

# Identifying Factors that Determine Intention to Use Electronic Banking: A Conceptual Study

Oluyinka Solomon<sup>1</sup>, Alina Shamsuddin<sup>2</sup>, and Eta Wahab<sup>3</sup>

<sup>1,2,3</sup>Faculty of Technology Management, Business and Entrepreneurship

<sup>1,2,3</sup>Universiti Teknologi Tun Hussein Onn Malaysia

86400, Batu Pahat-Malaysia

*Received: August 16 2013*

*Accepted: October 30 2013*

## ABSTRACT

Existing studies has examined consumer acceptance of electronic banking in different dimensions mostly as a dichotomy (acceptance/non-acceptance), however, neglecting the core process underlying acceptance. The objective of this particular research is to conceptualize a model for electronic banking acceptance in Nigeria by identifying the factors that are important in the interpretation of the intention to accept electronic banking. The paper reviews the literature on the technology acceptance model (TAM), and justifies the use of this model to explore the factors contributing to the extent of consumer's acceptance of electronic banking transactions. This conceptual study proposes twenty research hypotheses derived from previous other models of online banking users. The study investigated the factors related to decision making when people consider and evaluate the usage of an online banking transactions. Trust, financial security, information quality (all adoption barriers), time and money (both adoption benefits) were found to predict potential usage. That is willingness to use the online banking system will be possible if organizations can develop trust relationships with individuals, assure them that their financial details are secure, provide information that is relevant, accurate and up-to-date, and save individuals time and money.

**KEYWORDS:** Technology Acceptance; Electronic Banking; Electronic Commerce; Online Trust; Conceptual Framework; Nigeria

## 1.0 INTRODUCTION

### Background of the Research

It is a wide knowledge that conceptual and hypothesized theories are the basics guidance to research results, while research findings are otherwise used to modify theories. To commence the task of unveiling the complex processes of electronic banking transactions, current research evidence must first be considered critically and objectively, to provide an up-to-date foundation of knowledge and to identify limitations. This includes identifying and addressing areas of research beyond electronic banking usage for banking transactions, in particular the pervious literature on various existing frameworks on technology acceptance models and electronic banking usage in commerce, electronic commerce and online trust [1, 2, 3]. Existing theoretical models describing the use of electronic commerce must be examined, and then critically considered with respect to the current state of evidence. Development of a conceptual model attempting to explain electronic banking in the Nigerian context can then be accomplished through synthesizing and building upon these current frameworks to provide a more comprehensive picture of the multi-dimensional nature of electronic banking transactions in the delivery of goods and services. Moreover, the influence of electronic technologies cannot be underestimated because these technologies present organizations with both prospects and coercions [4, 5, 6]. Although many business analysts overestimated the influence of these technologies when they were first introduced. However, advances in information and communication technologies and the emergence of the internet have revolutionized business activities enabling new ways of conducting businesses referred to as e-commerce [7, 2]. Studies show that the presence of technologies has shaped, and will continue to advance in shaping business practices for years to come. Among the industry that witnessed a major impact of electronic technology is the banking industry. Banking is a service industry where most services or transactions can be provided via electronic technology [2, 8]. Furthermore, the banking industry has participated heavily in information technologies, and these technologies are broadly exploited in their daily operation. Internet and World Wide Web (WWW) offer banks with a new channel in getting to their customers. Previously, customers could perform banking transactions only at a bank's premises, or by ATM or telephone, but the electronic technologies has opened new frontiers for banks to introduce online banking to their customers. Banks are also benefiting from e-banking in terms of lower costs and better customer service [9, 5]. In addition, e-banking reduces the likelihood of errors in data entry by deferring the task directly to the customers. Customers benefit from

this new channel of delivery. E-banking gives them the option to perform banking transactions and other related activities from home. They can save money on petrol/diesel and eliminate the inconveniences associated with driving to the bank. E-banking also allows customers to reduce or eliminate cheque writing to settle debts. Another important benefit is the convenience of performing most banking transactions all round the clock. Despite aforementioned advantages, many customers of financial institutions have not embraced this form of banking system. Like other innovations, E-banking faces many problems associated with its acceptance. Since the success or failure of this technology will depend on the leverage of usage, due to this, there is need to determine which factors influence customers' acceptance of E-banking. The objective of this paper is to document this process of evidence review and model creation. Relevant research will be reported and current conceptual models discussed. Based on this literature, a new conceptual model will then be proposed which is amenable to testing through empirical research. With this new model we hope to predict the usage of internet banking and thus identify various variables and barriers that mediate the experience of online banking and moderate the impact of such on commerce and trade on the well being of the Nigerian economy.

## 2.0 DISCUSSIONS

### 2.1 The Research on Electronic Banking Acceptance

The introduction of Automated Teller Machine (ATM) into the financial landscape has revolutionized electronic business transactions and changed the way businesses and daily transactions are carried out in many countries. Furthermore, the ATM is considered the most noticeable form of electronic technology targeted at retail consumers [10]. The slow acceptance of electronic banking practice in many developing countries is rapidly changing for the better considering current development statistics. Specifically, the awareness of e-payments in Nigeria is increasing and it is reported to account for #360 billion worth of transaction in 2008 [10]. Recent development trends in the country shows that with improved technological development and provision of basic infrastructure in the country shall result to the enhanced e-banking and e-Payment services with overall reduction in the amount of money in circulation [11]. Several past studies on internet banking are reviewed in this paper. Alsajjan and Dennis [12] investigated the influence of beliefs and consequence on ones aim to continue adopting internet banking. They used data from 122 online customers of one of the largest national banks in the United States as sample of the study. The study was centered on the expectation-confirmation Model and the technology acceptance model. The authors hypothesized that consumer's intention to continue using internet banking were predicted by their fulfillment with the services and perceived usefulness and the show that satisfaction with internet banking were the strongest predictor of users' continuance intention followed by perceived usefulness.

### 2.2 Research on Socio-Cultural Characteristics

Socio-culture describes something that involves the social and cultural aspects of the community, the people around you and their family backgrounds. This includes human behaviors, education background, languages, communications, actions, values, religious beliefs, social groups, trust, norms and ethic perceptions [13]. The societal culture plays a big role on technology acceptance [14, 4]. Some of the domestic cultural features of a particular community is found by [15] to pose important challenges on technology acceptance. The study indicated that socio-culture is one of the factors hindering acceptance of technology in the developing countries. It was affirmed that one of the biggest socio cultural factors that hinders technology adoption is trust in online technology. Lack of transactional trust between parties is a major problem. Other authors agreed that trusts in developed countries have ways to expand the basis of confidence by applying the law impartially and to adapt to new technological environment [10, 16]. Trust was argued to be an essential requirement for secure electronic trading. Lawrence [17, 18] added that most users in developing countries are not willing to provide sensitive financial information over the Web.

### 2.3 Research on Trusts in Online Environment

Trust is a willingness to be vulnerable to the actions of another person or people [19, 15]. Mayer et al. [19] explained that integrity is the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable. Integrity is users' perceptions that the service provider will be fair, honest and adheres to reasonable conditions of transactions. The propensity to trust is stable within-party factor that will affect the likelihood of one party to trust another [19]. People with different developmental experiences, personality types, and cultural backgrounds vary in their propensity to trust. However, trust is based on expectations that the other person will behave in a responsible manner and will not take advantage of a dependence upon him or her [20]. It is an important component in any social and business relationship whenever risk and uncertainty exist. Sohail and Shanmugham

[21] opine an explanatory examination of the factors that influence internet banking acceptance among retail users of banking products. The study used 300 responses and staff at two leading universities in Malaysia and found that trust in one's bank influence him or her to use internet banking. Other factors that influence the adoption were internet accessibility, attitude towards change, computer and internet access costs, security concerns, ease of use and convenience. Figure 1 below shows the model on trust as propounded by Mayer et al [19].

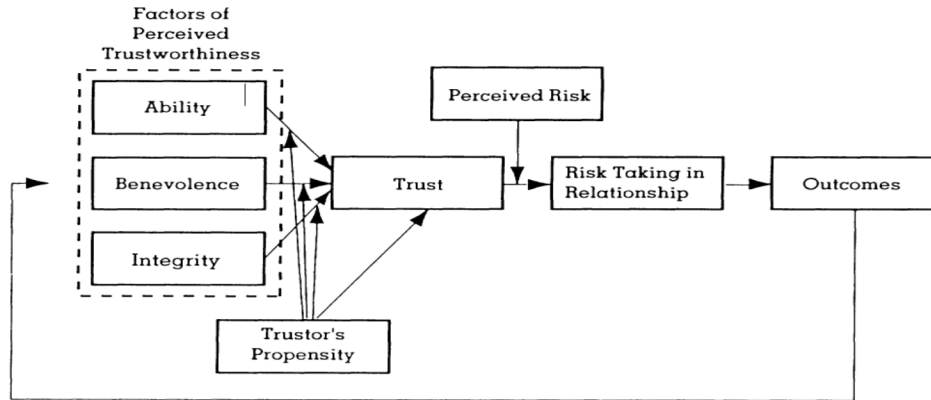


Figure: 1 Trust Model  
Source: Mayer et al. [19]

### 3.0 LIMITATIONS OF CURRENT RESEARCH

Nigeria has been recently recognized as one of the fastest growing countries in Africa in terms of internet penetration [8, 10]. They suggested that among the contributing factors may include the increasing use of compatible mobile phone, increasing usage of personal computer and the internet, the number of banks offering e-banking services, and the convenience and ease of online financial management and planning through new software applications and 4G mobile networks. Despite reported growth of internet users in most developing countries, total percentage of online users in developing countries still lag very far behind those from the advanced countries with only 25% of them online as at the end of the year 2012 while the developed countries figure is on average of 70% especially in places such as Iceland, the Netherlands, Norway and Sweden peaking at about 90% of users [22]. Furthermore, the recent study of an American agency reported that about 74% of Americans perform electronic banking via the internet to pay bills and other banking transactions [22], this was an increase compared to the 2007 report which was 84M Americans. Interestingly, the perceived growth in the number of internet users in these developing countries notwithstanding, empirical findings reports that the acceptance of electronic banking among Nigerian banks customers is nowhere matched when compared to their counterparties in other countries. Authors opine that the problem may not be unconnected to the issues in the broad context of information and communication technology acceptance. This exposed the fact that a comprehensive research in the field of electronic banking has been quite inadequately examined mostly in developing countries such as Nigeria. Most of the examined studies in this context had been exploratory [23, 24, 10, 12]. In order to contribute to existing knowledge on this subject, there is need for a detailed review of theories and models to provide a sound foundation for future research. As a result of the foregoing, the objective of this study is to identify the factors that are important in the interpretation of the intention to accept electronic banking in Nigeria. This study proposed the adoption of the decomposed theory of planned behavior, a theory well-grounded in MIS research to conceptualize a model for this research.

### 4.0 REVIEW OF THEORETICAL FRAMEWORKS

The purpose of this section is to review the theoretical literature and empirical studies about technology acceptance. This study also examines previous publications on factors that influence the acceptance of information technology (IT). Due to inadequacy of grounded data on the information technology arena, researchers have turned to models that have been developed in other areas as a starting point for their research. In the case of the anticipation of an individual's intention to adopt IT and IS, researchers have borrowed frameworks from social psychology as a guide for their investigation [25]. For instance, deep and strong intentions models: as the theory of planned behavior [26] have been widely adopted to discuss and anticipate the intention to adopt information technology. This section

further describes different competing models that have been generously used by IS researchers to anticipate the intention to adopt and some of these models will be examined in the next section.

**4.1 Innovation Diffusion Theory:** The earliest theory on technology acceptance is based on Roger's [27] theory of diffusion of innovation (IDT). This theory posits that innovation adoption is a process of uncertainty about the young technology; individuals will gather and harmonize information about using the technology. Beliefs then cause individuals to accept or reject the technology. Nor and Pearson [9] established diffusion as "the process in which an innovation is communicated through certain channels over time among the members of a social system. As expressed in this description: innovation characteristics, individual user characteristics, adopter distribution over time, diffusion networks, innovativeness and adopter categories, and the individual adoption process. After analyzing different past innovation diffusion researches, this research found Rogers [27] five characteristics of innovations that consistently influence the adoption of technologies as relative advantage, compatibility, simplicity, observability and triability. The theory has been vigorously utilized in IT acceptance research [28] and tested on IT technologies such as operating systems Internet banking.

**4.2 Theory of Reasoned Action:** While the IDT draws on perceived characteristics of technology to explain user's behavior to adopt the technology, the theory of reasoned action (TRA) looks at beliefs within the individual to explain adoption behavior [29]. The TRA hypothesizes that a behavior is predicted by an individual's intention to engage in a given behavior. Intention, in turn, is predicted by two factors, the individual's attitude towards the behavior and the subjective norm [30]. Attitude toward the behavior reflects an individual's evaluation or general feeling toward a target behavior. It indicates an individual's positive or negative evaluation about performing the behavior. The theory postulates that the intention to perform a behavior will be higher when the individual has positive evaluation of performing the behavior [26]. Theory of reasoned action (TRA) has been widely applied in variety of research settings, from predicting the intention to seek psychological services for alcohol abuse [31], to predicting the consumption of fats and oils. The theory has also been used in the information system field and confirmed the ability of the model to predict behavioral intention to use a certain technology. Thus, it is reasonable to believe that theory of reasoned action will provide a very good foundation for this study to investigate intention to use e-banking services, because this study involve behavioral intention of consumers' toward adoption of e-banking services.

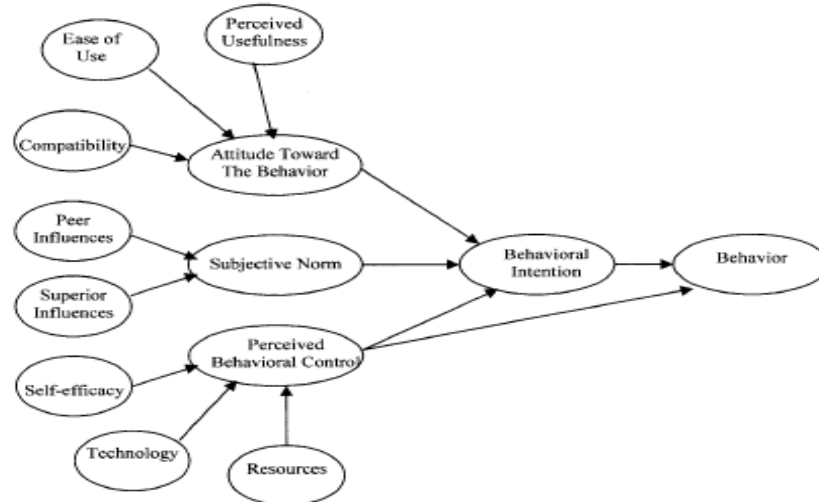
**4.3 Theory of Planned Behavior:** Another related technology adoption model that has been widely used in technology acceptance research is the theory of planned behavior (TPB). TPB is an extension of the theory of reasoned action [30]. TPB added an additional belief (i.e., perceived behavioral control) to explain behavioral intention. Hence, the theory assumes three independent determinants of intention: attitude toward the behavior, subject norm, and perceived behavioral control [26]. The beliefs, attitude toward the behavior and subject norm are identical to those previously discussed for the theory of reasoned action. Therefore emphases were shown on the third belief (i.e., perceived behavioral control). Perceived behavioral control reflects an individual's perception of ease or difficulty of performing a target behavior. It is a product of control beliefs about a certain behavior and the individual's perceived facilitation of each control belief [26, 30]. The theory has been used in a wide variety of setting including IT acceptance research. Utilizing the TPB in a study on students' intention to use a spreadsheet, Matheson [32] found that the theory explained the intention to use the software quite well was predicted by attitude and perceived behavioral control. Although, the hypothesized effect of subjective norm to intention was unsupportive in the study. The findings from the above studies support the adoption of the Theory of Planned Behavior in the current study to investigate behavior intentions to adopt e-banking services.

**4.4 Technology Acceptance Model:** Beside IDT and TPB another widely used theory in IT research to predict human behavior is the Technology Acceptance Model [33]. TAM has been adopted from the theory of reasoned action [30]. TAM suggests that attitudes predict intentions, and intentions predict behavior. According to TAM, adoption behavior is determined by the intention to use a particular system and the intention is determined by the attitude, which in turn is determined by the perceived usefulness and perceived ease of use of the system [33]. The model has been tested on technologies such as voice mail, e-mail, software, groupware, and World Wide Web [34, 2]. The strength of TAM is its predictive power and the small number of constructs to predict intention [28]. In addition, it is quite robust and can be applied to a wide range of technologies [33]. Kim et al [35] study investigate the relationship between antecedents including IT quality, perceived value, and users' acceptance of hotel front office systems by adopting an extended TAM. Perceived ease of use, perceived usefulness, attitude towards use, and actual use were investigated including IS quality and perceived value. Empirical findings indicate that the significance of all but two new variables, study is able to find the acceptance of hotel front desk from the perspective

of hotel frontline employees through the external variables of IS quality and perceived value in order to enhance the model. Lin et al [36] combined the TAM, and DTPB, the research harmonized opinion of on-line shoppers attitude patterns for travel and finds that nonlinear fuzzy network systems was used to test and verify the sample data. The study finds that among the three independent variables in this study, product marketing attracts customers most in respect to the “Marketing Mix”. The possibility of misunderstanding information is higher in respect to the “Perceived Risk” of information from customers. The close connection of the family works more effectively for decision making in respect to the “Subjective Norms”. The three latent independent variables of “Marketing Mix”, “Perceived Risk” and “Subjective Norms” are the three key factors that directly or indirectly influence the “Attitude” and the “Behavioral Intention” in the article.

#### 4.5 The Decomposed Theory of Planned Behavior

While the decomposed theory of planned behavior based on the work of Taylor and Todd [34], and combined aspects of the theory of planned behavior [26] with aspects of innovation diffusion theory [27, 13]. The theory postulate that attitude, subjective norm and perceived behavioral control will influence the intention to use a technology. Taylor and Todd [34] extended the theory by decomposing the attitudinal, normative, and perceived control beliefs into multi-dimensional constructs this provided higher explanatory power and a more precise understanding of the antecedents of behavior. Figure 2 below shows the model for the decomposed theory of planned behavior as propounded by [34].



**Figure 2: Decomposed Theory of planned Behavior [34]**

Search through established databases returned that several researchers have used the DTPB as their research framework. For instance, the DTPB was compared to TAM and TPB to predict information technology usage. Utilizing 786 business students and using computing resource center as the target technology, Taylor and Todd [34] found that the DTPB provided well predictive behavior when compared to TAM and TPB. In another framework of DTPB, another author employed DTPB to explore which type of treatment chronic pain patients prefer, the traditional or an Internet treatment, and which factors contribute to their preference [37]. Qualitative semi-structured interviews were conducted with 25 patients with chronic pain from a pain rehabilitation centre in the Netherlands. The study shows that participants considered an Internet treatment very helpful as a complement to the traditional treatment or as follow-up, but would not choose it as an autonomous treatment. The reasons mentioned by participants were tailored to the DTPB and were mainly related to the perceived usefulness. Decompose theory of planned behavior was applied to investigate twelve factors that may influence internet banking acceptance in Jordan [38]. DTPB model in this study provide a vigorous framework to understand the antecedents of Internet Banking Adoption in Jordan. The results show that all hypotheses were supported except for two hypotheses related to compatibility and technology support. Similarly, [39] examined channel-migration behavior using a DTPB with crossover effects in brick-and-mortar stores and the Internet [8]. An online survey was administered at four research sites (N = 547) and factor analysis and SEM, with multi-group analysis, were utilized for data analysis. The study

indicates that Hedonic beliefs did not influence either of the channels; utilitarian beliefs were significant predictors in both brick-and-mortar stores and the Internet. Based on previous studies of [34] showed that the decomposed model has better explanatory power over the theory of planned behavior. Conversely, literatures argued against decomposed theory of planned behavior that TAM provides several advantages over it in terms of determining IT acceptance.

## 5.0 DEVELOPMENT OF IMPORTANT CONSTRUCTS OF THE STUDY

As previously stated, theoretical model for this study will be based on the DTPB process of attitudinal, normative and control beliefs into multi-dimensional beliefs constructs which will be based on Taylor & Todd [34] research. In this section four multi-dimensional constructs i.e. Attitude, Subjective Norm, Perceive Behavioral control, and Trust will serve as map for this section to provide related references for the decomposition of the constructs. The argument and support related to each construct and its decomposed factors will be discussed in more detail when discussing the hypotheses that were related to the constructs. Although, literatures established voluntariness, visibility, result demonstrability, perceive relation. Triability, perceived image, perceived compatibility and perceived ease of use as constructs to determine attitude towards any intention. Adopting several studies which established that e-banking is always voluntary, and therefore, the issue of individuals being forced to accept this technology does not arise [3, 12, 18]. Similarly, the studies found visibility and result demonstrability irrelevant to their studies and argued that individuals typically do banking transactions privately [8, 6, 34]. By measuring behavioral intention, this study will rationally assume that the entire influencing factors tested in this study will also affect the actual usage. Thus, this study suggests twenty hypotheses to be examined in this study and each is discussed to show how they affect the intention to use of electronic banking.

### 5.1 Construct on Attitude towards Intention the Use E-Banking Hypotheses

There is abundant evidence that attitude is a favorable or unfavorable evaluative reaction toward something or someone exhibited in ones beliefs, feelings, or intended behavior [40]. Some authors established that an attitude towards adopting an innovation is derived from an individual's beliefs that adopting the innovation will lead to certain consequences which indicate an individual's positive or negative evaluations about performing the behavior [34, 35, 1]. Another researcher advocates that attitude is a product of belief about a behavior and the individual's evaluation of the outcome resulting from that behavior [26]. Intention to perform a behavior will take place if the individual has positive evaluation of performing the behavior. Matheson [32] empirically showed that one's intention to use a spreadsheet could be predicted by his attitude toward it. In a study comparing TRA, TPB and DTPB, Taylor and Todd [34] found that attitude towards the computing resources center positively affected a user's intention to use it. The findings from these reviews result to the first hypotheses.

**Hypotheses 1:** Attitude about electronic banking may likely affect the intention to use the technology.

### 5.2 Construct on Subjective Norm towards Intention the Use E-Banking Hypotheses.

Subjective norm refers to an individual's perceptions of the social pressure to engage in a certain behavior. The idea suggests that attitude and beliefs of others in groups to which an individual belongs will shape his or her behavior toward usage of a specific technology [9, 26]. Based on established thought on the TPB that subjective norm may have a significant effect on one's intention to adopt a certain behavior. The relationship has received considerable support in empirical studies of IT related literature. Yang et al [41] study on factors that influence intention to use an expert system showed that subjective norm was a significant determinant of intention. This study accepts the same result for the Internet banking adoption. Thus, this leads to the second hypothesis.

**Hypotheses 2:** Subjective norm may likely affect the intention to use electronic banking.

### 5.3 Construct on Perceived Behavioral Control towards Intention the Use E-Banking Hypotheses

Perceived behavioral control refers to one's perception of the ease or difficulty of performing the behavior of interest [42]. It reflects one's beliefs regarding access to the internal (e.g., ability and self- efficacy) and external factors (e.g., time and money) that may impede performance of the behavior. Thus, this leads to the third hypotheses.

**Hypotheses 3:** Perceived behavioral control may likely affect the intention to use electronic banking.

### 5.4 Construct on Individual's Trust on E-Banking Hypotheses

Trust is defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor control that other party's expectations [16]. The uncertain and risky environment requires individuals to analyze the situation and its consequences [17]. However, a situation can be difficult, and its consequences may not

be clear. In such a situation, one might adopt strategies that can overcome the uncertainty of the situation. Banking transactions are carried out over the counter and appear to be free of risk and uncertainty [43, 5]. In a study on the acceptance of Internet banking, [44] found that trust had a significant impact on the acceptance of Internet banking. In this study, we also hypothesize that an individual's level of trust in the security of transaction related to Internet banking will affect his or her intention to use banking. Thus, this leads to the fourth hypothesis.

**Hypothesis 4:** Trust may likely affect the intention to use Internet banking.

#### **5.5 Construct on Decomposing Individual's Attitude on E-Banking Hypotheses**

Perceived relative advantage refers to the degree to which an innovation is perceived as being better than its precursor [13]. It reflects one's assessment of the extrinsic benefits received when the innovation is adopted or used [9, 35]. Internet banking provides many benefits to banks' clients, and, it provides convenience. The users access their account and perform financial transactions from anywhere and at any time of the day. This "verticalness" eliminates the need to commute to the bank's physical location [8, 29]. Hypothetically, we should expect individuals who perceive Internet banking could provide all these advantages would have a positive attitude toward using the technology. In this study, we also theorize the influence of perceived relative advantage on attitude.

**Hypotheses 5:** Perceived relative advantage of using Internet banking absolutely affects the attitude towards using the technology.

#### **5.6 Construct on Perceived compatibility of E-Banking Hypotheses**

The degree to which an innovation is perceived as consistent with the existing values, past experience, and needs of potential was examined [27]. Compatibility is evaluated relative to the adopter's socio-cultural values and beliefs, previously introduced ideas, and client needs for new technology. In the long run, performing transactions online is expected to become part of our everyday life. Several studies have suggested the link between perceived compatibility and attitude. Another study on segmenting the non-adopter category in the diffusion of internet banking, establish that further segmenting the non-adopter category revealed meaningful differences between prospective adopters and persistent non-adopters [42]. However, considering empirical studies, we would expect individuals who perceive Internet banking as compatible with their values will likely have a positive attitude towards using the technology. Thus, this leads us to the sixth hypothesis.

**Hypothesis 6:** Perceived compatibility of electronic banking with one's values may likely affect the attitude toward using the technology.

#### **5.7 Construct on Perceived ease of Use of E-Banking Hypotheses**

Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of physical and mental effort [33]. The effect of perceived ease of use on attitude has been theorized and validated by many authors. Jahangir and Begum [45] studied the role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. However, from results of several previous researchers, the authors are able to formulate the seventh hypotheses.

**Hypotheses 7:** Perceived ease of using electronic banking may likely affect the attitude toward using the technology.

#### **5.8 Construct on Trial-ability of E-Banking Hypotheses**

Trial-ability has been reported to be the degree to which a new technology may be experimented within a limited basis [27]. Trial-ability allows the adopter to test run a new technology so that it gives meaning to the adopter. It was always believed that the greater the trial-ability of Internet banking, the more likely it would be adopted. Thus, this leads to the eight hypotheses.

**Hypothesis 8:** Trial-ability of electronic banking may likely affect the attitude toward using the technology.

#### **5.9 Construct on Perceived image of E-Banking Hypotheses**

Perceived image is the degree to which use of innovation is perceived to enhance one's image or status in one's social system. Past researches have shown that one of the motivation factors for individuals to adopt an innovation is the desire to gain social status and recognition. Authors also reported that on user acceptance of information technology they affirmed that subjective norm will positively influence perceived image. The influence of image on attitude toward adopting an innovation has been supported in a study conducted by [13]. The perception that the Internet banking enhances their images technologically socially may affect their attitude toward the technology. Therefore, this study hypothesized that individuals who believe Internet banking enhances their image are likely to have an affirmative attitude toward adopting the technology.

**Hypothesis 9:** Perceived positive image of adopting electronic banking may likely affect the attitude toward adopting the technology.

#### **5.10 Construct on Decomposing Subjective Norm of E-Banking Hypotheses**

Subjective norm refers to the individual's perception of the social pressures to adopt or not to adopt an innovation. Social influence causes a normative influence that occurs when individuals conform to the expectations of others [46, 37]. Researchers have identified several reference groups who may exert social pressure on individuals to perform certain behavior. Taylor and Todd [34] found that peers and superiors exert significant influence on individuals to use computers at computing resource centers. Hung et al. [47] also confirmed the significances of friends, colleagues, and relatives on their study on critical factors of WAP services adoption. Nor & Pearson [9] did an exploratory study into the adoption of electronic banking in a developing country. They found friends, family colleagues/peer were significant factors to electronic banking acceptance in Malaysia. From the literature above, this study proposed three reference groups namely: friends, family and colleagues/ peers who may affect individuals' perceived social pressure (i.e. subjective norm) on whether to adopt or not to adopt the Internet banking. This leads to the tenth, eleventh, and twelfth hypotheses.

**Hypothesis 10:** Friends' influence of using electronic banking may likely affect subjective norm.

**Hypothesis 11:** family members' influence of using electronic banking may likely affect subjective norm.

**Hypothesis 12:** Colleagues/peers' influence of using electronic banking may likely affect subjective norm.

#### **5.11 Construct on Decomposing Perceived Behavioral Control of E-Banking Hypotheses**

Perceived behavioral control refers to individuals' belief of their ability to perform a behavior [31, 13]. The beliefs are internal and external factors. The internal perception of behavioral control reflects one's self-confidence in the ability to conduct the behavior. The TAM framework and an agenda on interventions also concluded that external perception of behavioral control reflects on employee's will, still value perceived ease of use in forming perceptions about usefulness. Therefore, this study hypothesize that both self-efficacy and resource facilitating conditions will affect perceived behavioral control. This leads to the thirteenth and fourteenth hypotheses.

**Hypothesis 13:** Self-efficacy may likely affect perceived behavioral control.

**Hypothesis 14:** Resources facilitating conditions may likely affect perceived behavioral control.

#### **5.12 Construct on Decomposing Trust on E-Banking Hypotheses**

Hung et al [47] opine that trust is the perception of confidence in the electronic marketer's reliability and integrity [48] and the tasks presented by issues related to 'privacy' and 'security' in the electronic services. Hung et al [47] study also established trust is an important determinant of user acceptance of electronic tax filing and payment system. Huang [49] findings suggested that trust should be viewed as a multi-dimensional construct based on their empirical validation of trust measures that revealed the multi-dimensionality of the trust construct. The decomposition of trust as described above suggested that it is a multidimensional variable and composed of the attributes of three actors; the trustor, trustee and environment.

#### **5.13 Construct on Disposition to trust on E-Banking Hypotheses**

As earlier stated, disposition to trust refers to a general propensity to trust others. It is a personality-based trust that explains why some of us have the tendency to believe or not to believe in others [3, 18, 50]. It has been suggested that one's disposition to trust has a positive relationship with the level of trust one has with a person or an organization. Several studies in the e-commerce domain have investigated the influence of disposition to trust on the trust construct. Reviewing previous research on the multidimensional trust and risk in initial acceptance of new technologies in the banking sector. Lu et al. [50] affirmed that trust must be strongly considered to ensure the content domain of the perceived risk of mobile banking and acceptance of the technology. Thus, this study also hypothesize that there is an affirmative relationship between disposition to trust and trust. This leads to the next hypothesis.

**Hypothesis 15:** Disposition to trust may likely affect trust.

#### **5.14 Construct on Institutional trust (situational normality and structural assurance) on E-Banking Hypotheses**

The potential adoption of organizations performing responsibility is known as institutional trust. Kim et al [35] opine that trust is supported by the institutional structures that create an environment that feels safe and secured to online shopping [6]. A meta-analysis of the influence of trust on TAM was carried out by [51] to find out the



moderating impact of subjective and context type considered trust through organizational variables. Thus, this leads to the next hypothesis.

**Hypothesis 16:** Perceived structural assurance may likely affect trust.

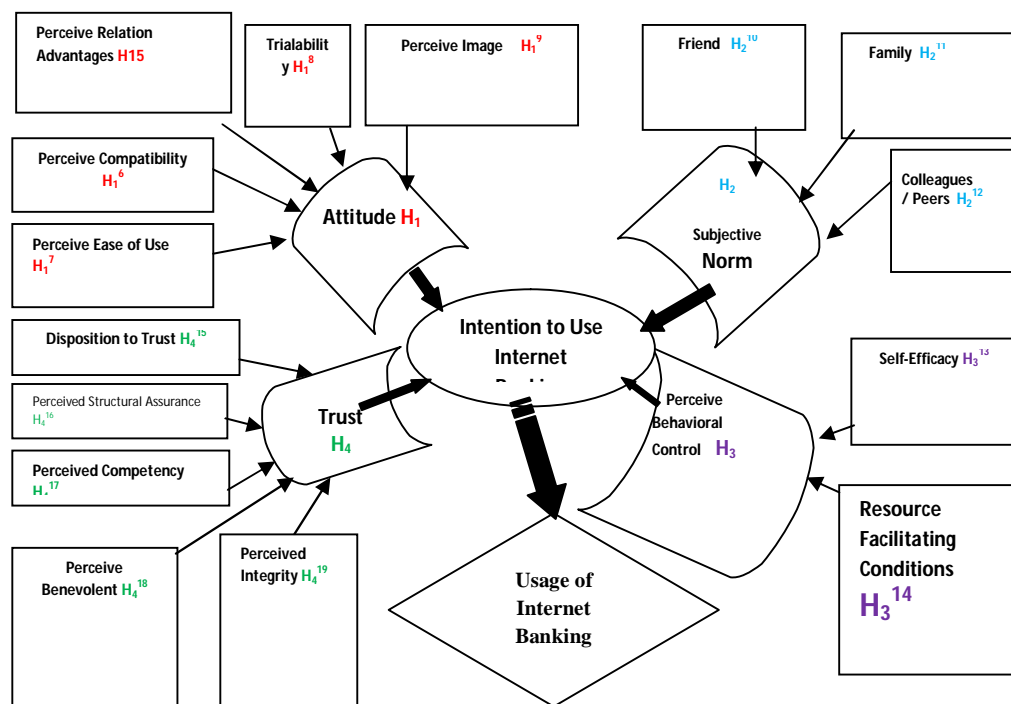
### 5.15 Construct on Interpersonal trust on E-Banking Hypotheses

Interpersonal trust or trusting beliefs refers to the trustor's perception that the trustee has attributes that are beneficial to the trustor [43, 8, 16]. Various types of trusting beliefs have been used in the literature, but three utilized most often are competence, benevolence, and integrity [40]. In a study of effect of trust on customer acceptance of Internet banking on the web users was found that trust are influenced by perceived integrity and benevolence which was supported by [3, 44, 51] on the study effect of transaction trust on e-commerce relationships between travel agencies. Thus, this leads to the seventeenth, eighteenth and nineteenth hypotheses.

**Hypothesis 17:** Perceived competence may likely affect trust

**Hypothesis 18:** Perceived benevolence may likely affect trust.

**Hypothesis 19:** Perceived integrity may likely affect trust



**Figure 3 the proposed conceptual model for intention to use internet banking**

Conclusively, as proposed in the research question section in section 1 of this research, this study attempted to examine whether trust elucidate additional justification to behavioral intention to accept electronic banking. Several literatures have established the influencing role of trust in the intention to accept online services [24, 13, 18, 8, 3]. This leads to the twentieth hypothesis.

**Hypothesis 20:** Trust may likely elucidate additional variance in behavioral intention.

## 6.0 WHY THIS NEW MODEL IS NEEDED

An inclusive multidimensional framework based on previous studies and theories is required to guide future research in the field of electronic banking. This will guide the authors to model not only the direct relationships between constructs of interest and the outcomes, but also the indirect effects through intervening variables. Previous studies on internet banking revealed that there is a rising tendency of electronic financial transactions through the internet to dominate the previously traditional way of banking in the developing countries. Countries such as Lebanon and Malaysia was mentioned as among those that have outperformed their peers in the region on electronic banking system respectively with 62% and 61% of households having access to the Internet compared to an average

of 20% in other countries in the region. Similar trend is also obtainable in Nigeria because the country also outperforms other of its peers in the African sub-continent in terms of internet penetration. Although, some studied empirical researches show that acceptance of electronic banking among Nigerian bank customers is nowhere matched when compared to their counterpart in other countries. This position has raised some questions on the factors affecting the acceptance of electronic banking. This fact exposes the need for a comprehensive research in the field of electronic banking to vividly investigate the factors influencing the acceptance of internet banking. As a result, this particular study is aimed at conceptualizing the acceptance of electronic banking acceptance in Nigeria by identifying the factors that are important in the interpretation of the intention to accept electronic banking in Nigeria. In this particular study, the authors suggested the use of the decomposed theory of planned behavior, a theory that is widely used in management information systems research to conceptualize a model for this study.

## 7.0 FUTURE DIRECTION: USING STRUCTURAL EQUATION MODELING

In a cross sectional study with internet banking users, the proposed conceptual framework (**Figure3**) will use a single comprehensive Structural Equation Model (SEM) to examine simultaneously the multidimensional constructs described in earlier section of this article and thought to be essential to the financial services professionals. Structural Equation Modeling are primarily representations of causal association between hypothesized constructs, rather than been an ordinary connection between those constructs. Individual arrow in the model is therefore meant to indicate not simply a connection between dimensions, but rather a theoretically-derived demonstration of the causal nature of that relationship. The future study will therefore serve to test the suggested model, and provide an example of a study that may be conducted under this new framework. Our on-going research efforts are directed at testing this proposed model by conducting a cross-sectional study on electronic banking users in Nigeria. This article presents the variable measures and indicators that the authors have selected for this particular research, which are in line with this theoretical framework. Future research using longitudinal data under this theoretical framework may anticipatorily provide many responses to the puzzles on the acceptance of electronic banking research.

## 8.0 SUMMARY AND CONCLUSION

This conceptual paper documents the position of existing knowledge, examines the recent thinking that has been adopted to explain the research on acceptance of electronic banking process through a multidimensional perspective, and proposes a comprehensive framework that can guide future research in this field. However, based on the perspective of technology acceptance theories, this study suggests the decomposed theory of planned behavior as a determining factor of an individual's acceptance of a specific information and communication technology. Since the full scale study is planned to be conducted in Nigeria, the study is expected to extend the existing body of knowledge related to decomposed theory of planned behavior. Conclusively, this study proposed a framework which shall contribute to the thoughtful of factors that are responsible for the acceptance or rejection of electronic banking in Nigeria. With the decomposed structure, this study is optimistically projected to provide additional understanding of the antecedent of acceptance.

## ACKNOWLEDGEMENT

The authors wish to thank the Universiti Tun Hussein Onn Malaysia for part funding this research.

## 9.0 REFERENCES

- [1] Rahman, A. S. A., S. Masrom and K. Jusoff, 2011. Non-Repudiation in Order, Delivery and Payment Process for a Sustainable Online Business. *World Applied Sciences Journal*, (12): 07-12.
- [2] Butt, S. F., Liaqat, M., Khan, M. R., W. Nisar and E. U. Munir, 2013. Common Factors in the Successful Software Projects in Pakistan's Software Industry. *World Applied Sciences Journal*, 23 (9): 1176-1185.
- [3] Nayeibzadeh, S., O. Arsalanizadeh and M. M. Sadrabadi, 2013. The Relationship between Satisfaction, Trust and Loyalty: E-Banking's Customers of an Iranian Bank (A Case Study: Melli Banks of Yazd Township). *Journal of Basic and Applied Scientific Research*, 3(8): 222-231.
- [4] Hanzae, K. H. and T. Sadeghi, 2010. Measuring Banks' Automated Service Quality: A Re-Examination in an Islamic Country. *World Applied Sciences Journal*, 8(7): 874-880.

- [5] Pirayesh, R., A. Mansouri and M. Armanmehr, 2013. Association between Accounting Conservatism and Return on Investment in Listed Companies on Tehran Stock Exchange. *World Applied Sciences Journal*, 23 (9): 1140-1145.
- [6] Memarzadeh, R. G., S. Fayeze and P. Koolivand, 2013. Identifying the Determining Factors of Information Security Management System in Large Companies. *Journal of Basic and Applied Scientific Research*, 3(8): 520-524.
- [7] Borghoff, T., 2011. The Role of ICT in the Globalization of Firms. *Journal of Modern Accounting and Auditing*, 7 (10): 1128-1149.
- [8] Chhachhar, A., G. M. Khushk., A. A. Chachar and B. Qureshi, 2013. Internet Usage among University Students in Pakistan. *Journal of Basic and Applied Scientific Research*, 3(9): 31-35.
- [9] Nor M. D. and M. Pearson, 2008. An Exploratory Study into the Adoption of Internet Banking in a Developing Country: Malaysia. *Journal of Internet Commerce*, 7(1): 29-37.
- [10] Oni, A. A. and C. K. Ayo, 2010. An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria. *Journal of Internet Banking and Commerce*, 15 (1): 1-13.
- [11] Stephen, A.O. and A. Ikpefan, 2012. Electronic Commerce, Automation and Online Banking in Nigeria: Challenges and Benefits. *International Journal of Innovation in the Digital Economy*, 3(1): 16-27.
- [12] Alsajjan, B. and C. Dennis, 2010. "Internet banking acceptance model: Cross-market examination." *Journal of Business Research*, 63(9-10): 957-963.
- [13] Hsu, C. L., H. P. Lu and H. H. Hsu, 2007. Adoption of the mobile Internet: An empirical study of multimedia message service. *Omega*, 35(6): 715-726.
- [14] Al-Qirim, Y. A. N., 2003. E-commerce in the aerial mapping industry: A New Zealand case study. *Journal of Systems and Information Technology*, 7(1/2): 67 – 92.
- [15] Shareef, M. A. and V. Kumar, 2011. E-Government Adoption Model (GAM): Differing service maturity levels. *Government Information Quarterly*, 28(1): 17-35.
- [16] Chen, Y. H., 2007. Initial trust and online buyer behaviour. *Industrial Management & Data Systems*, 107(1): 21 - 36.
- [17] Lawrence, J. E., 2011. The Growth of E-Commerce in Developing Countries: An Exploratory Study of Opportunities and Challenges for SMEs. *International Journal of ICT Research and Development in Africa*, 2(1): 653-576.
- [18] Kaljahi, A. M., A. Payandeh and M. B. Ghoshchi, 2013. DTM: An Efficient and Dynamic Trust and Reputation Model for E-commerce Agents. *Journal of Basic and Applied Scientific Research*, 3(8): 300-310.
- [19] Mayer, R.C., H. J. Davis and D. F. Schoorman, 1995. An integrative model of organizational trust. *Academy of Management Review*, 20(3): 709-734.
- [20] Pavlou, P. A., 2003. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3): 101-134.
- [21] Sohail, S. and B. Shanmugham, 2003. Electronic banking and customer preferences in Malaysia: An empirical investigation. *Information Sciences*, (150): 207-217.
- [22] Jansen, J., 2010. Engagement with online commerce by the higher-income households. *Pew Research Center's Internet and American life*, USA.
- [23] Abubakar, F. and A. Rosmaini, 2012. "The Impact of Information and Communication Technology on Banks' Performance and Customer Service Delivery in the Banking Industry. *International Journal of Latest Trends, Finance and Economics Science*, 2(1): 80-90.
- [24] Lee, K. W., T.T. M. Sai and C. M. Lanting, 2011. From marketplace to marketspace: Investigating the consumer switch to online banking. *Electronic Commerce Research and Applications*, 10(1): 115-125.
- [25] Harrison, D. A., P. P. Mykytyn and K. C. Riemenschneider, 1997. Executive decisions about adoption of information technology in small businesses: theory and empirical test. *Information Systems Research*, 8(2): 171-195.
- [26] Ajzen, I., 1991. "The theory of planned behavior. Organizational behavior and Human." *Decision Processes*, 50: 179-211.
- [27] Rogers, A., 1995. Diffusion of innovations New York: Free Press.
- [28] Agarwal, R. P., 2000. "Are individual difference germane to the acceptance of new information technologies?" *Decision Sciences*, 30(2): 361- 391.
- [29] Fang, H. and P. Mykytyn, 2007. Decision Factors for the Adoption of an Online Payment System by Customers. *International Journal of E-Business Research*, 3(4): 32.
- [30] Ajzen, I. and D. Fishbein, 2009. "Predicting and changing behavior: The reasoned action approach." books.google.com.

- [31] Lee, E. J., K. Kwon and S. W. David, 2005. Segmenting the non-adopter category in the diffusion of internet banking. *International Journal of Bank Marketing*, 23 (5): 414 – 437.
- [32] Mathieson, K., 1991. Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems' Research*, 2(3 ): 173-191.
- [33] Davis, F. D., 1989. Perceived Usefulness perceived ease of use, and acceptance of information technology. *MIS Quarterly*, 13(3): 391-340.
- [34] Taylor, F. and N. Todd, 1995. Understanding information technology usage: A test of competing models. *Information Systems Research*, 5(2): 144-176.
- [35] Kim, T. G. and J. H. Lee, 2008. An empirical examination of the acceptance behavior of hotel front office systems: An extended technology acceptance model. *Tourism Management*, 29(3): 500-513.
- [36] Lin, W. B., K. M. Wang and P. K. Hwang, 2010. The combined model of influencing on-line consumer behavior. *Expert Systems with Applications*, 37(4): 3236-3247.
- [37] Yi, M. Y. F., Kirk D. Park and S. Jae, 2006. Understanding the Role of Individual Innovativeness in the Acceptance of IT-Based Innovations: Comparative Analyses of Models and Measures. *Decision Sciences*, 37(3): 393.
- [38] Al-Majali, S. and D. Malek, 2010. Application of Decomposed Theory of Planned Behavior on Internet Banking Adoption in Jordan. *Journal of Internet Banking & Commerce*, 15 (1): 267-275.
- [39] Sanjukta, P. and P. Natesan, 2010. Examining Consumers' Channel-Migration Intention Utilizing Theory Of Planned Behavior: A Multigroup Analysis. *International Journal of Electronic Commerce Studies*, 1(2): 121-131.
- [40] Zhang, P. and S. Aikman, 2007. Attitudes in ICT Acceptance and Use. *Human-Computer Interaction: Interaction Design and Usability*, 4550: 1021-1030.
- [41] Yang, T. M. and T. A. Maxwell, 2011. Information-sharing in public organizations: A literature review of interpersonal, intra-organizational and inter-organizational success factors. *Government Information Quarterly*, 28(2): 164-175.
- [42] Lee, M. C., 2009. 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(3): 130-141
- [43] Barry, H., R. Hamilton and P. Hewer, 2007. Customer involvement and interaction in retail banking: an examination of risk and confidence in the purchase of financial products. *Journal of Services Marketing*, 21 (7): 481 - 491.
- [44] Suh, B. and I. Han, 2002. Effect of trust on customer acceptance of Internet banking. *Electronic Commerce Research and Applications*, 1(3–4): 247-263.
- [45] Jahangir, A. and F. Begum, 2008. The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African Journal of Business Management*, 2 (1): 032-040.
- [46] Al-Qeisi, K. L., 2009. "Analyzing the use of UTAUT model in explaining an online behaviour: Internet banking adoption." *Brunel University Research Archive, Brunel Business School Theses*.
- [47] Hung, S.Y., C. Y. Ku and C. J. Chien, 2012. Understanding physicians' acceptance of the Medline system for practicing evidence-based medicine: A decomposed TPB model. *International Journal of Medical Informatics*, 81(2): 130-142.
- [48] Carter, L. and F. Bélanger, 2005. The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information Systems Journal*, 15(1): 345-355.
- [49] Huang, C. C., T. C. Lin and K. J. Lin, 2009. Factors affecting pass-along email intentions (PAEIs): Integrating the social capital and social cognition theories. *Electronic Commerce Research and Applications*, 8(3): 160-169.
- [50] Lu, Y., S. Yang., K. Y.P. Chau and Y. Cao, 2011. Dynamics between the trust transfer process and intention to use mobile payment services: A cross-environment perspective. *Information & Management*, 48(8): 393-403.
- [51] Wu, J. J. and Y. S. Chang, 2006. Effect of transaction trust on e-commerce relationships between travel agencies. *Tourism Management*, 27(6): 1253-1261.