



Factors Affecting Intention to Use Online Banking Services: The Case of Saudi Arabia

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Abstract

The most significant tool for any commercial to grow and growth profits in this era is by information technology (IT). Due to the technology revolution, online banking represents one of the largest economies in the world wide in general and particularly in Middle east. For these reasons, this study investigates the factors impacting online banking usage by Saudi Arabia bank customers. Moreover, due to the limited studies regarding the adoption of online banking in Saudi Arabia . This study is investigated on the different factors that impact the adoption of online banking services. An initial od proposed adoption model of online banking was developed from several theoretical studies. The mode incorporated of the most significant factors of online banking adoption. These factors named personal information, personal experience, disposition to trust, reputation, trusting belief, structural assurance and perceived site quality that affect online banking usage. The model was tested against both measurement and structural models. The results indicated a strong correlation with personal information and the most significant effect on online banking usage, followed by all other hypotheses with P values <0.005, which indicates that all hypotheses have a strong effect on online banking adoption. Finally, the results are discussed with suggestions for future researches.

Key words: Adoption model, Online banking, Saudi Arabia.

1. Introduction

IT signifies the heart of any business in the 21st century. The growth of the digital world has been integrated with business development and business society in the past ten years; this has transformed completely according to technology. Banks are one of such businesses functioned over branch outlets and due to the revolution and development of e-banking technology. There is permanently a gap among business goals and IT [60]. The reduction and/or minimization of this gap can be, when optimistic links are formed among IT team and the business team [17]. To deal with business requirements all over the world, IT companies spend millions of pounds over updating and discharging novel programs and software [27, 77].

Furthermore, universal market places function depending to the viewpoint of globalization and the high speed changes of IT to power businesses to take up the technology. The represents number of customers for online services is the most significant aspect for a business to succeed. The key determination of this study and its influences is to understand client acceptance of online banking and to inspect the features that enhance or impede the possibility of online bank customers to taking up the service. This will be done over reviewing the relevant concepts of theoretical, and understanding the co-evolution among business and IT. To do so, it is nessassery find the gap formation between the two entities namely online banking systems and users.

Morover, the investigation is to find out the different between online banking models and related factors that affect customer adoption of online banking services. These can be doen over, Firstly, to study the different factors affecting the customer's adoption of online banking services. Secondly, to develop a theoretical model for adoption of online banking. Thirdly, to evaluate the framework in Saudi Aribua society. To the bests of the knowledge this study will add to the knowledge in the field of customer's adoption of online services in Saudi Arabia.

2. Literature Review

A recent study for online banking in Thailand [26] suggested hypotheses to accept online banking services by customers. The study [26] concluded that internet banking transactions are influenced by per ceived ease of use (PEOU), perceived usefulness (PU), quality of the internet conc nection, confidence of the system provided through trast and legal support. It was found that high speed internet, authentication by using by device, single password usage and limiting the amount of money per transaction improved the willingness of customers to accept online banking services [26, 66 ,67,68]. In addition to the past study one of the most popular models among IT researchers is the Technology Acceptance Model (TAM) [28, 29]. This model is an information systems hypothesis that models the user's acceptance and use of technology, it was adapted from the Theory of Reasoned Action "TRA" [21]. The main aim for the TAM model is to anticipate the user's acceptance of the information system to the user and identify design problems before users have experience with the new infor mation system. It is suggested that there are two factors: the perceived usefulness (PU) and perceived ease of use (PEOU).The PU is the degree to which person believes that using a particular system would enhance his or her job performance whil, PEOU is defined as the degree to which a person believes that using a particular system is free from efforts [15].

Online trust was defined in addition to different trust factors include trusting beliefs, disposition to trust, institutional-based trust, reputation, familiarity, perceived site quality, web experience and trusting intention. Different online banking models were eamined such as the online banking security model, the theory of planned behaviour (TPB), extended theory of planned behavior (ETPB), innovation diffusion theory (IDT), decomposed theory of planned behaviuor (DTPB). This gives us an idea of how to establish this research framework depending on the relevant theoretical concepts. The adoption of online banking is studied in this paper as a co-evolution problem.

3. The Proposed Research Framework

The suggest research framework is proposed to investigate the significant factors of customer's adoption of online banking. These influences were the topic of many investigators around the world including the USA [72, 74], Europe [26, 111] Australasia [35]and Asia [19, 127, 151].

However, there is still few studies have doen in the Middle East about these factors, especially in Saudi Arabia. But, a past PhD student did investgated on challenges facing adoption of online banking in Saudi Arabia [1].

This framework was adapted from previous studies and different theories including the theory of planned behaviour (TPB) [38], the decomposed theory of planned behaviour (DTPB) [59], the extended theory of planned behaviour (ETPB)[4], innovation discusion theory (IDT) [50], the customer orientation model [6], the guidance model for online banking and internet banking security [39] and Maslow’s hypothesis [38].

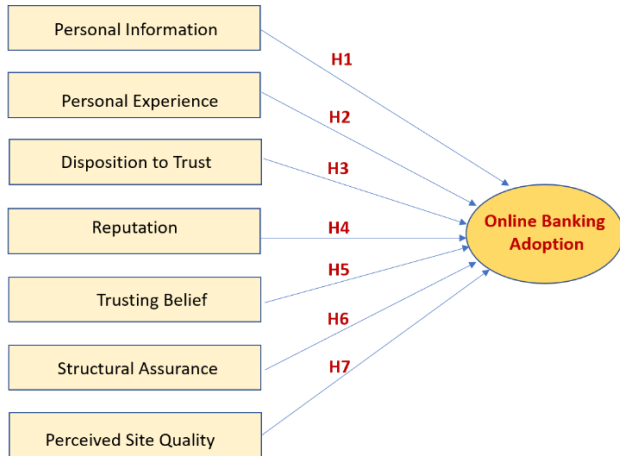


Figure 1 : Proposed Research Framework

Figure 1 illusterates the proposed research framework which consists of the following hypotheses such as :

- H1:Personal information positively influences customer adoption of online banking.
- H2: Personal experience positively influences customer adoption of online banking.
- H3: Disposition to trust positively influences customer adoption for online banking.
- H4: Reputation positively influences customer adoption of online banking.
- H5:Trust positively influences customer adoption of online banking.
- H6: Structural assurance positively influences customer adoption of online banking.
- H7:Perceived site quality positively influences customer adoption of online banking.

A questionnaire was designed in correspondng with the seggueset hypotheses, each hypotes is provided in separate seaction such as personal information (H1), personal experience (H2), disposition to trust (H3), and so on. The reason of each each hypothesis and its selection will be discussd in more detailes next for instance:

Personal Information(H1)

Personal information is the first hypothesis in this research framework which include gender, age and education.

Personal Experience (H2)

Personal experience plays a significant role in online bank adoption, for example a custome who have a negative knowledge about online banking services typically have a negative perception of any online services. For example the individual with a positive experience about an object will hold more positive beliefs about it according to the classic theories on attitude [21]. This proposes that positive beliefs will lead to positive perceptions. For these reasons, personal experience could cross

all the fences between the client and an online service. Therefor, this hypothesis on personal experience (H2) was selected to examines the customer’s access to online bank account, the number of times the online bank account has been accessed and the number of years’ experience with online banking.

Disposition to Trust (H3)

Personality psychologists typically defined trust as an individual characteristic [51]. Trust was therefore conceptualised as a belief, expectancy, or feeling that is extremely rooted in the personality and originates in the individual’s early psychological development. It is also known as ‘disposition to trust’ [65]. Other studies found that either customer’s disposition or the consumer’s initial trust have an impact in an online vendor[47, 98]. Based in this hypothesis (disposition to trust (H3) and with corresponding to the research questionnaire, designed to investigating trust issues with online banking customers, such as the customer’s trust in online banking in case of fraud and bank Website reliability.

Reputation(H4)

To remain strong within any competitive context, business requires a good reputation. It is one of the significant influences that influence client to adopt online banking. To enhance the customer’s trust with online businesses, It was recommended that reputation is a significant influence [25]. Moreover, reputation can be influced by communication, opportunistic behaviours, and shared values [46]. The questionnaire in correspondng to the bank’s reputation was designen to investigate about the following topics: the online banking service’s reputation, online banking sources (friends, TV, bank staff and Newspapers), and finally about the bank’s good reputation.

Trusting Belief (H5)

Trusting belief is defined as a psychological state which leads to the readiness of a customer to make banking transactions over online, and their belief that the bank will fulfil its responsibilities, irrespective of a customer’s ability to control or/and monitor the bank’s actions [92, 120]. In this study the research questionnaire is designed in correspondng to trusting belief (H5) to investigate the customer’s belief in online bank commitments, business performance through online banking and methods of preferred transaction.

Structural Assurance (H6)

Structural assurance is defined as the belief of a structures who provide services are promises, protective, and will prime to successful participation as well as undertaking transactions online. Also, it refers to data that can be used to provid a website with protection of user’s information [12]. Online clients who perceive the attendance of structural assurance will trust that integrated IT will guard their personal information and avoid them from fraud. Recently customers have been required to use their ID,and password to use their online bank, in addition to an external device to log on to their bank account in some banks such as HSBC bank, and Baraclyas. The research questionnaire in correspondng to structural assurance (H6) is designed to investigat the following issue: the technology’s effects on website assurt and, factors influencing customer’s assurance (security, navigability, website contents and ease of use), the effect of website structure and website text on customer participation, security measures and safety transactions. Moreover, multifunctional website features and their effects on customer’s participation were also examined, also the information present on the website, and its impact on customer’s assurance withe respect to the security of the logon process.

In the designed questionnaire, the website design and trust was a major topic with respect to this hypothesis. Questions designed over all structure such as customer's assurance, factors influencing customer's trust (e.g. security and multifunctionality), website modification effects and online transaction and time factors.

Perceived Site Quality (H7)

The first impression for online customers about Website quality plays an important role in their eventual adoption of online services. Web site characteristics can be observed through whether or not it is easy to navigate, is error free, has a professional design and an attractive appearance. These characteristics are very important to enhancing customer trust [6, 25, 122]. Previous studies found that perceived site quality is an important factor to attract and enhance customer's use of the service [42]. It was found that given a high level of perceived site quality, the user is willing to explore the site without considering the risks and is more likely to have trusting intentions towards the site although this may involve risks [70, 98, 143]. In the online banking context, site quality refers to tailoring a service to the customers' preferences [27]. In this study perceived site quality (H7) was studied in the research questionnaire through questions investigating the meaning of trust to customers (i.e. security, navigability and privacy); the design of the bank's website and customer's trust; the website being perceived as error free; the website and trust reflex, the website's quality and user's trust; the bank's logo and its relation to website trust; the customer's ability to differentiate between reality and 'imitation' websites, and the relationship between website structure being perceived as professional and customer's trust.

In summary the proposed research framework was developed by adapt significant factors of online bank models. These models contain the most important factors that have been studied by many researchers in other contexts. These factors affect the customer's adoption of online banking. The hypotheses described investigated topics including: personal information, personal experience, disposition to trust, reputation, trusting belief, structural assurance and perceived site quality. Every hypothesis was represented as a section in the research questionnaire. This study was applied to the Saudi community.

4. Research Method

The research methodology provides strategies to address the aim of the study. This section describes both the research philosophy and chosen research methodology. This study is grounded by theory and it needs an experimental study to support or refuse the proposed research hypotheses.

4.1. Co-evolution Approach

Co-evolution terminology indicates that the evolution of one entity will be influenced by the evolution of another entity. This means that any positive changes in one entity will lead to changes in the other entity [95]. Co-evolutionary approach was used by many scientists and researchers in different scientific fields [5]. The co-evolution process will affect both the system itself and its users. There are two types of co-evolution endogenous and exogenous. Endogenous co-evolution applies to individuals and groups within the firm or business while exogenous co-evolution occurs between business and its environment [32]. Business strategies must be designed in parallel to information technology planning and their alignment must be according to the business targets. As mentioned earlier big business and IT projects can fail because of the gap formation between business targets and IT systems implemented.

Therefore the Business strategy must be flexible to reduce gap formation between business and IT. Both business and technology strategies must co-evolve together to reduce the risks for a co-evolution process due to any sudden changes in the business context. In an effective co-evolution process business or bank strategies must be aligned in a proper way with IT. However, co-evolution sometime produces non-linear actions which may have a positive impact on business but in some cases will have a destructive effect on business [94]. In this study the adoption of online banking is studied as a co-evolution problem. This problem is represented as a gap between online banking customers and online banking adoption.

To improve the co-evolution process this problem needs to be solved by focusing on important factors for online banking adoption. These factors can be used as a tool by software engineering to improve the service and build up a suitable system according to the customer's requirements. Online banking hypotheses were investigated in addition to the literature review to give an indication about the factors that enhance online banking adoption by customers. From these hypotheses the proposed research framework was established. These theories include innovation diffusion theory (IDT) [50], the theory of reasoned action (TRA) [21], technology acceptance model (TAM) [15] & [16], the theory of planned behaviour (TPB) [38], online banking information system (OBIS) acceptance model [10], and commitment-trust theory (CTT)[45]. From all previous studies the research framework was established by using the most important factors which enhance online banking adoption.

Following to the literature reviewed which explained the general online banking hypotheses. Then from these hypotheses the proposed research framework was established (bottom-up technique). This section explains the basic choices for research method selection as well as two models of research philosophy namely, the inductive and deductive reasoning methods. In this study the chosen method was deductive due to reasoning as mentioned above. It starts from general theories to specific theories (top-down). Positivism and postpositivist were discussed. In this study postpositivist research philosophy was decided to be more related to this study because it studies the co-evolution problem (online banking adoption) in the real world through investigating online banking customers. The co-evolution approach, as well as the case study method were covered. This study gives the researcher the opportunity to choose the ideal method to start the investigation depend on scientific basement.

5. Discussion of Results

This section discusses the results of the collected data using online bank questionnaire, which was designed based on the previous studies and related models were discussed earlier in the literature review section. The questionnaires were distributed to 150 participants in order to find out the different factors that affecting customer's trust in online banking. A total of 100 participants responded and the data were analysed using SPSS version 18 for statistical analysis in addition to BioCal for statistical analysis. Descriptive and correlation analyses were performed and the results for each section of the questionnaire are given below.

Table 1: Personal Information

1. Personal information	
1.1. Gender	
Male	42
Female	35
1.2. Age	
20-39	52
40+	25
1.3. Education	
Postgraduates	53
Undergraduates	24
1.5. Online bank account	
International	37
National	40

Table 1 shows the personal information results (include age, gender and education) which show that the number of males and females were 42 and 35 respectively. The age group distribution was 52 (20- 39 years) and 25 (> 40 years). Postgraduates participants were 53 and undergraduates were 24. Participants were customers of either international (37) or national banks (40).

Table 2 : Personal Experiences

2. Personal Experiences	
2.1. Access to online bank accounts	
Participants accessed their online banking account at some point	76
2.2. Time access for online bank accounts	
Participants accessed their account 1-19 times	58
Participants accessed their account 20-30 times in a three month period	19
2.3. Number of years using internet	
Participants accessed their account less than 10 years	59
Participants accessed their account 10+ years.	18

Table 2 shows the results of personal experiences which illustrate that 76 participants accessed their online banking account at some point; 58 participants accessed their account 1- 19 times and 19 participants accessed their account 20-30 times in a three month period. It also found that 59 participants less than 10 years and 18 participants more than 10 years.

Table 3: Disposition to Trust

3. Disposition to Trust	
3.1. Personal ability to trust	
Easy to trust others	48
Difficult to trust others	29
3.2. E-banking trust in case of fraud	
Trust their bank	61
Did not trust their bank	16
3.3. Bank website reliability	
Participants feel that a bank website is reliable	73
Participants do not feel that a bank website is reliable	4

Table 3 shows the disposition to trust results which illustrate that 48 participants found it easy to trust others and while 29 participants found it difficult to trust others. It was found that in the case of fraud 61 participants trusted their bank while 16 participants did not. From all cases, 73 feel that a bank website is reliable while 4 do not.

Table 4: Reputation

4. Reputation	
Participants think that the online bank service was well known	73
Participants think that the online bank service was not well known	4
Bank service had been learned about by interacting with the bank staff	55
Cases from information was gained from friends, TV and newspaper.	22
Suggested that the bank had a good reputation	73

Table 4 shows the results of reputation which illustrate that 73 participants think that the online bank service was well known and 4 participants did not think that online banking service are well known. It was found that in 55 cases bank service had been learned about by interacting with the bank staff and in 22 cases from information was gained from friends, TV and newspaper. It was suggested that the bank had a good reputation in 73 cases.

Table 5: Trusting Beliefs

5. Trusting Beliefs	
Participants believe that an e-bank kept its commitments	73
Participant feel that the e-bank business is perfect	72
Participants preferred to make transactions through the online banking	59
Participants preferre to make transactions through a bank branch	18

Table 5 shows trusting beliefs results which show that 73 participants believe that an e-bank kept its commitments, and in 72 of participants felt that the e-bank business is perfect. Also it illustrates that 59 of participants preferred to make transactions through the online banking while 18 of participants preferred to make transactions through a bank branch.

Table 6: Structural Assurances

6. Structural Assurances	
The technology used for online service improved customers assurance	72
Security and contents were the most important factor	68
Participation in online services was found to depend on website structure	65
Security measures indicated a safe environment	70
Multifunctional websites increase participation needles textual Web	22
Information on the website was shown to enhance the customer’s assurance	70
Logon process is suggested to be secure	72
The bank website reflects trust	69
Website structure found to enhance the ‘feel good’ factor	70
Security was an important factor to increase customers’ trust	69
Continuous modification to the bank’s website found to improve the customers trust	69
Transactions through the online service were found to be the preferred method	75

Table 6 shows structural assurances results which illustrate that the technology used for online service improved customers assurance in 72 cases. It was also found that security and contents were the most important factor in 68 cases. Participation in online services was found to depend on website structure in 65 cases.

Security measures indicated a safe environment in 70 cases. Multifunctional websites increase participation in 55 cases and the needles textual Web in 22 participants. Information on the website was shown to enhance the customer’s assurance in 70 cases. atahe logon process is suggested to be secure in 72 cases. The bank website reflects trust in 69 cases. website structure found to enhance the ‘feel good’ factor in 70 cases. Security was an important factor to increase customers’ trust in 69 cases. Continuous modification to the bank’s website found to improve the customers trust in 69 instances. Transactions through the online service were found to be the preferred method in 75 cases.

Table 7 : Perceived Site Quality

7. Perceived Site Quality	
The meaning of trust was security	60
Privacy and navigability indicated trust	17
Participants trusted their bank website	70
Participants did not trusted their bank website	7
Customers felt that bank websites are not free from errors	46
The website design will result in trust	55
It did not reflect customer’s trust.	22
Website quality was found to increase customers’ trust	64
Website quality was found to not increase customers’ trust	13
Bank’s logo suggested a legal website to customers	57
Bank’s logo did not have this effect to customers	20
Customers were found to differentiate between legal sites and imitation websites through their URL www.bank name	36
From website contents and professional structure	41
Professional website were found to increase customers’ trust	68
Professional website were had no effect found to customers’ trust	9

Table 7 illustrates the result of perceived site quality which shows that the meaning of trust was security in most of the cases 60 cases and in 17 cases privacy and navigability indicated trust. It was found that in 70 cases participants trusted their bank website and 7 cases did not. Results showed that 46 of these bank customers felt that bank websites are not free from errors and 31 cases were. It was also found that the website design will result in trust in 55 cases while in 22 cases it did not reflect customer’s trust. website quality was found to increase customers’ trust in 64 cases and in 13 cases it did not. The Bank’s logo suggested a legal website to 57 customers while in 20 cases the bank logo did not have this effect. Customers were found to differentiate between legal sites and imitation websites through their URL www.bank name in 36 cases and from website contents and professional structure in 41 cases. Professional website were found to increase customers’ trust in 68 cases while this had no effect on 9 customers.

There was a strong correlation with personal information (H1) and all other hypotheses with P values of <0.005 which indicates that all hypotheses have a strong effect on online banking adoption. All results support the proposed research framework and its hypotheses which indicates that the proposed research framework is satisfied and can be used to enhance online banking adoption. This research framework studied the most important factors for customer adoption of online banking.

6. Conclusion

In this study, a new research model was developed to predict factors which affect online banking usage. The results disclose that customers desire to use online banking, because they perceive it as useful and easy to use. Moreover, compatibility of online banking with customers’ life and work styles is found to be the key driver of online banking usage. Personalized and alliance services are determined as the additional factors which encourage customers to use online banking as well. Due to time framework , other factors have not covered yet such as customer’s culture, bank commitment, network quality, and world economics which would be studied in further research. Also , the proposed framework will be modified in order to find the inter-relationships among factors in online banking usage.

Acknowledgments

The author would like to thank the respondents who participated in this research. Also would like to thank the Deanship of Business College, University of Jeddah, Jeddah, Saudi Arabia

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