

**DETERMINANTS OF E-BANKING CONTINUANCE USAGE IN
JORDANIAN BANKS**

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DETERMINANTS OF E-BANKING CONTINUANCE USAGE IN
JORDANIAN BANKS

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*To my father and beloved mother,
My Lovely wife and my kids
And not forgetting to all my friends
For their
Sacrifice, Love, and Encouragement*

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ABSTRACT

The present study is an endeavour to investigate the relationship of factors influencing the customers in regard to the continuance usage of e-banking in Jordan based on the Technology Continuance Theory (TCT). It started with an investigation of individual factors on customers' continuance usage of e-banking in Jordan, namely (i) perceived confirmation, (ii) perceived usefulness, and (iii) perceived ease of use. It also investigated the mediating effects of attitude and satisfaction on the relationship of the aforementioned individual factors and customers' continuance usage of e-banking. Subsequently, the moderating effects of Big Five personality traits (extraversion, openness to experience, agreeableness, conscientiousness, and neuroticism) on the relationship between satisfaction and continuance usage of e-banking were investigated. Quantitative approach was applied for the present study and 823 questionnaires were collected from the bank customers who were selected using multistage sampling technique. Multivariate data normality tests, descriptive statistics, and structural equation modelling (SEM) were used for data analysis. The proposed model of the present study supported the results, revealing a significant direct relationship of the relationship between perceived confirmation, perceived usefulness, perceived ease of use, and attitude with the continuance usage of e-banking. The results showed a partial mediating effect of attitude on the relationship between perceived usefulness, perceived ease of use, and continuance usage of e-banking, while satisfaction failed to function as a mediator. Additionally, the results indicated a significant moderating effect of extraversion, openness to experience, agreeableness, and conscientiousness on the relationship between satisfaction and continuance usage of e-banking – only neuroticism failed to function as a moderator. On the one hand, five out of 19 tested hypotheses were rejected. The present study also raised an ongoing debate in organisational studies related to the continuance usage of e-banking, making it noteworthy for the e-banking customers and bank managers in Jordan to understand the significant factors which directly or indirectly affect the continuance usage of e-banking. The implications for research and practice, limitations, future research, and conclusion are discussed at the end of this study.

ABSTRAK

Kajian ini merupakan usaha untuk mengkaji hubungan faktor-faktor yang mempengaruhi pelanggan berhubung dengan penggunaan berterusan e-perbankan di Jordan berdasarkan Teori Penerusan Teknologi (TCT). Kajian ini bermula dengan pengkajian pengaruh faktor individu terhadap penggunaan berterusan pelanggan e-perbankan di Jordan, iaitu (i) tanggapan pengesahan, (ii) tanggapan kebergunaan, dan (iii) tanggapan kemudahan. Kajian ini juga mengkaji kesan pengantara sikap dan kepuasan hubungan faktor individu yang dinyatakan di atas dengan penggunaan berterusan pelanggan e-perbankan. Berikutan itu, kesan penyederhanaan ciri-ciri personaliti Lima Utama (ekstraversi, keterbukaan kepada pengalaman, kebolehsetujuan, ketelitian, dan neurotisme) keatas hubungan antara kepuasan dengan penggunaan penerusan e-perbankan telah dikaji. Pendekatan kuantitatif digunakan dalam kajian ini dan sebanyak 823 buah soal selidik dikumpulkan daripada pelanggan bank yang dipilih menggunakan teknik pensampelan berbilang tahap. Data multivariat ujian normal, statistik deskriptif, dan pemodelan persamaan struktur (SEM) digunakan untuk analisis data. Model cadangan kajian ini menyokong dapatan kajian dengan mendedahkan hubungan langsung yang signifikan berkenaan hubungan antara tanggapan pengesahan, tanggapan kebergunaan, tanggapan kemudahan, dan sikap dengan penggunaan berterusan e-perbankan. Hasil kajian menunjukkan terdapat kesan pengantara separa bagi sikap keatas hubungan antara tanggapan pengesahan, tanggapan kebergunaan, tanggapan kemudahan, dan penggunaan berterusan e-perbankan manakala kepuasan gagal berfungsi sebagai pengantara. Selain itu, hasil kajian menunjukkan kesan penyederhanaan yang signifikan bagi ekstraversi, keterbukaan kepada pengalaman, kebolehsetujuan, dan ketelitian keatas hubungan antara kepuasan dengan penggunaan berterusan e-perbankan. Hanya neurotisme yang gagal berfungsi sebagai moderator. Di samping itu, lima daripada 19 hipotesis yang diuji telah ditolak. Kajian ini juga menimbulkan pembahasan yang berterusan dalam kajian organisasi yang berkaitan dengan penggunaan berterusan e-perbankan, menjadikannya perlu diberi perhatian oleh pelanggan e-perbankan dan pengurus bank di Jordan agar memahami faktor-faktor penting yang memberi kesan secara langsung atau tidak langsung penggunaan berterusan e-perbankan. Implikasi kajian dan amalan, keterbatasan, kajian akan datang, serta kesimpulan turut dibincangkan pada akhir lembaran kajian ini.

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LIST OF ABBREVIATIONS

AGFI	-	Adjusted Goodness of Fit Index
AMOS	-	Analysis of Moment Structure
BTS	-	Bartlett's Test of Sphericity
CFA	-	Confirmatory Factor Analysis
CFI	-	Comparative Fit Index
CMIN	-	Minimum Chi-square
EFA	-	Exploratory Factor Analysis
GFI	-	Goodness of Fit Index
KMO	-	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
MSA	-	Measure of Sampling Adequacy
NFI	-	Normed Fit Index
RMR	-	Root Mean Square Residual
RMSEA		Root Mean Square Error of Approximation
SEM	-	Structural Equation Modelling
SPSS	-	Statistical Package for Social Sciences
TLI	-	Tucker Lewis Index
VIF	-	Variance Inflation Factor

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Over the past few years, the growth of information technology has become the main factor for many organisations to take advantage on the most advanced technology and the latest innovation to attain competitive advantage. Most advanced technology is widely used to solve their organisational problems and to accelerate economic growth (Abubakar and Tasmin, 2012; Abu Shanab *et al.*, 2010). The most important outcome of information technology is the Internet, which has proven to be the most significant product of the century (Mitchell *et al.*, 2011). The Internet has been used on a large scale particularly in the banking industry for financial transaction, electronic payment, e-commerce service, and other banking activities to benefit the customers (Lee, 2009; Mitchell *et al.*, 2011).

One of the advantages of e-banking that it allows consumers to conduct their financial activities through Internet without visiting the banks (Aladwani, 2001; Tan and Teo, 2000), hence enabling them to carry out their financial activities anywhere and at any time (Tan and Teo, 2000). Daniel (1999) and Sathye (1999) defined e-banking as an electronic form of communication between customers and banks through the use of computers and Internet without face-to-face encounter. It is known as a self-service system because customers are able to complete their financial transactions by means of an online system anywhere and at any time via the banks' websites which contains all data concerning the transactions (Chirani and Ghofrani, 2010; Thulani *et al.*, 2009).

The increasing interest in online banking has posed many questions, particularly on how banks can take advantage over the benefits of online banking, as well as how they can persuade their clients to accept and utilise e-banking services, in addition to how they can facilitate customer experience of discovering and using such services. It is undeniable that online banking provides a quality service especially in terms of customers getting access to their bank accounts at any time (Tan and Teo, 2000). Nevertheless, some people are still reluctant to switch to online banking (Yaghoubi, 2010) and typically refuse to use technology. Just like other banks in this world, Jordanian banks are also facing similar challenge.

The present study examined and defined the factors influencing e-banking continuance usage and its relation with customer satisfaction. Additionally, it assessed the customer continuance usage of e-banking services by using the Technology Continuance Theory (TCT) and modifying this theory by using Big Five personality traits as a moderator on the relationship between satisfaction and e-banking continuous usage.

1.2 Background of the Study

E-banking and the relative technologies are rapidly changing the way financial and transactional services are delivered and performed (Luarn and Lin, 2005). The widespread use of information systems and technologies have maintained an enormous impact over the banking sector, moreover user-friendly and flexible banking services are being continually introduced to the customers (Akturan and Tezcan, 2012). E-Banking provides different monetary services via Information and Communication Technologies (ICT) (Hanafizadeh *et al.*, 2014). Nowadays, E-banking is important to assist customers in completing their financial transactions by enabling them to access their accounts anywhere and at any time so long there is an internet connection (Hu and Liao, 2011). To that end, banks keep improving their online services due to the competitive nature of the industry, where self-service technology is adequate and meets the needs of customers (Wessels and Drennan, 2010). Although, both customers and banks together stand to gain benefits from e-

banking services, Research indicated that certain customers still refuse to continue using e-banking services (Le and Koh, 2002; Yaghoubi, 2010).

Recently, Most of the banks have invested heavily in providing e-banking services to its customers. A quick review of marketing literature suggests that, similar to other service industries, lack of understating on determinants of customer continuation usage can be costly to banks (Rust and Zahorik, 1993; Mittal and Lassar, 1998). For this reason it is essential to study the underlying determinants of m-banking continuous usage. This study, therefore, aims to address the need to understand the phenomenon of e-banking continuation usage, by studying determinants of continuous usage, of e-banking services by existing users.

Many researchers have explored and examined factors like trust, credibility, risk, perceived security, perceived ease of use, perceived usefulness, compatibility, accuracy, website design and image that influence the e-banking continuance usage and discovered that some customers are reluctant to accept e-banking services (Al-Gahtani, 2011; Gorbacheva *et al.*, 2011; Nik Mat, 2011; Sadeghi and Farokhian, 2011; Bhattacharjee, 2001). In Arab countries, AbuShanab *et al.* (2010) study found five major factors affecting Jordanians continuous usage of internet banking were identified as significant i.e. performance expectancy, social influence, self-efficacy, perceived trust, and locus of control. While according to a study by Almahamid and Abu Rub (2011), the results also show there are positive relationships between system quality, information quality, service quality, internet self-efficacy, perceived usefulness, intrinsic, user satisfaction, and continuous usage. Moreover, Al-Maghrabi and Dennis (2010) indicate that perceived usefulness, enjoyment, and subjective norms are determinants of online shopping continuance in Saudi Arabia.

According to the Internet World Stats, the number of Internet users increased from 360,985,492 to 3,079,339,857 from the year 2000 to 2015. The annual growth rate of Internet users for that period was 753.0% as illustrated in Table 1.1. Moreover, Table 1.1, showed that the growth rate of Internet Usage in the Middle East was 3,358.6% (Stats, 2015). Furthermore, Table 1.2 showed that there were 127,300 Internet users in Jordan in 2000 and this number increased to 5,700,000 in

2015 (Stats, 2015). This growth rate has encouraged most banks and companies in the Middle East to introduce more electronic services that are available via the Internet, making it the main distribution channel for businesses (Calisir and Gumussoy, 2008). Moreover, Figure 1.1 showed the percentage of internet users in Middle East was 3.7% according to Internet World Status (2014).

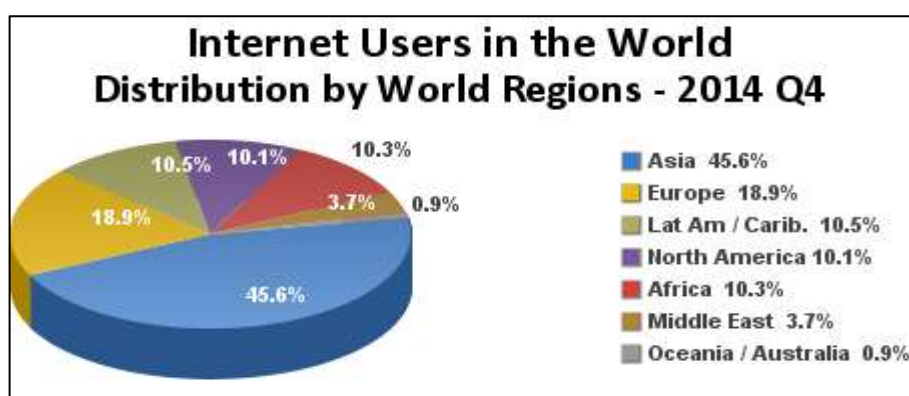


Figure 1.1: Internet Users in the World 2014

Source: Internet World Status- www.Internetworldstats.htm

Table 1.1: World Internet Usage Statistics 2015

World Regions	Population (2015 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2015	Users % of Table
<u>Africa</u>	1,158,353,014	4,514,400	318,633,889	27.5 %	6,958.2 %	10.3 %
<u>Asia</u>	4,032,654,624	114,304,000	1,405,121,036	34.8 %	1,129.3 %	45.6 %
<u>Europe</u>	827,566,464	105,096,093	582,441,059	70.4 %	454.2 %	18.9 %
<u>Middle East</u>	236,137,235	3,284,800	113,609,510	48.1 %	3,358.6 %	3.7 %
<u>North America</u>	357,172,209	108,096,800	310,322,257	86.9 %	187.1 %	10.1 %
<u>Latin America / Caribbean</u>	615,583,127	18,068,919	322,422,164	52.4 %	1,684.4 %	10.5 %
<u>Oceania / Australia</u>	37,157,120	7,620,480	26,789,942	72.1 %	251.6 %	0.9 %
<u>WORLD TOTAL</u>	7,264,623,793	360,985,492	3,079,339,857	42.4 %	753.0 %	100.0 %

Source: Internet World Status- www.Internetworldstats.htm

Table 1.2: Middle East Internet Users 2015

<u>MIDDLE EAST</u>	Population (2015 Est.)	Users, in Dec/2000	Internet Usage 31-Dec-2014	% Population (Penetration)	Internet % users	Facebook 31-Dec-2012
<u>Bahrain</u>	1,346,613	40,000	1,297,500	96.4 %	1.2 %	413,200
<u>Iran</u>	81,824,270	250,000	46,800,000	57.2 %	41.2 %	n/a
<u>Iraq</u>	33,309,836	12,500	2,997,884	9.0 %	2.6 %	2,555,140
<u>Israel</u>	7,935,149	1,270,000	5,928,772	74.7 %	5.2 %	3,792,820
<u>Jordan</u>	6,623,279	127,300	5,700,000	86.1 %	5.0 %	2,558,140
<u>Kuwait</u>	3,996,899	150,000	3,022,010	75.6 %	2.7 %	890,780
<u>Lebanon</u>	4,151,234	300,000	3,336,517	80.4 %	2.9 %	1,587,060
<u>Oman</u>	3,286,936	90,000	2,584,316	78.6 %	2.3 %	584,900
<u>Palestine (West Bk.)</u>	2,785,366	35,000	1,687,739	60.6 %	1.5 %	966,960
<u>Qatar</u>	2,194,817	30,000	2,016,400	91.9 %	1.8 %	671,720
<u>MIDDLE EAST</u>	Population (2015 Est.)	Users, in Dec/2000	Internet Usage 31-Dec-2014	% Population (Penetration)	Internet % users	Facebook 31-Dec-2012
<u>Syria</u>	22,878,524	30,000	5,920,553	25.9 %	5.2 %	n/a
<u>United Arab Emirates</u>	9,445,624	735,000	8,807,226	93.2 %	7.8 %	3,442,940
<u>Yemen</u>	26,737,317	15,000	5,210,593	19.5 %	4.6 %	495,440
<u>Gaza Strip</u>	1,869,055	n/a	n/a	n/a	n/a	n/a
<u>TOTAL Middle East</u>	236,137,235	3,284,800	113,609,510	48.1 %	100.0 %	23,811,620

Source: Internet World Status- www.Internetworldstats.htm

Thus far, e-banking services have transformed banks' conventional methods to serve their clients better – from having to face long queue during working hours to online services that are also around the world anywhere at any time. E-banking offers customers the benefits of convenience and flexibility. Other than that, online banking facilitates banks and users to enjoy a self-service system (Hu and Liao, 2011) which are available anywhere at any time. In addition, the updated information provided by the e-banking are efficient and effective (Oni and Ayo, 2010; Pikkarainen *et al.*, 2004). E-banking provides banks with an opportunity to satisfy their customers and to enhance the image of the bank for being cost effective and convenient compared to traditional banking services (Oni and Ayo, 2010; Pikkarainen *et al.*, 2004).

However, e-banking still encounters usage problems (Nik Mat, 2011), making it necessary for banks to develop strategies that can improve the customer confidence with the technology being used and build a positive attitude towards e-banking (Md Nor and Pearson, 2007). The present study examined the factors influencing this usage and how customers can be persuaded to continue using e-banking services. Many models have been presented to predict individual motives in

using e-banking services, for example Theory of Reasoned Action (TRA) which was developed by Fishbein and Ajzen (1975). Subsequently, Ajzen (1991) used the TRA to develop the Theory of Planned Behaviour (TPB) as a means to predict the behavioural intention of individuals.

Individual behavioural intention is affected by behavioural control coupled with the attitude concerning behaviour and subjective norms. The majority of earlier studies employed the TPB as a framework to identify the factors influencing individual intention to accept and use different types of technology. However, other researchers extended the TPB by adding some variables, for instance Chang *et al.* (2009), Hajiha and Hajihashemi (2008), and Nysveen *et al.* (2005) prolonged the TPB to include perceived ease of use and perceived usefulness. Davis (1989) introduced Technology Acceptance Model (TAM) that examines the following two factors that influence customer acceptance of technology: perceived usefulness and perceived ease of use.

The TAM comprises three prior concepts pertaining to behavioural intentions, namely perceived ease of use, perceived usefulness, and attitude towards behaviour (Davis *et al.*, 1989). This model was developed based on the assumption that people are rational beings and they make systematic decisions following the available information around them (Ajzen, 1991). However, several studies recognised the relationship that exists between individuals' emotional motives such as satisfaction and their intention or willingness to accept new technology (Berndt *et al.*, 2010; Chan and Lin, 2009; Chitturi, 2009; Lai and Chi-Shiun, 2007; Lam *et al.*, 2008; Wu and Herlina, 2008). In this sense, TAM failed to include individual emotional factor like satisfaction. This provides a need for including the user satisfaction in aforementioned models. The limitations of earlier theories and models as discussed earlier call for the need to propose a study to overcome the aforementioned limitations particularly with regards to emotional factors. For this reason this study includes personality traits and satisfaction within the existing TAM framework.

1.3 Problem Statement

The rapid progress in the development of information technology has turned e-banking into the world's fastest growing business (Hua, 2008). With the use of Internet connection, the traditional retail banking system is now transformed into a system called "e-banking" which plays a vital role in enhancing the banking industry (Mitchell *et al.*, 2011). E-banking, according to Lee (2009) and Mitchell *et al.* (2011), has paved the way for improved services in the banking industry, with accompanying benefits for the banks and their customers. The use of e-banking services is currently experiencing a rapid growth in developed countries, and although there is a similar trend towards the consistent use of e-banking in developing countries, the growth rate is not as rapid as in the developed countries (Al-Gahtani, 2011; Al-Somali *et al.*, 2009; Nik Mat, 2011).

E-banking can provide users with some key advantages. First and foremost, e-banking provides users with an exceptional convenience given that this service frees users of banking services from constraints of time and space (e.g., waiting in queues at banks for a long period of time). E-banking service allows them to conduct ever-present banking tasks wherever and whenever they want. Moreover, e-banking is indeed very cost effective and banks provide this service usually at a very low cost, even sometimes free to the users of e-banking (Koenig-Lewis *et al.*, 2010; Shen *et al.*, 2010; Zhou, 2011a; Lin, 2013).

The advantages of e-banking are not limited to the users of this service as e-banking can be considerably profitable to the service providers and the society as well, particularly in less-developed countries. In fact, e-banking provides banks with reduction in costs and improvement in non-interest income, as well as the efficiency across interactions with customers (Kundu and Datta, 2012). More importantly, e-banking can also serve the society via offering the services to people living in remote locations. In developing countries, many banks do not provide services to considerable portion of the society because of high costs of new branches or even establishing ATM machines in remote places where people have low income and their transaction of money is in very small amounts. In such circumstances, e-

banking can dramatically reduce the costs of transactions for banks. Therefore, banks can offer, cost effective and reliable banking services to people living in remote places (The Guardian, 2013). Despite of potential in growth of e-banking, the widespread of this e-service is yet less than expected (Kim *et al.*, 2009). Many Information System (IS) and Electronic Commerce (EC) researchers and scholars have attempted to comprehend and determine factors through which users can be attracted to continue using e-banking services (e.g., Luo *et al.*, 2010; Riquelme and Rios, 2010; Zhou *et al.*, 2010b; Lin, 2011; Zhou, 2011a; Akturan and Tezcan, 2012; Lin, 2013; Hanafizadeh *et al.*, 2014). For example Liao *et al.* (2009) find ease of use, perceived usefulness as the determinants of the continuous usage of e-services. Ohk *et al.* (2015) found that customer satisfaction is influenced by the active use of e-services.

Despite limited understanding of determinants of customer retention within e-banking context, the existing literature on corresponding research contexts (e.g., online shopping) revealed that instead of perceptual-cognitive factors which are important to initial adoption, the behavioral and emotional characteristics of the e-service (e.g., user satisfaction and personality), are key determinants of post adoption behavior (continuous usage) of existing customers refers to studies by (Wang, 2008; Kang *et al.*, 2009; Wen *et al.*, 2011; Chiu *et al.*, 2012).

On the other hand, earlier technology acceptance theories and models namely Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), Theory of Planned Behaviour (TPB) (Ajzen, 1991), and Technology Acceptance Theory (TAM) (Davis, 1989) were bound by certain limitations. For example, the constructs of TRA are belief, attitude, intention, and behaviour – rooted from the study of social psychology. TRA theorises that behavioural intention is ascertained by the outlook of an individual and the influence exerted on this individual. Although researchers assert that the TRA has successfully been used to forecast an individual intention in various technological subjects (Ajzen and Fishbein, 1980; Grandón *et al.*, 2011; Korzaan, 2003), the TRA is perceived as a poor predictor of actual behaviour in situations where the subjects under study have no conscious control over behavioural

performance or where the available information is incomplete (Ajzen, 1991; Ajzen and Fishbein, 1980).

The ultimate limitation of TRA is derived from the assumption that behaviour is within the conscious control of an individual. In other words, the theory only applies to behaviour that is consciously considered in advance. According to Ajzen (1991), Theory of Planned Behaviour (TPB) is an extension of the TRA where a concept is added to incorporate the difficulty or ease of performing a behaviour. The reason for extending the TRA was due to behavioural limitation where individuals do not have a complete control over their consciousness (Ajzen, 1991). Moreover, it has been observed that it is improbable that monolithic belief structures (found in the TPB) denoting various dimensions will be consistently lined to the antecedents of intention (Teo and Pok, 2003). On top of that, the TPB must have a unique operationalization in each setting being used (Mathieson, 1991).

Next, the Technology Acceptance Model (TAM), which evolved from the TRA, is primarily known as a model that is directed at the behaviour and attitude of individuals towards technology (Davis, 1989). The original TAM is made up of three key components: perceived ease of use, perceived usefulness, and computer usage. Davis (1989) defined “usage” as an indicator of technology acceptance and conducted a study to develop validate a tool for perceived ease of use and perceived usefulness.

The Cognitive Model (COG) by Oliver (1980) was proposed to explain and predict the user behaviour in information system acceptance and continuance. This model was initially employed to develop the Expectation-Confirmation Model (ECM) and has been extensively applied to evaluate consumer satisfaction and post-purchase behaviour. The COG defines satisfaction as a function of expectation and disconfirmation, while expectation is an attitude antecedent (Oliver, 1980). The COG clearly describes the cognitive process of how these variables affect ultimate success and sustainability of a product or service during different adoption stages.

Bhattacharjee (2001b) proposed the Expectation-Confirmation Model (ECM) which is now known as one of the most popular models to explain the satisfaction and continuance usage behaviour among information system users. The ECM posits that an individual intention to continue IT usage is dependent on three variables: (i) the user's level of satisfaction with IT; (ii) the extent of user's confirmation of expectations; and (iii) the post adoption expectations in the form of perceived usefulness. The ECM is broadly applied to examine the continuance usage among information system users rather than just explaining satisfaction. Moreover, and more importantly, ECM describes confirmation as "the congruence between expectation and actual performance" (Bhattacharjee, 2001a, p. 359), and assumes that the influence of perceived performance is already explained by confirmation.

Alternatively, the TCT was presented by Liao *et al.* (2009) as a new theory on predicting the user's continuance usage towards a technology. Upon review, the researchers discovered that TCT is a mixture of three most well-known theories in the research of technology and information system, namely Technology Acceptance Model (TAM) by Davis (1989), Expectation Confirmation Model (ECM) by Bhattacharjee (2001b), and Cognitive Model (COG) by Oliver (1980). TCT is a three-level model with information system continuance usage as its final dependent variable. It combines two central constructs, namely attitude and satisfaction, and three first-level antecedents which are confirmation, perceived usefulness, and perceived ease of use. It is a substantially enhanced model in comparison to the TAM, ECM, and COG in terms of the width of applicability and explanatory power (Liao *et al.*, 2009).

Moreover, COG, ECM, and TAM have excellent explanatory power in the continuous usage area (Ho, 2010). According to a study by Liao *et al.* (2009), TAM, COG, and ECM have different explanatory powers with relative strengths and weaknesses. For example, with regards to explanatory power, the Cognitive Model was deemed as superior to the other two, and the Expectation Confirmation Model performed better than the Technology Acceptance Model. The six constructs in the three models were synthesised to propose the new Technology Continuance Theory

(TCT). The main theoretical contribution of TCT is that it combines the two central constructs of attitude and satisfaction into one continuance model (Liao *et al.*, 2009).

It also retains the well-established constructs of perceived usefulness and perceived ease of use as first-level antecedents. The superiority of TCT over other models is demonstrated by empirical means. When considering the adoption of various stages of lifecycle, the TCT represents a substantial improvement over the TAM, ECM, and COG models quantitatively and qualitatively. Quantitatively, TCT provides higher explanatory power for not only behavioural intention, but also for attitude and satisfaction. Qualitatively, a major theoretical contribution of TCT is that it combines two central constructs: attitude and satisfaction into one continuance model. In order to support and assist customers in their use of e-banking, the factors influencing customers to use e-banking services need to be determined.

One of the studies on the usage of internet banking in Jordan disclosed that there are three factors with direct impacts on the Internet usage: ease of use, privacy, and quality. The study also indicated that e-banking is still weak in Jordan (Al-Rfou, 2013), however, this study used only 75 sets of questionnaire to be distributed by e-mail, which is insufficient to justify the weaknesses. Furthermore, the study focused on the infrastructure for banks in Jordan to be improved in order to compete with local and international banks.

Alsamydai *et al.* (2012) discovered that service quality, personal factors, and perceived usefulness are the factors influencing consumer satisfaction and continuous usage e-banking services in the context of Jordanian e-banking user. In his study personal factors included knowledge, needs, trust, habit, personal experience, and perceived usefulness. Additionally, Al-Rfou (2013) mentioned that security, trust, content design, privacy, simplicity, and reliability are powerful factors influencing the continuous usage of e-banking. However, the sample used in the study was only concentrated on the non-users of e-banking. Other than that, Al-Muala *et al.* (2012) posited that behavioural intention, attitude, and subjective norms are significantly connected to the continuous usage of e-banking services. Liao *et al.* (2007) tested the relationship of satisfaction with continuous usage of e-services

using TBP and ECT theory. However, their study was focused on the cyber university system. He used sample of the students studying in the universities. Further he recommended that the relationship of the satisfaction and continuous usage is obvious and it needs to be tested in the other e-services environments to validate and integrate the construct within existing models on continuous usage behaviour. Despite of these evidences limited efforts have been done by the researchers to integrate satisfaction within existing models on continuous usage of the e-banking. The present study was carried out to fill in the theoretical research gap by analysing the variables that affect individual intention to continuously use e-banking services to improve the knowledge in the e-banking area within the non-Western context. It examined and proposed a model that considers emotional dimensions like the Technology Continuous Theory (TCT) and variables that were used in previous models or theories. The proposed model includes more variables such as confirmation and Big Five personality traits as a moderator of satisfaction to complete the emotional dimensions. In order to avoid the limitations of previous studies, this model is also enhanced to a certain explanatory level within the e-banking sector in Jordan.

Although researcher (Akter *et al.*, 2010; Chen *et al.*, 2010; Ho, 2010; Yen and Tsai, 2011; Liao *et al.*, 2007)) agreed on the relationship of satisfaction and continuous usage of e-services. However, literature is unable to show consistent findings about the nature of this relationship. Some studies have discovered a positive relationship between satisfaction and continuance usage (Akter *et al.*, 2010; Chen *et al.*, 2010; Ho, 2010; Yen and Tsai, 2011), particularly for e-banking services. Some researchers have also argued that continuance usage and user satisfaction are negatively correlated (Ang and Soh, 1997; Mawhinney, 1990; Mawhinney and Lederer, 1990). Moreover, Bikson and Gutek (1983) found no relationship between the number of usage and satisfaction level with new technology. In contrast, Schewe (1976) found no significant relationship between system and user satisfaction, and Lawrence and Low (1993) did not find this relationship to be significant. Similarly, Mawhinney (1990) found no relationship between user satisfaction and system. Srinivasan (1985) posited that the relationship is not always positive, while Liang (1986), Udo and Guimaraes (1994), and Loh and Ong (1998) showed a very weak relationship.

The above mentioned scenario indicates that there might be possibility that some intervening factors are influencing this relationship. Hughes et al. (2012) argued that the individual's personality traits are important factor that influence the continuous usage of e-services. However, his findings were based on the social media context. Similarly, a more recent study of Servidio (2014) indicated that individual's personality is predictor of the addiction of using internet services. Another study by Chen (2013) depicts the personality traits as indicator of e-services usage among sales force. Mittal and Kamakura (2001) indicated customers Characteristics moderates the relationship between satisfaction and repurchase behaviour. Similarly, some other researches (Mittal and Kamakura, 2001) insisted on the interaction of satisfaction and personality traits. These studies showed the personality traits are the possible customer's characteristics that can intervene between the relationship of the satisfaction and continuous usage. However, these studies showed two fundamental limitations, which pertains the gap for the studying personality traits as moderator between the relationship of satisfaction and continuous usage. First, these studies used personality traits as moderator between the satisfaction and repurchase behaviour. However, there is scare of effort in testing this relationship between satisfaction and continuous usage. Second, these studies are either not conducted in e-banking context or they are mostly conducted in western countries. This provides the gap to study personality traits as moderator in e-banking context of Jordanian Banks to understand weather personality traits significantly moderates the relationship between satisfaction and continuous usage of e-banking.

Sekaran and Bougie (2011) argued that a moderator is a variable that with contingent effect on the relationship of independent and dependent variables. It may strengthen or weaken the relationship of independent and dependent variables. As such the researcher hypothesizes that Big Five personality traits are able to support and moderate the relationship between satisfaction and e-banking continuous usage based on the following studies.

A study by Roy *et al.* (2013) indicated that movie celebrities create more positive consumer attitude than sports celebrities. Agreeableness, openness, and partially conscientiousness are three important moderators of consumer attitude in

the Big Five personality dimensions. All dimensions of source credibility were found to have significant moderating effects on consumer attitude (Roy *et al.*, 2013).

The study by Zweig and Webster (2003) examined if personality traits moderate the relationship between workplace monitoring system characteristics, fairness, privacy, and acceptance. A total number of 622 participants were asked to provide their assessment of an awareness monitoring system. Results indicated that emotional stability and extraversion altered the relationship between the paths in a model of monitoring acceptance. Specifically, people who scored lower in extraversion and emotional stability were less likely to endorse positive attitudes toward monitoring, even with privacy and fairness safeguards in place. Based on the study by Zweig and Webster (2003) the researcher concluded that using Big Five personality traits as a moderator can enhance the relationship between satisfaction and e-banking continuous usage.

Personality is a stable set of characteristics and tendencies that determine individual commonalities and differences in thoughts, feelings, emotions, and actions (Maddi 1989). Research on human personality, especially in the areas of activities and behaviour, has been the focus of research among academics specialising in various spheres. Moreover, personality is described as an individual temperament or inclination that culminates in the display of specific attitude and behaviour under certain circumstances (McCrae and Costa, 1987). Personality exposes the outstanding attributes of individuals which mirror their thoughts and actions (Devaraj *et al.*, 2008).

A number of researchers such as Devaraj *et al.* (2008), Landers and Lounsbury (2006), and Sahney *et al.* (2010) have delved into the influence of personality traits on technology usage. Previous studies detected the correlation between technology usage and individual personality traits, namely openness to experience, agreeableness, conscientiousness, neuroticism, and extraversion (Lee, 2009; Lee *et al.*, 2012). Personality traits are rarely used to discuss the phenomenon under the context of information system, especially not in the emerging topic of information system continued usage. Information system continuance usage has

become a prominent matter these days because it is perceived as the key indicator to the successfulness of information system (Lin *et al.*, 2010).

As the independent and dependent constructs are based on customer perception, there are great chances that individual differences may interact within the relationship. There are various models and personality traits that have been identified and used by various researchers, however, Big Five personality traits have repeatedly been investigated, justified, and tested by researchers (Barrick and Mount, 1993; Judge *et al.*, 2002; Wilt *et al.*, 2011). Following the same tenet, the present study focused on Big Five personality traits model to evaluate the personality of respondents and being applied as potential moderators between the focal variables. The Big Five personality traits is important as a moderator because it shows customer satisfaction with the performance appraisal system, and in what way the concept affects the independent and dependent variables (Smith and Fortunato, 2008). Skarlicki *et al.* (1999) and Behrenbruch *et al.* (2013) also used Big Five personality traits as a moderator.

1.4 Research Questions

The framework of this study was based on the Technology Continuance Theory (TCT) (Liao, *et al.* 2009). In addition, the current study extended the Technology Continuance Theory by including additional construct as a moderator, the Big Five Personality Traits (Extraversion, Neuroticism, Openness to Experience, Agreeableness, and Conscientiousness) on each of the customers satisfaction as independent variable and e-banking continuance usage as dependent variable to investigate the factors that influence customers continuous usage in e-banking usage in Jordanian banks. Therefore, this study looked for the answers to the following research questions:

- i. What is the relationship between the individual factors, namely confirmation, perceived ease of use, and perceived usefulness with satisfaction?

- ii. What is the moderating effect of the Big Five personality traits on the relationship between satisfaction and the continuance usage of e-banking in Jordanian banks?
- iii. What is the mediating effect of satisfaction on the continuance usage of e-banking?
- iv. What is the mediating effect of attitude on the continuance usage of e-banking?

1.5 Research Objectives

This research tries to add to the body of knowledge in the area of technology continuance usage by investigating if the aforementioned factors may affect customer's intention in continuance usage of e-banking services:

- i. To investigate the relationship between the individual factors, namely confirmation, perceived ease of use, and perceived usefulness with satisfaction.
- ii. To determine the moderating effect of the Big Five Personality Traits on the relationship between satisfaction and the continuance usage of e-banking in Jordanian banks.
- iii. To assess the mediating effect of satisfaction between the individual factors and the continuance usage of e-banking continuance usage.
- iv. To assess the mediating effect of attitude between the individual factors and the continuance usage of e-banking continuance usage.

1.6 Scope of the Study

The present study attempts to cover a wide range of issues in regard to e-banking continuance usage in Jordan. The current study is focused on the e-banking continuance usage, thus, scope of the current study consisted on the customers of the e-banking in the Jordan. It was confined to the current users of e-banking in Jordanian banks, covering two of the biggest banks in Jordan, which are Arab bank and Jordanian commercial bank. These banks were selected for the study as they provide full e-banking services, and at the same time, their customers are geographically dispersed in all three main cities of the Hashemite Kingdom of Jordan, namely Irbid, Amman, and Aqaba. The research model consisted on the constructs of the perceived usefulness, ease of use, confirmation, attitude, satisfaction, personality traits and continuance usage.

1.7 Purpose of Study

The purpose of the study is to determine the key factors influencing the continuous usage of e-banking and to evaluate the relationships between bank customers' variables (perceived ease of use, attitude, confirmation, satisfaction, and perceived usefulness), dependent variable (e-banking continuance usage), and the moderating effect of Big Five personality traits (extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness). Customer satisfaction is the independent variable and e-banking continuance usage is the dependent variable.

1.8 Significance and Contribution of the Study

The present study adds to the body of knowledge in two major areas. First, it extends one of the latest models proposed in the technology acceptance domain. The extension proposed here is testing the moderating effect of Big Five personality traits which have not been investigated as a moderator on the relationship of satisfaction and e-banking continuous usage, and the mediating effect of satisfaction and attitude

on e-banking continuous usage. Second, this study explores the factors affecting e-banking continuous usage in Jordan. Jordan is a developing country which experiences demanding changes in the era of science and technology. It is required to adopt and utilise all of the technological resources available through aid programs from other countries in order to be competitive in the global economy. E-banking is related to one of the most vital sectors of the banking system and the best channel of distribution (Salehi and Alipour, 2014; Thulani *et al.*, 2009). It has been employed as a means of communication for the distribution of services and products. In this sense, e-banking is still at its initial stage where less than half of the Jordanian banks are maintaining and utilising websites for the purpose of financial transactions (Awamleh *et al.*, 2003).

1.9 Operational Definitions

In this section, the researcher introduces key term definitions that frequently appear in the present study. These terms are explained more in the literature review.

1.9.1 E-banking

E-banking is a process of performing banking services using internet. These banking services might be fund transfer, bill payment, checking, saving account balance update, and many other normal banking business activities by the customers (Khan and Mahapatra, 2009). For the current study, e-banking is the use the internet by customer to transfer funds, make enquiries, pay bills, manage stocks online, and conduct other transactions without having to make face-to-face interaction with the banks.

1.9.2 Continuance Usage

The continuance usage intention can be defined as user's intention to use technology in a long term (Bhattacharjee, 2001b). The present study operationally

defines the continuance usage as individual's willingness to continue using e-banking services.

1.9.3 Attitude

Attitude is the behavioural intention to explain or predict adoption and use information technology (Benbasat and Barki, 2007; Wixom and Todd, 2005). For the present study the attitude is the individual's tendency to repeat the usage of the product or services provided by the banks.

1.9.4 Continuance Usage

Continuance usage of e-banking is defined as the amount of commitment or willingness that users have in continuing an action over and over again using and performing the online transaction and payment by using the Internet (Kang *et al.*, (2012). This construct in this study refers to the willingness of individuals to continue in their usage of a particular e-banking service. The operational definition of the construct is the degree to which an existing user of a particular e-banking service tends to use the service again.

1.9.5 Satisfaction

Oliver (1981) defined satisfaction as the summary of psychological state as a result from disconfirmed expectations or emotions from surrounding, coupled with the customers' prior feelings about their consumption experiences. Satisfaction is also known as a cognitive-based phenomenon, where the customers are pleased and satisfied from the products or the services that meet their needs and expectations. The operational definition of the construct is the extent to which m-banking users believe that the e-banking services available to them meet their expectations (Lin and Wang, 2006).

1.9.6 Perceived Ease of Use

Perceived ease of use refers to using systems with less physical stress and mental exercise help individuals reach a certain level of satisfaction (Odumeru, 2012; Safeena *et al.*, 2011). For the current study, perceived ease of use refers the degree of to which customers perceive e-banking services provided by their bank are easy to use.

1.9.7 Perceived Usefulness

Perceived usefulness is described as the prospective user's biased assumption that the employment of a particular application procedure will enhance the efficiency of his task (Davis *et al.*, 1989). In the present study, perceived usefulness refers to the usefulness and benefits recognised by individuals when using e-banking.

1.9.8 Confirmation

Confirmation is the user perception of the congruence between the expectation of services used and its actual performance (Bhattacharjee, 2001b). In the present study, user expectation confirmation refers to the confirmation of expected performance and quality from using the e-banking service.

1.9.9 Big Five Personality Traits

According to personality psychologists, the Big Five personality traits refer to five broad personality traits that give a complete portrayal of individual personality (John and Srivastava, 1999; Rose *et al.*, 2010). These are the five major traits attributed to a moderator in determining the correlation between the individual's level of satisfaction and e-banking continuance usage.

1.9.9.1 Neuroticism

Goldberg (1992) argued that individuals reflect neurotic traits, such as anxiety, envy, jealousy, moodiness, and are very space and time efficient for research purposes. The tell-tale signs for individuals affected by neuroticism are likely to be grumpiness, stress, irritation, discouragement, apprehension, anxiety, self-doubt, vexation, discomfort, and hypersensitivity. For the current study the Neuroticism refers to the individuals with high level of neurotic traits.

1.9.9.2 Extraversion

Goldberg (1981) defined extraverts as individuals who tend to enjoy human interaction and tend to be enthusiastic, talkative, assertive, and gregarious. Goldberg (1981) defined extraverts as individuals who “tend to enjoy human interactions and to be enthusiastic, talkative, assertive and gregarious”. Cohen and Schmidt (1979), on the other hand, described extraverts as individuals who “seek excitement and social activity as an effort to heighten their arousal level.” Extraversion portrays people who are outgoing, affable, chatty, open-minded, motivated, and self-confident. For the current study, extraversion is the individuals with high social skills, theatrical, impetuous, pleasure-seeking, open-minded, and lively.

1.10 Agreeableness

Goldberg (1992) described an individual with agreeable traits as one who is sympathetic, cooperative, warm, and considerate. He also defined agreeableness as “the number of personality-related words similar to those present in earlier and more recent manifestations of the construct; examples include friendly, good-natured, cooperative, trustful, nurturing, sociable, and considerate.” In accordance with the views above, the present study agreeableness to include the following features: flexibility, chivalry, patience, compassion, gullibility, generosity, helpfulness, and friendliness, coupled with a personality that embraces reliability, gentleness, moderation, a high trust level, and docility.

1.11 Openness to Experience

Costa and McCrae (1992) defined openness a characteristic that involves active imagination, aesthetic sensitivity, attentiveness to inner feelings, preference for variety of, and intellectual curiosity. Openness to experience for the current study related to the originality of opinion, methodical inventiveness, political open-mindedness, and innovative thinking.

1.12 Conscientiousness

Farthing (1992) opined that conscientiousness comprises the features of subjectivity, awareness, sentience, the ability to experience or to feel, wakefulness, having a sense of selfhood, and the executive control system of the mind. Contemporary investigations have identified the traits related to conscientiousness as virtuosity, diligence, good organisational skills, orderliness, reliability, and a success-driven attitude. On the secondary range of characteristics, employees are deemed conscientious if they are authoritative, well-organised, proficient, deliberate, disciplined, and challenge-driven. For the current study conscientiousness refers to the degree of customer's awareness and ability to experience e-banking services.

1.13 Structure of the Dissertation

Chapter 1 discusses the background of the research, problem statement of the research, as well its significance and contribution. It also provides the research questions derived from the problem statement. Furthermore, Chapter 1 discusses the research objectives, scope, and purpose of the research. Finally, the operational definitions are also presented in this chapter.

Chapter 2 provides the literature review of the research, comprising detailed discussion about the supported theories and models which are used to develop the

framework of this study, Furthermore, constructs are explicitly discussed in this chapter along with their hypotheses.

Chapter 3 gives an insight to the research methodology of the present study, particularly about the research paradigm and research design. Moreover, sampling design is also mentioned in this chapter, in addition to the overview of questionnaire survey's response rate. Other than that, it provides a proper justification for the quantitative data analysis approach. This chapter also reports the measurement scale, where the reliability and validity are also identified as per in previous studies. Finally, Chapter 3 discusses the analytical strategy and the statistical techniques being used to address the research questions and hypotheses.

Chapter 4 presents the data analysis method and technique to examine the research hypotheses. The collected data were processed using statistical software for the Social Sciences (SPSS) 21 for Windows and AMOS for structural equation modelling version 21 for windows in three different stages. The first stage is where initial data screening was done through analysing missing data, outliers, and normality. After the initial data screening, common method bias and non-response bias were tested, and for further use of SEM for measurement model and structural model validation. During the measurement model, the convergent and discriminant validity were tested. Structural models were then used to test the hypothesised relationships of the present study.

Chapter 5 provides discussion on the findings of the present study. The chapter starts by highlighting the research process adopted for the present study, before moving on to focus on the discussion of the findings for each research objective. Furthermore, theoretic, managerial, and empirical implications of the study are provided in the next section, followed by the limitations and future recommendations.

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