore indicators that affect digital banking adoption in Nigeria.

It has been reported that there is a lack of trust and confidence as so many Nigerian customers lost all their savings in past bank failures (Okpara, 2009). Further, the banks' lack of patronage is also a problem with the usage of technology (Agwu, 2016). According to Agwu (2012) the younger the customers, the more confident they are in using electronic banking in Nigeria. Young customers, as a market segment, expect the most up-to-date technical delivery channels for their banking transactions. This generation is classified as early adopters, as they are familiar and at ease with self-service digital channels that are convenient and transparent (Van Deventer et al., 2017). Despite the fact that 80 percent of students have mobile phones with internet access, the rising use of mobile phones has not resulted in higher mobile banking adoption in Nigeria. (Anyanwu et al., 2017). According to Chukwumah (2017), in rural areas, it can be attributed to a lack of awareness about mobile banking as well as a lack of language alternatives due to Nigeria's nearly 200 local languages. The author also points out that most of Nigeria's research focused on the adoption of online (not mobile) banking. Similarly, Shaikh and Karjaluoto (2015) called for studies addressing the use of m-banking adoption through smartphones or tablets, as existing literature remains limited by its narrow focus on SMS banking in developing countries. A large number of studies in the Technology Acceptance Model (TAM) research stream are dedicated to investigating the factors influencing the mobile banking adoption where perceived usefulness (PU) and perceived ease of use (PEU) are the major drivers. Recent African research has emphasized the role of trust in mobile banking adoption and investigated the factors that influence trust (Ifeonu and Ward 2015; Anyanwu et al., 2017). Further, Bankole et al. (2011) stated the importance of culture in the behavior of digital banking users in Nigeria. Although there have been studies undertaken among young customers in Africa (Van Deventer et al., 2017;

Van Deventer, 2019; Owusu, 2020), this is the first to investigate the digital banking adoption of Nigerian youth.

The major goal of this study is to investigate factors that affect the intention of Nigerian youth market to adopt digital banking. The research explores the adoption of both mobile and internet banking as part of a single digital banking concept. TAM is extended with the mediating effect of trust and a number of other influential factors in mobile banking adoption. This work aims to contribute digital banking services, the effects of which can be seen in the nation's e-commerce activities. The next section presents a literature review that discusses the factors affecting the adoption of digital banking. The third section covers the research methodology and results. The last section is the concluding remarks.

2. Literature Review

The rapid and effective change in the use of new information technology has affected consumers' behavioral habits, in particular their diverse banking practices, with more focus on protecting their money and privacy (Esendemirli et al., 2015). Digital banking is the digitization of all conventional banking operations and services that have traditionally been available only to customers while they are physically located inside a bank branch. The broad definition of digital banking includes activities such as money transfers, withdrawals, deposits, bill pay, credit, and account services conducted through ATMs, online and mobile banking. The narrow definition includes internet/online and mobile banking transactions (Proctor, 2019). Hence digital banking can be defined as banking services provided through the Internet and/or mobile banking (Larsson and Viitaoja, 2017). In this article, digital banking refers to mobile and/or internet banking activities. Behavioral intention to accept technologies is predicted and explained by the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB). (Fishbein & Ajzen, 1975; Ajzen, 1991). Innovation Diffusion Theory (IDT) is yet another early model that covers a range of issues related to the adoption of innovations, introduced by Rogers in the 1960s and developed since then (Rogers, 1995). This section provides a literature review to evaluate factors that influence digital banking adoption based on the TAM and extensions of TAM (E-TAM).

The Technology Acceptance Model (TAM) with two determinants, perceived ease of use (PEU) and perceived usefulness (PU), provided the basis for numerous studies evaluating the adoption of new technology (Davis, 1989). According to Yousafzai et al. (2010), the traditional focus of digital banking research is moving from technological innovations to consumer behavior, pointing out that the main factor in the future growth of digital banking is customer acceptance. The results of their research showed that, in the context of digital banking, the TAM was superior to both the TRA and the TPB, explaining variance in actual behavior and in terms of model fit. A number of studies have been conducted to extend TAM (Venkatesh and Davis, 2000; Pikkarainen et al., 2004). According to the extension of the Technology Acceptance Model, social influence processes and cognitive instrumental processes had a significant influence on user acceptance (Venkatesh and Davis, 2000). One of the most well-known one is the

Unified Theory of Acceptance and Use of Technology (UTAUT) which provides three direct determinants of intention to use (performance expectation, effort expectation, and social impact) and two direct determinants of use actions (intention and facilitating conditions). The theory suggests that the influence of core constructs is moderated by gender, age, experience, and voluntary use (Venkatesh et al., 2003). According to Hanafizadeh et al. (2014), the separation of belief, attitude, intention and behavior are those factors that influence the usage intention of information technology (Shaikh and Karjaluoto, 2015).

Research based on TAM extensions has generated varying results in different developing countries. In Malaysia PEU and PU were identified as having a major effect on digital banking adoption. In addition, perceived credibility, the amount of information on mobile banking and normative pressure were significant factors in explaining the acceptance of mobile banking (Amin et al., 2008). Zhou (2011) investigated the impact of trust on the adoption of mobile banking in China. He found that the fundamental guarantee and information quality are the main factors influencing the initial trust, while trust affects PU and both factors exert influence upon the intention to use. Mobile banking adoption by young people has been studied by Akturan and Tezcan (2012) in Turkey. The results of the combination of the TAM model and adoption risks indicated a strong influence of PU, social risk, performance risk, perceived advantages on users' attitudes. Kazi and Mannan (2013) found that Pakistani customers' behavioral intentions to adopt digital banking have been strongly influenced by social norms (SN), perceived risk (PR), PU, and PEU, where SN has the most important positive impact. In Kenya, both PU and PEU had a positive effect on digital banking adoption. In contrast, there was a negative association with the adoption of digital banking between PR and perceived transaction costs (Wamai and Kandiri, 2015).

The results of the comparative analysis suggested that PEU, PU and PR were the principal drivers of digital banking adoption for Australian customers. The major determinants for Thai customers, on the other hand, were PU, PR and SN indicating the influence of national culture. In determining the adoption of mobile banking by Thai users, Lin (2011) included innovation attributes and knowledge-based trust as explanatory variables. The findings revealed the strong impact of perceived relative advantage, PEU, compatibility, competence and integrity on customer attitudes and behavioral intentions. Alkhaldi (2017) developed an extended UTAUT conceptual model based on customers' awareness and found that service awareness had a direct impact on performance and effort expectancy in Saudi Arabia. Sivathanu (2018) evaluated the actual use of digital payments using UTAUT 2 and the innovation resistance theory. It was discovered that behavioral intention and resistance to innovation had an impact on digital payment systems. During the emergence of the Covid-19 pandemic, Coskun et al. (2022) investigated online payment system adoption factors among the customers of Turkish banking industry. Dmour et al. (2021) investigated the main variables influencing Jordanian consumers' adoption of the electronic payment system (EPS) based on the TAM. They gathered information from 567 Jordanian banking customers using an online

survey questionnaire. They concluded that PU, trust, and PEU are the most significant predictors of behavioral intention to use e-payments among Jordanian consumers.

Digital Banking Adoption in Nigeria

Mobile phones are Africa's most popular communication methods, with Nigeria being the leading trading nation where mobile phones are used as communication channels. With around 173 million subscribers and a penetration rate of 123 percent, Nigeria has Africa's largest mobile market (globenewswire.com, 2020). Mobile phones are the only information technology that is prevalent and widely applicable in Africa, of which Nigeria has the highest percentage of population patronage. High mobile phone penetration in developing countries provided banks and other financial institutions to reach the non-banked population (Chukwumah, 2017). After years of internet development, Nigeria is now home to over 100 million internet users with internet use hitting 48% of the population.

According to recent statistics provided by the World Bank in 2010 commercial bank branches per 100.000 adults were 6.56 and in 2010 and 4.3 in 2018 (World Bank, 2020b). It is noted that the advent of more advanced technology has modified the different methods through which financial transactions are conducted. The introduction of digital banking transactions by using a mobile phone contributes to the pace at which the technology is being adopted. In the last decade, Nigerian banks confronted with rising competition, changing regulations and macroeconomic instability. While the outbreak of Covid-19 causes problems to deepen, it also has potential prospects. Fears of infection contribute to digital banking (Akwagyiram and Ohuocha, 2020). As a result, the current trend is toward the use of digital banking systems (Fintechnews, 2020). Given that the digital banking model is more cost-effective than physical branches it is projected to improve Africa's economies in the long run by providing financial services to people unable to access conventional banking (Lago, 2021). The Nigerian fintech industry also has the potential to expand at a rapid pace, with investments growing far beyond expectations in the last few years (Kola-Oyeneyin et al., 2020). By 2020, there are six digital banks with no physical infrastructure operating in Nigeria (Iyanda, 2020).

The cost of cybercrime is rising across Africa, lowering the potential for Africa's digital revolution (Farrah, 2018). Serianu (2017) reported that African nations collectively lost around $ 3 billion as a result of cybercrime in 2017, with Nigeria losing an estimated $ 649 million. In this respect, the results of the study conducted by Chukwumah(2017) revealed that perceived convenience and trust are more influential than any other indicator affecting the adoption of digital banking. Further, many rural residents did not see the financial cost as an obstacle to mobile banking, and most people in rural areas were not aware of mobile banking. Moreover, dimensions of service quality dimensions and customer input variables have a significant effect on consumers' intention of using electronic banking (Agwu, 2016). Perceived risk factors have been found to negatively affect the

probability of using electronic banking. In addition, the possibility of personal information being obtained by a third party adversely affects the likelihood of electronic banking being used by customers. Anyanwu et al. (2017) classified PEU and perceived benefit as trust elements while the perceived monetary cost and PR were classified as distrust elements. The results of the analysis suggested that the trust elements which are perceived benefit and PEU had a positive effect on the behavioral intent of digital banking adoption. Using TAM, Ifeoma and Ward (2015) examined the causal relationship between technology trust and other factors affecting users' intention to adopt technology; based on the influence of seven factors contributing to technology trust. Technology trust has shown a direct and substantial effect on PEU and PU, a direct impact on intention to use as well as an indirect impact on intention to use through its impact on PU and PEU.

3. Theoretical Background and Hypothesis Development

In light of the studies conducted in Nigeria and other developing countries, the present study broadens the original TAM model by integrating additional variables such as perceived trust, perceived security, perceived risk, awareness of mobile and internet banking, social influence, and cultural heritage.

Behavioral Intention (BI): The main concept of UTAUT is behavioral intention (Venkatesh et al., 2003). BI was used as an indicator of digital banking adoption by a wide range of research studies. BI was a dependent variable in many of the digital banking adoption models proposed to predict the independent variables that would affect it (Shaikh and Karjaluoto, 2015).

Perceived ease of use (PEU) and perceived usefulness (PU): PEU and PU were the most frequently used antecedents of digital banking in previous studies (Shaikh and Karjaluoto, 2015). The PEU refers to the extent to which the potential user considers the target system to be effortless (Davis, 1989). PU is the degree to which an individual perceives to enhance their work performance with a particular program (Davis, 1989). Some of the studies suggest that PU is more influential than perceived ease of use on the intention to adopt digital banking (Wamai and Kandiri, 2015; Ifoenu and Rupert, 2015). While in several studies with other factors, only the effect of PU on intention was determined (Lewis et al. 2010; Daud et al., 2011). Users feel that technology must be useful if it is to be accepted. Recent studies measure PU with perceived benefits such as saving time, fast performance of tasks, ease of carrying out transactions and advantages of digital banking while the PEU measurements were ease of learning, less effort and training (Wamai and Kandiri, 2015; Anyanwu, 2016). Alsoufi and Ali (2014) found that customer service and efficient transaction factors have strongly affected PU. In addition, compatibility and self-efficacy have significantly affected PEU. Several previous TAM studies have pointed to the insignificant effect of PEU on BI (Strite and Karahana, 2006; Lewis et al. 2010; Daud et al., 2011). Although there is limited evidence in the literature to explain the insignificant effect of PU on BI, it is supported by a recent study conducted by Chukwumah (2017) in Nigeria. The current study conducted by

Al-Sharafi et al. (2017) argues that PEU and PU had no direct effect on the intention to use online banking services in Jordan. Yet, they had an indirect effect through PT. Extant literature on online shopping provides evidence for the effect of PEU (Lee, 2009b) and PU (Amin et al., 2014) on trust. Considering the results of previous research, we have developed the following hypotheses:

H1: There is a positive and significant impact of PEU on PT.

H2: There is a positive and significant impact of PU on PT.

Perceived trust (PT): PT is another important indicator in the adoption of digital banking (Masrek et al., 2014; Mashhour and Saleh, 2015). Trust has shown a direct impact on the intention to use digital banking while demonstrating that authentication, integrity, confidentiality, access control, non-repudiation, and best business practices have a significant effect on technology trust (Ifeonu and Ward, 2015). The results of the survey conducted in Malaysia (Masrek et al., 2014) showed the positive relationship of digital banking satisfaction between mobile phone trust, network trust, and website trust. Evidence from the study conducted in Bahrain (Mashhour and Saleh, 2015) indicated a good awareness of digital banking but because of trust and security issues, the respondents were unable to use digital banking. 68.4% of respondents did not trust mobile banking. In light of previous research findings, we have developed the following hypothesis:

H3: There is a positive and significant impact of PT on BI.

Perceived security (PS) and Perceived Risk (PR): A range of studies have also shown the effect of safety and security issues on the intention to adopt digital banking. Security issues include firewalls, biometric encryption, smart cards, authentication, and digital certification, and stringent cyber regulations (Deb and Lomo-David, 2014). Mashhour and Saleh (2015) reported that in Bahrein the responders did not use mobile banking services that have not been used because of many issues relating to information security. Authors suggested that mobile banking must be able to permanently delete from mobile devices all banking history and all transaction data to avoid the retrieval of such data from the Universal Integrated Circuit Card.

Previous studies have reported a negative impact of risk factors on digital banking adoption (Lee, 2009a; Cheah et al., 2011; Kazi and Mannan; 2013; Debasish and Dey, 2015; Wamai and Kandiri, 2015). The findings of the studies conducted in Malaysia (Cheah et al., 2011), Pakistan (Kazi and Mannan, 2013), India (Safeena et al., 2012), and Kenya (Wamai and Kandiri, 2015) indicated that there was a negative significant relationship between PR and intention to adopt digital banking. Lee found that (2009a) among the dimensions of privacy risk, financial risk, perceived risk, performance risk, and time risk adversely affected the intention to adopt digital banking. While the influence of social risk was insignificant. Ifeonu and Ward (2015) identified the positive effect of security on trust and found that authentication integrity, access control, confidentiality, and non-repudiation had a positive impact on technology trust. As, PS, PR and PT are

also related factors (Mashhour and Saleh, 2015; Ifeonu and Ward, 2015). We have developed the following hypotheses based on the results of previous research:

H4: There is a positive and significant impact of PS on PT.

H5: There is a positive and significant impact of PR on PT.

Awareness of Mobile and Internet Banking (AMIB): The extent of knowledge on online banking has been reported as a major factor in intention to adopt (Pikkarainen et al., 2004), while low awareness of digital banking is a key indicator in avoiding customers from adopting digital banking (Amin et al., 2008; Safeena et al., 2012). Studies conducted in India (Safeena et al., 2012) and Malaysia (Daud et al., 2011) revealed the positive effect of AMIB on the intention to adopt digital banking. Alkhaldi (2017) and Alsheikh and Bojei (2014) pointed out that awareness of mobile banking affected performance and effort expectancy. Further, researchers notified the positive influence of AMIB on PU (Al-Somali et al., 2009; Mohammadi, 2015) and PEU (Mohammadi, 2015). We constructed the following hypotheses based on previous research findings:

H6: There is a positive and significant impact of AMIB on BI.

Social Norms (SN): According to Venkatesh et al. (2003) social influence is the degree to which users are affected by the preferences of certain important people (e.g., family and friends) that they should use a specific technology. It is an important factor in E-TAM and the UTAUT (Venkatesh and Davis, 2000; Venkatesh et al., 2003). The perceptions of consumers about adoption and long-term use of digital banking are affected by their social interactions. They are drawn to digital banking with family and friends' views (Mokhtar et al. 2017). Researchers reported the positive effect of SN on the adoption of digital banking in Pakistan (Kazi and Mannan, 2013), Thailand (Mortimer et al., 2015) and India (Deb and Lomo-David, 2014). While, several authors did not find any significant effect of SN on digital banking adoption (Lee, 2009; Cheah et al., 2011). Based on prior research findings, we developed the following hypothesis:

H7: There is a positive and significant impact of SN on BI.

Cultural Heritage (CH): Cultural identity is the degree to which people adopt the norms and values of a particular culture (Strite and Karahanna, 2006). Strite and Karahanna (2006) demonstrated how aspects of national cultural values can influence technology acceptance behavior at the individual level. It can be regarded as a moderating mechanism influencing the level of significance for technology adoption models between independent and dependent variables (Min et al., 2008; Bankole et al., 2011). The results of the meta-analysis revealed that the national cultural dimensions of Hofstede have a moderating effect on some models (Zhang et al., 2018). Bankole et al. (2011) found that the cultural values of Nigerian customers affect their perceptions of digital banking. In a cross-country analysis of

Australia and Thailand, national culture has been identified as having an impact on key antecedents that influence the intent to adopt digital banking (Mortimer et al. 2015). Based on previous research findings, we created the following hypothesis:

H8: There is a positive and significant impact of CH on BI.

4. Methodology

The research aims to explore the factors influencing the adoption of digital banking services in the Nigerian youth market. Data were obtained from digital banking users and non-users in three major cities: Aba, Kano, and Lagos. Because the study is being done in university bank halls, non-users are viewed as having a strong potential to use mobile banking. There have been studies conducted with both user and non-user samples (Priya et al., 2018). Data was acquired through surveys administered to 350 students at university bank halls with a simple random sampling method. As shown in Table 1, 63.3 % of the participants who completed the information were females and 36.7 % were males. The majority of the respondents (94%) were younger than 34 years of age and 98% of them had information about digital banking services. The rate of use of digital banking (75.5%) is higher than the rate of use of conventional banking (54.5%). A questionnaire using the five-point Likert scale of 1 = strongly disagree to 5 = strongly agree was developed. The 52 statements of 9 dimensions, presented in Table 2, were taken from existing literature.

Table 1. The demographic characteristics of the sample

Gender	%	Age	%	Education	%	Conventional banking usage	%	Digital banking usage	%
Male	36.7	0-20	18.1	high school	62.7	Yes	54.5	Yes	75.5
				OND					
Female	63.3	21-25	32.9	certificate	9.9	No	45.5	No	24.5
				HND					
		26-30	23.6	certificate	7				
		31-35	19.5	University	20.4				
		36-40	5.9						

Source: Authors' calculations

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Table 2. Measurement Items

Factors	Items	Theory / Source
1. Perceived Ease of Use (PEU)	(PEU1) It is easy for me to learn how to use digital banking applications. (PEU2) I understand my interaction with digital banking easily. (PEU3) I can use digital banking easily. (PEU4) It is easy for me to use digital banking. (PEU5) Digital banking application is simple for me to operate. (PEU6) I found it comfortable to become skillful at using digital banking applications.	TAM Davis (1989); Hanafizadeh et al. (2014); Wamai and Kandiri, (2015)
2. Perceived Usefulness (PU)	(PU1) I find using digital banking useful. (PU2) I accomplish my banking task quickly by using digital banking. (PU3) The efficiency of my banking activities is achieved by using digital banking. (PU4) Using digital banking improves my banking experience. (PU5) My banking productivity has been improved by using digital banking. (PU6) Overall, I think using digital banking is advantageous.	TAM Davis (1989); Hanafizadeh et al. (2014); Wamai and Kandiri, (2015)
3. Perceived Trust (PT)	(PT1) The digital banking I am using is trustworthy. (PT2) I believe in the information provided by the digital banking application. (PT3) I have a high tendency to trust digital banking operations. (PT4) I have trust in digital technology. (PT5) I trust digital banking operations on the security of my information. (PT6) It is difficult to trust digital banking. (PT7) I can confirm my transaction with digital banking after the operation.	E-TAM Al-Somali et al. (2009); Hanafizadeh et al. (2014)
4. Perceived Security (PS)	(PS1) I feel secure when putting my personal information in the digital banking application. (PS2) I believe the digital banking application has security features to protect users. (PS3) I trust the ability of digital banking application to protect my privacy. (PS4) Using digital banking application would not release my personal information to the third party. (PS5) I do not think there is any danger by using digital banking (PS6) Using digital banking is financially secured. (PS7) I am not worried about the security of digital banking.	E-TAM Deb and Lomo-David (2014)
5. Perceived Risk (PR)	.(PR1) I have fear for the safety of my information in digital banking. (PR2) I have fear of misuse of my personal information digital banking. (PR3) I entertain fear of losing my money in digital banking. (PR4) I have a fear of authorized access to my information in digital banking. (PR5) I feel unsafe anytime I provide my private information on digital banking. (PR6) Network problems may make digital banking fail.	E-TAM Makongoro (2014); Hanafizadeh et al. (2014); Wamai and Kandiri, (2015)
6. Cultural Heritage (CH)	(CH1) Culture has a great influence on the adoption of digital banking. (CH2) Cultural differences among different communities contribute to the efficiency of digital banking. (CH3) My culture does not allow monetary transactions with digital banking. (CH4) My culture lacks knowledge of the advantage of digital banking.	E-TAM Al-Sukkar (2005); Sirette and Karahanna, (2006)
7. Awareness of Mobile and Internet Banking (AMIB)	(AMIB1) I am aware of digital banking services. (AMIB2) I have received enough information on how to use mobile banking services. (AMIB3) I have received enough information about the benefits of using digital banking services. (AMIB4) I have knowledge of digital banking. (AMIB5) I have my own smartphone and laptop to carry out digital banking operations.	E-TAM Alkhaldi (2017); Al-Somali et al. (2009)
8. Social Norms (SN)	(SN1) I enjoy using digital banking. (SN2) Most of my colleagues use digital banking. (SN3) People around me use digital banking. (SN4) People around me influence me to use digital banking. (SN5) People who are familiar with me think that I should use digital banking	UTAUT Sirette and Karahanna (2006); Yu (2012)
9. Behavioral Intention (BI)	(BI1) I intend to use digital banking continuously in the future. (BI2) I would take advantage of digital banking for my banking activities. (BI3) I will adopt digital banking as soon as possible. (BI4) I will use digital banking anytime I have access. (BI5) I will use digital banking for my banking needs. (BI6) I am comfortable in using digital banking.	TAM, UTAUT Davis (1989); Venkatesh et al. (2003); Yu (2012);

Source: Authors

Analyses

Regression analysis and structural equation modeling methodologies are performed to determine the factors that influence behavioral intention.

Regression Analysis

Regression analysis is conducted to determine the effects of the factors given in Table 2. Regression analysis is a highly reliable method for measuring correlations between multiple variables (Higgins, 2005; Joseph et al., 2010). Each variable in regression analysis is generated by assigning equal weights to each item under a given factor. Behavioral intention (BI) is the dependent variable. The mean of BI statements from BI1 to BI6 (MBI) was used as a dependent variable for digital banking adoption. The independent variables were: mean of PEU statements from PEU1 to PEU6 (MPEU), mean of PU statements from PU1 to PU6 (MPU), mean of PT statements from PT1 to PT7 (MPT), mean of PS statements from PS1 to PS7 (MPS), mean of PR statements from PR1 to PR6 (MPR), CH statements from CH1 to CH6 (MCH) AMIB statements from AMIB1 to AMIB5 (MAMIB), and SN statements from SN1 to SN5 (MSN). Also, two dummy variables were created for regions for Regions Kano and Lagos. The following regression model is estimated to identify which factors have a significant effect on behavioral intention:

Table 3. The regression results

Dependent Variable: MBI				
Constant	1.310665***	1.080730***	0.591831***	0.470665***
	(8.293715)	(5.962607)	(3.079091)	(2.486388)
MPS	0.671770***	0.501907***	0.454520***	0.442841***
	(16.45654)	(8.895835)	(8.574516)	(8.228740)
MPT		0.227745***	0.215096***	0.186021***
		(3.594222)	(3.649078)	(2.906967)
MAMIB			0.185511***	0.142849***
			(4.595297)	(3.243488)
MSN				0.109169**
				(1.885890)
R-Squared	0.516378	0.546490	0.582945	0.590920
Adjusted R-Squared	0.514955	0.543815	0.579243	0.586065
F-Statistic	363.0279	204.2518	157.4815	121.7001
Prob (F)	0.000000	0.000000	0.000000	0.000000

*All estimates are obtained using White's heteroskedasticity-consistent covariance matrix.
t-statistics are in parentheses.
***, **, * indicate significance levels 1%, 5% and 10%, respectively.

Source: Authors' calculations

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$$MBI = \alpha + \beta_1 MAMIB + \beta_2 MCH + \beta_3 MPEU + \beta_4 MPR + \beta_5 MPS + \beta_6 MPT + \beta_7 MPU + \beta_8 MS + \beta_9 MSN + \beta_9 INCOME + \delta_1 REGION1 + \delta_2 REGION2 + \epsilon$$

After removing variables with insignificant effects, our model reduced to:

$$MBI = \alpha + \beta_1 MPS + \beta_2 MPT + \beta_3 MAMIB + \beta_4 MSN + \epsilon$$

The results for four alternate regression specifications are provided in Table 3. Since heteroscedasticity is present according to the White test, all estimates are obtained by using White's heteroscedasticity-consistent covariance matrix. The results of the regression analysis in Table 3 show that perceived security (PS), perceived trust (PT), awareness of mobile and internet banking (AMIB), and social norms (SN) have a major effect on the BI to use digital banking. The independent variables PS, PT, and AMIB are statistically significant at 1% while, SN is statistically significant at 10%. The proposed model explains 58.6 percent of the variance in intention to adopt digital banking. The effect of PU, PEU, gender, income and region dummy variables on BI are insignificant.

Structural Equation Model

The structural equation model (SEM) presented in Figure 1, is developed to test the hypotheses formulated in the theoretical background and hypothesis development part. SEM in AMOS software is used to generate a more complex path model that incorporates both direct and indirect effects, allowing causal mechanisms to be modeled.

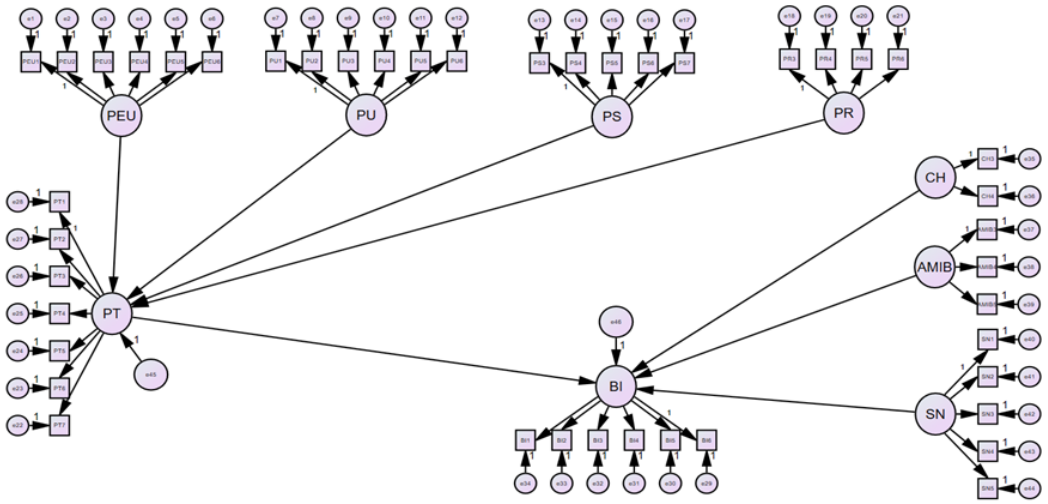

Figure 1: The Conceptual Model
Source: Authors

5. Findings

The results of the SEM model given in Figure 2 indicated that the estimates were normal and acceptable, and all Critical Ratio values were greater than 1.96, indicating that they were all acceptable. Goodness of Fit (GFI) is 0.732 and CFI is 0.749 with CFI deteriorates as the number of indicators per factor increases (Kenny, and McCoach, 2003). The proposed model consists of 9 factors and 44 sub-factors. The root mean square error of approximation (RMSEA) is 0.076 where research suggested that an RMSEA value of < .05 indicates a "close fit," and that < .08 suggests a reasonable model–data fit (Browne & Cudeck, 1993). Parameter Estimates of Re-specified Model are presented in Table 4. According to the summary of hypothesis testing given in Table 5. PEU and PU have an indirect effect on behavioral intention, mediated through perceived trust. PS has a significant effect on behavioral intention.

One of the major contributions of this study is that it presents the significant positive influence of PEOU (H1), PU (H2), PS (H4) and PR (H5) on perceived trust in the Nigerian youth market. Nigerian young customers use digital banking if they trust it. The identified determinants of trust; perceived ease of use, perceived usefulness, perceived security and perceived risk are consistent with the findings of the previous studies (Lee, 2009b; Amin et al., 2014; Ifeonu and Ward, 2015; Mashhour and Saleh, 2015; Al-Sharafi et al., 2017). Furthermore, the results of the regression analysis indicate that perceived security (H4) has a positive impact on BI. Past studies reported the positive effect of perceived security on the adoption of digital banking (Pikkarainen et al., 2004; Cheng et al., 2006). Similarly, awareness of mobile and internet banking (H6) and social norms (H7) are found to influence behavioral intention to use digital banking based on regression and SEM results. Alkhaldi, (2017) and Doud et al. (2011) have highlighted the influence of AMIB on BI. In addition, a number of studies determined the impact of SN on BI (Kazi and Mannan, 2013; Mortimer et al., 2015; Deb and Lomo-David, 2014).

The structural equation model presented in Figure 2 has been tested for construct validity. Construct validity includes convergence which means the items convergent within the factor and discriminant validity implies that the factors are statistically different. The formal procedure of testing convergent validity is to test whether AVE (average variance extracted) is higher than 0.5. Some factors are above and below this threshold value as shown in Table 6. However, explanatory factor analysis can be used to test the convergence of the items within each factor. As a result, items that are not homogenous for the factor and extremely low-loading items are excluded from the factor. Therefore, we can confidently claim that the results presented here do not prevent us from inferring the results of the SEM study. While this shortcoming is not desirable for SEM analysis, it should be noted that the sample includes the different participants (online banking users and non-users) from the Nigerian youth market.

Table 4. Parameter Estimates of Re-specified Model

			Standardized Beta	Unstandardized Beta	S.E.	C.R.	P
AMIB5	<---	AMIB	0,65	1			
AMIB4	<---	AMIB	0,668	1,082	0,105	10,342	< 0,001
AMIB3	<---	AMIB	0,774	1,239	0,108	11,497	< 0,001
PR6	<---	PR	0,76	1			
PR5	<---	PR	0,74	1,048	0,089	11,803	< 0,001
PR4	<---	PR	0,757	1,026	0,086	11,932	< 0,001
PR3	<---	PR	0,275	0,746	0,162	4,611	< 0,001
PU6	<---	PU	0,47	1			
PU5	<---	PU	0,671	1,328	0,169	7,88	< 0,001
PU4	<---	PU	0,726	1,51	0,185	8,15	< 0,001
PU3	<---	PU	0,667	1,4	0,178	7,86	< 0,001
PU2	<---	PU	0,627	1,071	0,14	7,629	< 0,001
PU1	<---	PU	0,639	1,401	0,182	7,705	< 0,001
CH4	<---	CH	0,856	1			
CH3	<---	CH	0,708	0,861	0,163	5,281	< 0,001
BI1	<---	BI	0,649	1,425	0,134	10,675	< 0,001
BI2	<---	BI	0,387	0,981	0,148	6,63	< 0,001
BI3	<---	BI	0,743	1,438	0,12	11,979	< 0,001
BI4	<---	BI	0,635	1,199	0,114	10,476	< 0,001
BI5	<---	BI	0,652	1,264	0,118	10,723	< 0,001
BI6	<---	BI	0,669	1			
PT7	<---	PT	0,705	1			
PT6	<---	PT	0,704	1,024	0,084	12,245	< 0,001
PT5	<---	PT	0,679	1,019	0,086	11,834	< 0,001
PT4	<---	PT	0,658	0,863	0,075	11,482	< 0,001
PT3	<---	PT	0,67	0,935	0,08	11,672	< 0,001
PT2	<---	PT	0,587	0,698	0,068	10,272	< 0,001
PT1	<---	PT	0,672	1,017	0,087	11,712	< 0,001
PS3	<---	PS	0,747	1,137	0,096	11,838	< 0,001
PS4	<---	PS	0,751	1,043	0,088	11,9	< 0,001
PS5	<---	PS	0,766	1,057	0,087	12,08	< 0,001
PS6	<---	PS	0,773	1,173	0,096	12,161	< 0,001
PS7	<---	PS	0,649	1			
SN1	<---	SN	0,663	1,13	0,103	10,942	< 0,001
SN2	<---	SN	0,611	1,146	0,113	10,159	< 0,001
SN3	<---	SN	0,71	1,212	0,104	11,622	< 0,001
SN4	<---	SN	0,666	1,02	0,093	10,982	< 0,001
SN5	<---	SN	0,692	1			
PEU1	<---	PEU	0,737	1,037	0,097	10,701	< 0,001
PEU2	<---	PEU	0,793	1,352	0,12	11,22	< 0,001
PEU3	<---	PEU	0,84	1,428	0,123	11,607	< 0,001
PEU4	<---	PEU	0,816	1,333	0,117	11,412	< 0,001
PEU5	<---	PEU	0,678	1,207	0,119	10,113	< 0,001
PEU6	<---	PEU	0	1			

Source: Authors

The second construct validity test is discriminant validity. The formal method for testing discriminant validity is to test whether the square root of AVE is higher than the inter-correlations among the constructs. As shown in Table 6, discriminant validity is generally confirmed whereas there are few exceptions, particularly the construct of BI shows inconsistency to some degree with constructs of SN, AMIB, PT, and PS. We attribute this inconsistency to the characteristics of sample participants as it is in the case of convergent validity.

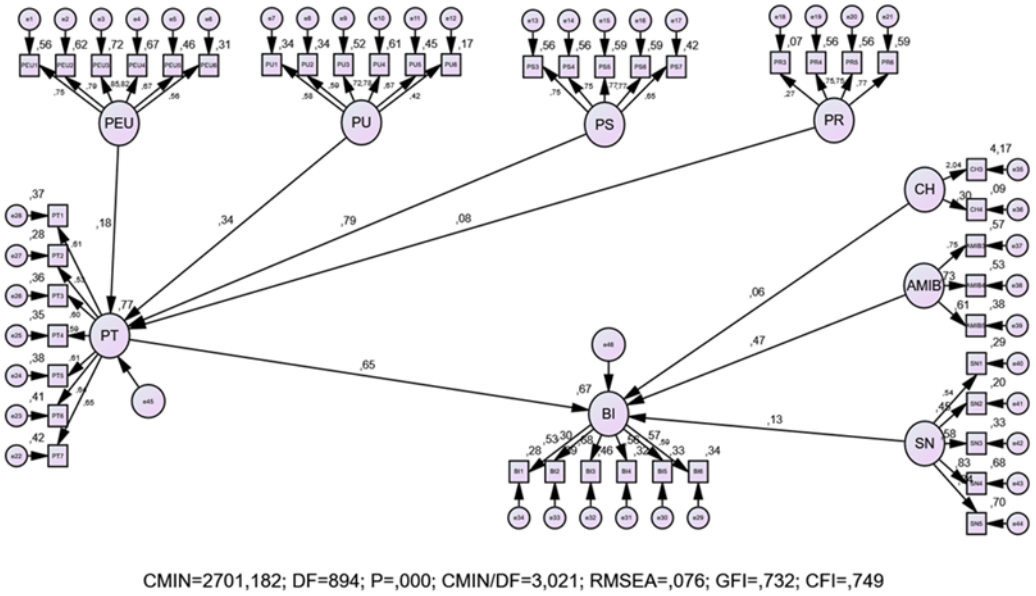

Figure 2. Structural Equation Model Results
Source: Authors' calculations

Table 5. Summary of Hypothesis Testing

			Standardized Beta	Un-standardized Beta	S.E.	C.R.	P	Hypothesis
PT	<---	PEU	0,182	0,184	0,045	4,05	< 0,001	H1 supported
PT	<---	PU	0,336	0,326	0,055	5,90	< 0,001	H2 supported
BI	<---	PT	0,653	0,407	0,054	7,56	< 0,001	H3 supported
PT	<---	PS	0,788	0,58	0,059	9,84	< 0,001	H4 supported
PT	<---	PR	0,084	0,074	0,042	1,73	0,083	H5 supported
BI	<---	AMIB	0,471	0,249	0,038	6,54	< 0,001	H6 supported
BI	<---	SN	0,133	0,099	0,04	2,47	0,013	H7 supported
BI	<---	CH	0,057	0,009	0,024	0,35	0,722	H8 not supported

Source: Authors' calculations

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Table 6. Convergent and Discriminant Validity*

	AVE Average Variance Extracted	Square Root of AVE	PEU	PU	PS	PR	PT	CH	AMIB	SN	BI
PEU	0,56	0,75	0,75								
PU	0,41	0,64	**0,76**	0,64							
PS	0,55	0,74	0,45	0,52	0,74						
PR	0,44	0,67	0,00	0,09	0,28	0,67					
PT	0,37	0,60	0,59	**0,71**	**0,84**	0,25	0,60				
CH	2,13	1,46	0,04	0,04	0,12	-0,23	0,07	1,46			
AMIB	0,49	0,70	0,52	0,50	0,51	-0,10	0,46	-0,01	0,70		
SN	0,44	0,66	0,51	0,60	0,51	0,00	0,55	0,15	**0,85**	0,66	
BI	0,30	0,55	0,54	0,59	**0,81**	0,11	**0,76**	0,11	**0,74**	**0,68**	0,55

*: AVE and The square root of AVE (shown as highlighted at diagonal) and factor correlation coefficients.

Source: Authors' calculations

6. Conclusions

Allowing the use of many of the advantages of information technology, the period of banking service provided by first-generation banks described as "armchair banking" is over. Nigeria's banking institutions are currently investing in and redirecting existing large numbers of the non-banked population to banking services rather than a general attitude of keeping money away from banks. Nigeria, with a large population, has an immense human resource capacity for technical knowledge of banking information technology, which is expected to improve banking and economic systems. Banks are currently providing a number of new digital services, leading to a significant rise in new accounts. Bankers have extended their service through digital applications that enable the users the opportunity to make various transactions including opening accounts, applying for loans, checking the account balance, transferring funds and making payments over the internet, and paying utility bills. The adoption of new technology puts pressure on commercial banks to maintain and increase their customers, as they compete on the distribution of the same customers.

This research adds to the current research on digital banking by empirically testing the factors influencing mobile banking adoption from the perspective of young customers in Nigeria. Factors are derived from a review of previous TAM and E-TAM research. The study contributes to the existing literature by integrating internet and mobile banking adoption in an extended concept such as digital banking adoption. The study came up with three major conclusions. To begin, this

study reveals that PT plays a mediating role between adoption factors such as perceived ease of use (PEU), perceived usefulness (PU), perceived security (PS), perceived risk (PR) and BI. Trust affects the intention to use digital banking both directly and indirectly through its positive impact on PEU, PU, PS, and PR. When young clients trust digital banking, their perceptions of PEU, PU, PS, and PR strengthen, as does their intention to use the technology. The second finding indicates that awareness of mobile and internet banking (AMIB) has a significant impact on BI. Finally, social norms (SN) have an influence on the behavioral intention (BI) to adopt digital banking. The results are supported by earlier research on the role of trust (Anyanwu et al., 2017; Van Deventer, 2019), awareness (Safeena et al., 2012; Alkhaldi, 2017) and social norms on mobile banking adoption (Mortimer et al., 2015; Mokhtar et al. 2017). The results of this study highlight the limitation of the primary TAM model (Davis 1989) in investigating the adoption of mobile banking in Nigerian young people. As this is the only study investigating digital banking adoption in Nigerian youth there is a lack of theoretical evidence to justify this finding. A similar result was achieved by Chukwumah (2017) for the non-banked population in Nigeria while current literature remains restricted to its limited focus on SMS banking in developing countries (Shaikh and Karjaluoto, 2015).

Although mobile banking has a large market potential, its adoption rate in Nigeria is modest. People that use digital banking are typically educated, relatively young, and wealthy, with a good understanding of computers and mobile phones. Given Nigeria's large youth population, they are a driving force in the country's mobile banking usage. This study demonstrates if Nigerian young digital banking customers trust digital banking, they are more likely to use it because of a lack of trust and confidence as so many Nigerian customers have lost all their savings in past bank failures. The major implication of this research is that banks should build strategies to maintain the security and trust of Nigerian young digital banking users. As young users gain more knowledge and information about the technology and benefits of digital banking, their willingness to use the services increases. The perceptions of young people on the adoption and long-term use of digital banking are influenced by their mass media, family, and friends. Customers are drawn to a product or service when their relatives and friends spread positive word of mouth about it. Nigerian commercial banks should promote their services to a broader audience and educate young clients about the benefits of online banking by utilizing various forms of marketing channels.

Limitations

This study represents the perspectives of university students in a developing country. This is the primary limitation of the study. In the future, the model should be tested on older age groups with various profiles. This study was also limited by geographical constraints. Data is gathered from Nigeria's three major cities. The authors suggest that future studies collect data from rural locations. These places are important for mobile banking adoption research because their populations include both users and non-users of the technology. This study's conceptual model does not incorporate measures of attitude or actual usage behavior. However, future scholars could expand the study's verified models to include actual usage behavior.

The study's research design is cross-sectional in nature. Future research could use a panel research design to understand the adoption intention over time.

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*, Vol. 2, No. 4, pp. 68-81, October-December

Agwu, E. M. (2016). Empirical determinants of consumers' uptake of electronic banking in selected states of Nigeria. *West African Journal of Industrial and Academic Research*, *16*(1).

Akwagyiram, A. and Ohuocha, C. (2020). Coronavirus accelerates Nigeria's digital banking push, www.reuters.com/article/health-coronavirus-nigeria-fintech-idUSKCN26D13U, accessed on 25/12/2020.

Alkhaldi, A. N. (2017). An empirical examination of customers' mobile phone experience and awareness of mobile banking service in mobile banking in Saudi Arabia. *Interdisciplinary Journal of Information, Knowledge, and Management*. Vol.12. pp. 283-308.

Alsheikh, L., & Bojei, J. (2014). Determinants affecting customers' intention to use mobile banking in Saudi Arabia. *Int. Arab J. e-Technol.*, *3*(4).

Al-Sharafi, M. A., Arshah, R. A., Herzallah, F. A., & Alajmi, Q. (2017). The Effect of Perceived Ease of Use and Usefulness on Customers' Intention to Use Online Banking Services: The Mediating Role of Perceived Trust *International Journal of Innovative Computing*, *7*(1).

Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, *29*(2), 130-141.

AlSoufi, A., & Ali, H. (2014). Customers' perception of m-banking adoption in Kingdom of Bahrain: An empirical assessment of an extended TAM model. *arXiv preprint arXiv:1403.2828*.

Al-Sukkar, A. S. (2005). *The application of information systems in the Jordanian banking sector: a study of the acceptance of the internet*. (Doctoral dissertation, The University of Wollongong)

Amin, H., Hamid, M. R. A., Lada, S., & Anis, Z. (2008). The adoption of mobile banking in Malaysia: The case of Bank Islam Malaysia Berhad (BIMB). *International Journal of Business and Society*, *9*(2), 43.

Amin, M., Rezaei, S., & Abolghasemi, M. (2014). User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust. *Nankai Business Review International*.

Anyanwu, F., Ubi, H., & Ananwude, A. (2017). Trust and Distrust Determinants of Mobile Banking Adoption in the Nigerian Banking Industry: A Study of First Bank Nigeria Limited. *Asian Research Journal of Arts & Social Sciences*, *3*(4), 1-25.

Bankole, F. O., Bankole, O. O., & Brown, I. (2011). Mobile banking adoption in Nigeria. *The Electronic Journal of Information Systems in Developing Countries*, *47*(1), 1-23.

Cheah, C. M., Teo, A. C., Sim, J. J., Oon, K. H., & Tan, B. I. (2011). Factors affecting Malaysian mobile banking adoption: An empirical analysis. *International Journal of Network and Mobile Technologies*, *2*(3), 149-160.

Chukwumah, S. (2017). Adoption of Mobile Banking Service in Rural Nigeria. *Unpublished Master of Science in Finance Thesis: National Open University of Nigeria*.

Coskun, M., Saygili, E., & Karahan, M. O. (2022). Exploring online payment system adoption factors in the age of COVID-19—Evidence from the Turkish banking industry. *International Journal of Financial Studies*, *10*(2), 39.

Cudeck, R., & Browne, M. W. (1992). Constructing a covariance matrix that yields a specified minimizer and a specified minimum discrepancy function value. *Psychometrika*, *57*, 357–369.

Daud, N. M., Kassim, M. E., Said, W. S., & Noor, M. M. (2011). Determining critical success factors of mobile banking adoption in Malaysia. *Australian Journal of Basic and Applied Sciences*, *5*(9), 252-265.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, *35*(8), 982-1003.

Deb, M., & Lomo-David, E. (2014). An empirical examination of customers' adoption of m-banking in India. *Marketing Intelligence & Planning*.

Debasish, S. S., & Dey, S. (2015). Factors affecting adoption of mobile banking: An empirical study in the State of Odisha. *International Journal f Management & Business Studies*, *5*(2), 15-20.

Dmour, A., Dmour, H., Al-Barghuthi, R., Al-Dmour, R. (2021). Factors Influencing the Adoption of E-Payment During Pandemic Outbreak (COVID-19): Empirical Evidence, *The Effect of Coronavirus Disease (COVID-19) on Business Intelligence,* 133-154.

Esendemirli, E., Turker, D., & Altuntas, C. (2015). An Analysis of interdepartmental relations in enterprise resource planning implementation: a social capital perspective. *International Journal of Enterprise Information Systems (IJEIS)*, *11*(3), 27-51.

Farrah, R. (2018). "Here is what's holding back Africa's digital revolution", World Economic Forum,www.weforum.org/agenda/2018/03/here-is-whats-holding-back-africas-digital-revolution/, accessed on 18/10/ 2020.

Finclusion.org. (2017). Nigeria, Wave 4 Report Financial Inclusion Tracker Survey. Available at https://finclusion.org/uploads/file/reports/Nigeria%20Wave%204%20Report_23-Jun-2017.pdf, accessed on 19/06/ 2021.

Fintechnews (2020). The evolution of digital banking post covid-19, www.fintechnews.org/the-evolution-of-digital-banking-post-covid-19/

Globenewswire (2020). Available at globenewswire.com/news-release/2020/02/18/1986444/0/en/ Nigeria-The-Government-Commits-to-Increasing-Mobile-Broadband-Penetration-to-70-by-2021.html, accessed on 10/05/2020.

Hair, J.F., Black, W.C., Babin B.J., Anderson, R. E. (2010). Multivariate Data Analysis (7th ed.). Pearson Prentice Hall.

Hanafizadeh, P., Behboudi, M., Koshksaray, A. A., & Tabar, M. J. S. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, *31*(1), 62-78.

Higgins, J. (2005). Introduction to Multiple Regression (Chp4). The Radical Statistician.

IFC. Available at ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+ and+events/news/nigeria_banking_support, accessed on 20/07/2020.

Ifeonu, R. O., & Ward, R. (2015). The Impact of Technology Trust on the Acceptance of Mobile Banking Technology within Nigeria. *IEEE African Journal of Computing & ICTs*, *8*(4).

IMF. (2019). Fintech in Sub-saharan African countries. https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2019/02/13/FinTech-in-Sub-Saharan-African-Countries-A-Game-Changer-46376, accessed on 05/07/2023.

Indexmundi (2019) Available at www.indexmundi.com/nigeria/age_structure.html, accessed on 25/05/2020.

Iyanda, D. (2020). Digital banks: ALAT, Kuda, Rubies, Eyowo, V by VFD, and Sparkle compared, www.benjamindada.com/best-digital-bank-alat-kuda-eyowo-vfd-sparkle/, accessed on 25/12/2020.

Kazi, A. K., & Mannan, M. A. (2013). Factors affecting adoption of mobile banking in Pakistan. *International Journal of Research in Business and Social Science (2147-4478)*, *2*(3), 54-61.

Kenny, D. A., & McCoach, D. B. (2003). Effect of the number of variables on measures of fit in structural equation modeling. *Structural equation modeling*, *10*(3), 333-351.

Kola-Oyeneyin, T., Kuyoro, M., Olanrewaju, T. (2020). Harnessing Nigeria's fintech potential, www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Middle%20East%20and%20Africa/Harnessing%20Nigerias%20fintech%20potential/Harnessing-nigerias-fintech-potential-vF.pdf, accessed on 25/12/2020.

Lago, C. (2021). Digital banking boosts financial inclusion, new business models in Africa, www.cio.com/article/3433858/digital-banking-boosts-financial-inclusion-new-business-models-in-africa.html, accessed on 25/01/2021.

Larsson, A., & Viitaoja, Y. (2017). Building customer loyalty in digital banking. *International Journal of Bank Marketing*.

Lee, M. C. (2009a). Factors influencing the adoption of Internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*. 8. 130-141.

Lee, M. C. (2009b). Predicting and explaining the adoption of online trading: An empirical study in Taiwan. *Decision Support Systems*, *47*(2), 133-142.

Makongoro, G. (2014). *Factors influencing customer adoption of mobile banking services in Tanzania* (Doctoral dissertation, The Open University of Tanzania).

Mashhour, A., & Saleh, Z. (2015). Community perception of the security and acceptance of mobile banking services in Bahrain: an empirical study. *International Journal of Advanced Computer Science and Applications*, *6*(9), 46-54.

Masrek, M. N., Mohamed, I. S., Daud, N. M., & Omar, N. (2014). Technology trust and mobile banking satisfaction: a case of Malaysian consumers. *Procedia-Social and behavioral sciences*, *129*, 53-58.

Min, Q., Ji, S. and Qu, G. (2008). Mobile Commerce User Acceptance Study in China: A Revised UTAUT Model, *Tsinghua Science and Technology*, 13, 3, 257-264.

Mohammadi, H. (2015). A study of mobile banking loyalty in Iran. *Computers in Human Behavior, 44*, 35-47.

Mokhtar, S. A., Katan, H., & Hidayat-ur-Rehman, I. (2017). Mobile banking adoption: The impact of social influence, ubiquitous finance control and perceived trust on customer's loyalty. *Journal of Science International* 29(4). 820-836.

Mortimer, G., Neale, L., Hasan, S. F. E., & Dunphy, B. (2015). Investigating the factors influencing the adoption of m-banking: a cross cultural study. *International Journal of Bank Marketing*.

Okpara, G.C. (2009) ''Bank failure and persistent distress in Nigeria: A Discriminant Analysis''. Nigeria Journal of Economic and Financial Research. Vol. 2 No.1

Owusu, G. M. Y., Bekoe, R. A., Addo-Yobo, A. A., & Otieku, J. (2020). Mobile banking adoption among the Ghanaian youth. *Journal of African Business*, 1-22.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet research*.

Priya, R., Gandhi, A. V., & Shaikh, A. (2018). Mobile banking adoption in an emerging economy. *Benchmarking: An International Journal*.

Proctor, D. (2019). What is digital banking? www.temenos.com/us/news/2019/12/19/what-is-digital-banking/, accessed on 17/07/2020.

PwC. (2020). Changing competitive landscape. Fintech and the banking sector in Nigeria. https://www.pwc.com/ng/en/assets/pdf/fintech-banking-sector-nigeria.pdf, Accessed on 10/07/2023.

PwC. (2020). Impact of the COVID-19 outbreak on digital payments. https://www.pwc.in/assets/pdfs/consulting/financial-services/fintech/point-of-view/pov-downloads/impact-of-the-covid-19-outbreak-on-digital-payments.pdf

Safeena, R., & Date, H., Kammani A., & Hundewale, N. (2012). Technology use and Indian consumers: Study on mobile banking. *Int. J. Comput. Theory Eng, 4*(6), 1020-1024.

Serianu (2017). Africa Cyber Security Report 2017: Demystifying Africa's Cyber Security Poverty Line, Nairobi, www.serianu.com/downloads/AfricaCyberSecurityReport2017.pdf, Accessed on 15/09/2020.Shaikh, A. A., & Karjaluoto, H. (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, *32*(1), 129-142.

Sivathanu, B. (2018). Adoption of digital payment systems in the era of demonetization in India: An empirical study. *Journal of Science and Technology Policy Management*.

Strite, M. and Karahanna, E., (2006) National Cultural Values in Technology Acceptance, *MIS Quarterly*, Vol. 30 N°3, p 704.

Van Deventer, M., De Klerk, N., & Bevan-Dye, A. (2017). Influence of perceived integrity and perceived system quality on Generation Y students' perceived trust in mobile banking in South Africa. *Banks and Bank Systems*, *12*(1-1), 128-134.

Van Deventer, M. (2019). Antecedents of Trust in Mobile Banking Amongst Generation Y Students in South Africa. *Acta Universitatis Danubius. Œconomica*, *15*(3), 123-141.

Wamai, J., & Kandiri, J. M. (2015). Determinants of mobile banking adoption by customers of microfinance institutions in Nairobi County in Kenya. *International Journal of Science and Research*, *6*(6), 2279-2286.

World Bank (2019a). Available at data.worldbank.org/indicator/SP.POP.TOTL?locations=ZG, accessed on 20/07/2020.

World Bank (2019b). Available at data.worldbank.org/indicator/FB.CBK.BRCH.P5?locations= NG, accessed on 15/07/2020.

Worldfinance.com (2020). Available at worldfinance.com/strategy/nigerian-banking-remains-unshaken-despite-a-financially-turbulent-year, accessed on 10/05/2020.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204.

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, 27(3), 425–478.

Yu, C. S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. *Journal of electronic commerce research*, *13*(2), 104.

Zhang, Y., Weng, Q., & Zhu, N. (2018). The relationships between electronic banking adoption and its antecedents: A meta-analytic study of the role of national culture. *International Journal of Information Management*, *40*, 76-87.

Zhou, T. (2012). Examining mobile banking user adoption from the perspectives of trust and flow experience. *Information Technology and Management*, *13*(1), 27-37.