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The Impact of Perceived Security on E-Trust, E-Satisfaction and Adoption of Electronic Banking in Nigeria: A Conceptual Review

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Abstract: *Studies in the field of information technology and consumer behavior have established that adoption of e-banking is determined by several factors. As discussed in this paper, some of these factors include perceived security, e-satisfaction and e-trust. However, no agreement has been reached among the scholars since the findings of these studies remain inconclusive. This conceptual paper has therefore introduced the mediating effect of e-trust and e-satisfaction in the context of Nigeria with the purpose of enhancing the relationship between e-banking adoption and perceived security. With this attempt, a major gap has been filled theoretically while a call has been put forward to future researchers to empirically test conceptual framework of this study. When these relationships are tested empirically, e-banking services designers, banks policy makers, and marketers will be able to draw a lot of implications that will practically help to improve the rate of adoption of e-banking in Nigeria.*

Keywords: *Adoption, E-banking, E-satisfaction, E-trust, Perceived Security*

I. Introduction

Electronic banking (E-banking) has become the order of the day especially with the high penetration of internet technology across the globe (Santouridis & Kyritsibanking, 2014). It is a new technology that is helping the service provider to offer a range of banking services like funds transfer, standing order, cash withdrawal, bill payment and so on without necessarily interacting directly with the customers (Aldas-Manzano, Lassala-Navarre, Ruiz-Mafe & Sanz-Blaz, 2009; Juwaheer, Pudaruth & Ramdin, 2012). Evidences have equally shown that banks are making a lot of profits through e-banking platforms while customers can execute such services at their convenience without any restrictions (Abushanab, Pearson & Setterstrom, 2010; Sathye, 1999).

Despite the benefits of e-banking however, evidence has shown that its rate of adoption in Nigeria is seriously poor especially when compared with other African and developed countries (Adesina & Ayo 2010; Ezeoha, 2005; Odumeru, 2012; KPMG, 2013). KPMG establishes that despite that electronic payment transactions have reached a sum of N80 billion per day as at 2011 with a potential of N150 billion Naira in 2014, the rate of e-banking adoption is still very low. One of the key reasons for such is high rate of online insecurity and fraud that is prevalent in Nigeria (Adesina & Ayo, 2010; Ezeoha, 2005). This can be substantiated by the recent ban of Nigeria electronic banking cards usage in the USA, China and some other countries (Punch, 2015).

Furthermore, earlier studies have equally established that e-frauds, news of phishing, electronic scams and other related frauds have continued to intimidate both active and potential users of e-banking generally (Yap, Wong, Loh & Bak, 2010; Yousafzai, Pallister & Foxall, 2009). In fact, it has also been asserted that using internet technology to provide financial services is not living up to the expectation of users for such reason (Teoh, Chong, Li & Chua, 2013). For instance, Ezeoha (2005) and Kesharawani and Radhakrishna (2013) in their studies report that generally, users of e-banking are apprehensive while using e-banking channels due lack of security. Ezeoha in particular reports that Nigeria has become notorious for e-crime related activities with its negative effect on e-banking platforms usage. This has therefore cumulated to lack of trust and high level of dissatisfaction among the users who now prefer to patronize the branches to execute their transactions.

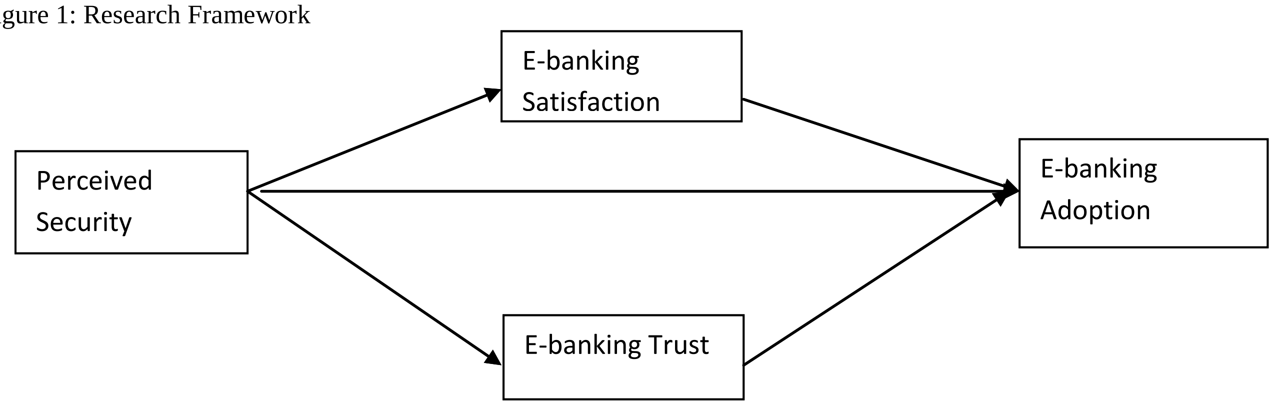
In view of related banking frauds in Nigeria generally, Central Bank of Nigeria has made several pronouncements regarding successful and attempted frauds (CBN, 2013). For instance, the apex bank reports that fraud and forgery cases in the recent time have increased with 6,395 cases involving the sum of N53.90 billion, against 4,527 cases amounting to N14.79 billion at the end of December 2012. The actual loss to banks rose by 38.2 per cent to N5.90 billion, from N4.30 billion and US$0.40 million at end-December 2012. Asides, this can further be substantiated with the recent news on banking fraud that revealed that Nigeria banks have lost up to N159 billion Naira cumulatively as at first quarter of 2013 to electronic frauds (Business day, 2013). This signifies that colossal sums have been lost to banking frauds and with its consequences on the rate of banking patronage generally.

Despite the high rate of e-banking frauds with its consequential effects on satisfaction, trust and adoption of e-banking, very little scholarly efforts have been made to address these issues in developing countries like Nigeria (Adesina & Ayo, 2010; Agwu, 2012; Ezeoha, 2005; Ikoh & Iboh, 2013). In view of this, this paper is an attempt to fill the research gap.

This paper is structured as follows: the second part reveals the conceptual framework while the parts that follow review related literature, formulate hypotheses, conclude and make future research recommendation.

Conceptual Framework and Hypotheses development

Figure 1: Research Framework



E-banking Adoption

Based on perspectives, literature on adoption laid strong emphasis on 'acceptance' and 'rejection' of a service or product. However, the most widely accepted definition is 'the acceptance and the continued use of an innovation' (Robertson, 1971, p. 56). Rogers (1962) in this view also regards adoption as the decision to fully use an innovation like e-banking while Eriksson, Kerem and Nilson (2005) assert that adoption is the signing of contract to use internet banking.

Accordingly when consumers use certain product or service they tend to learn by experience and this forms the basis for their choice and preferences (Bettman & Park, 1980; Foxall, 2003). Experience as it were is ambiguous in nature because it can be considered from the perspective of service content and/or of the channel of delivery. For example, experience determines the way customers will critically examine the performance of service they receive through one channel or multiple channels (Carlson & Zmud, 1999). This will also determine how they perceive the richness and/or safety of the channel (Carlson & Zmud, 1999). Importantly, usage reduces uncertainty and builds consumer confidence (Sheth & Parvatiyar, 1995), especially if the channel through which the service is received is perceived secured (Teoh et al, 2013). The ultimate objective of marketing organization is to ensure that the seller becomes part of a buyer's life concerning the need for the seller's product or service. This can only be achieved if the customers use the product.

However, while IT investments like e-banking and others are very substantial in many companies (Peppard, Ward, & Daniel, 2007) previous researches on technological adoption and management have suggested that anticipated benefits from the implementations of such system are often not realized (Hitt & Brynjolfsson, 1996). For instance, Neufeld, Dong and Higgins (2007) asserted that less than 50% of all IT projects initiatives ever meet their anticipated investment objectives. These failures according to some studies can be traced to some challenges in the business environment and therefore require quick interventions (Aiman-Smith & Green 2002).

While organizations must quickly react to many of these challenges (Umble, Haft & Umble 2003); investigation of those factors that are causing the failure may be essential for quick organizational decision. Importantly, the impact of a new technology on the performance of an organization can only be felt if such technology like e-banking is largely used (Hall & Khan, 2003; Yousafzai & Yani-Soriano, 2011). Since the adoption itself is a product of many factors; understanding of those factors affecting these decisions is essential to the technological change management.

Perceived Security

Importance of security has been largely acknowledged in the adoption of e-banking. Significantly, the absence of it however is regarded as a serious barrier that can prevent people from using e-banking platform (Yousafzai, et al, 2009). In e-commerce generally, security is seen as a threat that can bring about certain condition, event or circumstance that has the potential of causing economic hardship with respect to loss of data, destruction of information, abuse, fraud and perhaps a change in the original data (Kalakota & Whinston, 1997; Yousafzai et al, 2009).

In this view, Reavley (2005), also asserts that the risk of security may occur as a result of present of a hacker(s) who might hack the account and defraud e-banking users and this has persistently lead to fear as most users are nursing the feelings that their money may be stolen (Juwaheer, et al, 2012). Based on this notion, many users have formed the impression that e-banking platform is not secured since intruders can have limitless access to private financial information and use such for fraudulent purpose (Peterson, 1997). This position has been initially established by Sathye (1999) who found that 73 per cent of the customers in Australia were not willing to adopt online banking as a result insecurity. In addition, Ezeoha (2005) & Kesharawani & Radhakrishna (2013) also established that the fear of insecurity constitutes a major threat and fear to the users of e-banking in Nigeria and India respectively. In addition, Littler & Melanthiou (2006) also assert that the issue of insecurity is capable of generating a mindset that revolves round loss of money while using e-banking. In fact this circumstance has equally made KPMG (2013) to assert that it is only a service provider who can crack the conundrum of securing nation-wide full-service of internet banking in Nigeria can have the potential of mining the huge benefit of e-banking.

Importantly, extant literature has empirically established a relationship between Perceived security, satisfaction, trust and e-banking adoption and other related online adoption fields (Eid, 2011; Ranjbarian, Fathi & Rezaei, 2012; Yousfzai et al, 2009). This indicates that a system that is secured is capable of generating high level of satisfaction and trust among the users and if otherwise contrary result will be achieved and which may lead to low rate of adoption.

Based on the above arguments, this study hereby formulates the following hypotheses:

H1: Perceived Security has an influence on the adoption of e-banking

H2: Perceived Security has an influence on E-banking satisfaction

H3: Perceived Security has an influence on E-banking Trust

E-banking satisfaction

The concept of customer satisfaction can be traced to the research of Cardozo (1965) and Howard and Sheth (1969). These are the studies that built a beginning and scientific platform that other scholars continue to build on (Campo and Yague, 2009; Liebanas-Cabanillas, et al, 2013).

Customer satisfaction concept can be approached based on two criteria (Giese & Cote 2000; Moliner, 2004). The first perspective which is conceptual defines satisfaction as a process (es) and/or a type (s) of response (s) that emanate from customers while the second approach (referential criterion) reflects aspects of the situation in which this process (es) and/or responses occur. Even though these two criteria are not mutually exclusive, previous studies have defined satisfaction from different and complimentary perspectives for the purpose of enhancing our comprehension (Liebanas-Cabanillas, et al, 2013).

With regards to the conceptual criterion, three steps of evaluation, cognitive and affective response process are obtainable (Liebanas-Cabanillas, et al, 2013). The evaluation phase is regarded as a stage where the customers carry out an evaluation of the product, needs and expectation with regards to performance. The cognitive phase is a response phase that takes place as a result of consumption experience and evolving from an evaluation or the cognitive comparison of variables such as efforts and rewards, expectations and performance and so on. The affective response stage describes happiness, surprise and/or displeasure that arise from consumption of a product and is strongly linked to the first two stage of evaluation and cognitive.

With respect to satisfaction in online service generally, many studies have been carried out (e.g, Eid, 2011; Kuo & Wu, 2012; Ranjibarian, 2012; Sheng & Liu, 2010). For instance, the studies of Sheng & Liu (2010); Kuo & Wu (2012) and Eid (2011) have all confirmed that when online service providers improve on the rate of customer satisfaction the customers repurchase intention and loyalty are guaranteed. However the study of online satisfaction in the financial sector has recently attracted the attention of marketing researchers (Liebanas-Cabanilla. 2013) and need further research.

In this context, Mattila (2001) asserts that success of e-banking strongly depends on customer satisfaction and of the view that for this to be achieved the banks must use different means to personalize their services and products to meet the needs of their customers. Eid (2011) also confirms that for e-satisfaction to be achieved in the context of e-commerce like e-banking, the customers must feel secured. Casalo et al. (2008) showed that satisfaction with previous interactions with the bank’s web site had a positive effect on customer continuous patronage and referrals (Liebanas-Cabanillas et al). Eid (2011) equally establishes mediating effect between e-commerce adoption and perceived security while Chan and Chen (2009) also established positive relationship between perceived security and customer satisfaction in online environment through mediating effect.

Based on the above arguments, this study hereby formulates the following hypotheses:
H4: E-satisfaction has influence on E banking adoption
H5: E-satisfaction mediates between perceived security and E-banking adoption

E-banking Trust

The nature of online service delivery gives rise to a lack of trust in e-banking among some customers. In an online environment, there is no direct physical contact between buyer and seller (Yousafzai et al, 2003, Yap et al, 2010). This spatial distance implies that consumers do not have opportunity to assess physical cues, acts of sales people or the physical space/store in order to judge trustworthiness (Reichheld & Schefter, 2000). This condition consequently has made transactions being carried out online not to involve a simultaneous exchange of goods (or services) and money (Grabner-Kraeuter, 2002). This has therefore brings about fears and uncertainty with the presence of hackers that may intrude privacy in online services (Hoffman et al., 1999; Yoon, 2002).

Yousafzai et al (2009) assert that one of the main antecedents of electronic banking trust is perceived security. This has been initially established by other studies that affirm that the feeling of security is a fundamental prerequisite for ensuring trust in online environment or any other commercial activity where sensitive information can be supplied or exchanged (Adam et al. 1999; Dayal et al., 1999; Hoffman et al., 1999).

In view of the doubt and uncertainty that have overwhelmed the users of e-banking due to lack of security, it is therefore very important for marketers to fill the vacuum as this will ensure that e-banking grows at anticipated rate. This is important as trust plays a large role in determining consumers' initial and continuous use of the e-banking service (Suh & Han, 2002; Lichtenstein & Williamson, 2006). Extant studies have empirically shown that trust is also significant for both intent and long commitment to the e-banking adoption (Kassim & Abdulla, 2006; Liu & Wu, 2007; Vatanasombut et al., 2008; Yap, et al, 2010).

Bank managers must therefore comprehend the way trust in the adoption of e-banking is developed since this forms the basis for profit making (Gan et al. 2006; Yousafzai et al, 2003). However, for profit to be made, significant efforts must be put in place to convert non-adopters to adopters by allaying their fears that e-banking is secured (Vatanasombut et al. 2008). This can be achieved by ensuring that e-banking channels are equipped with latest antifraud technology that will protect password, ensure data encryption, and authenticate the integrity of information supplied (Maditinos, Chatzondes & Sarigiannidis, 2013). All these will bring about customer retention/adoption since trust is a prerequisite to long term commitment (Morgan & Hunt1994).
Based on the above arguments, this study hereby formulates the following hypotheses:
H6: E-Trust has influence on E banking adoption
H7: E-Trust mediates between perceived security and E-banking adoption

II. Conclusion And Suggestions For Further Research

Studies in the field of information technology and consumer behavior have established that adoption of e-banking is determined by several factors. As discussed in this paper, some of these factors include perceived security, e-satisfaction and e-trust. However, no agreement has been reached among the scholars since the findings of these studies remain inconclusive. This conceptual paper has therefore introduced the mediating effect of e-trust and e-satisfaction in the context of Nigeria with the purpose of enhancing the relationship between e-banking adoption and perceived security. With this attempt, a major gap has been filled theoretically while a call is made to future researchers to empirically test conceptual framework of this study. When these relationships are tested empirically, e-banking services designers, banks policy makers, and marketers will be able to draw a lot of implications that will practically help to improve the rate of adoption of e-banking in Nigeria.

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