

## Factors affecting Jordanian electronic banking services

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CHRONICLE

ABSTRACT

### Article history:

Received: August 8 2019

Received in revised format: September 20 2019

Accepted: October 3, 2019

Available online:

October 3, 2019

### Keywords:

Jordan

Banks

Electronic banking

Services

Information Technology

This study aimed to identify the factors influencing on electronic banking services provided by Jordanian banks. Perceived usefulness, ease of use, trust, privacy and security and convenience are the factors investigated in this study. A sample of 300 clients working at King Abdullah University Hospital staff who were active bank accounts in different local banks in Jordan was selected, randomly. To collect the primary data, the study used a questionnaire design based on a 5-point scale. Results of the study found that perceived usefulness, ease of use, trust and privacy directly and positively influenced on e-banking usage. Convenience was found to have no effect on e-banking services. The study recommends that an understanding the factors affecting e-banking is very essential for the practitioners who seek new ways of banking services in the current competitive environment.

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## 1. Introduction

The spread of Internet-based technologies has led to fundamental changes in how companies interact with their customers. The banking and financial sector is considered to be at the forefront of other sectors that depend on Internet and technology in interacting with customers through e-banking services. The concept of e-banking refers to the process of automatic delivery of products and services directly to customers through electronic communication channels. E-banking services are defined as a set of procedures applied by any consumer by accomplishing banking transactions electronically without having to visit the bank (Mehmood et al., 2014). In Jordan, banks are trying to differentiate themselves in a competitive sector not only to align their services to the constantly evolving customers' needs, but also to change some of the bank's traditional functions, thereby reducing the overhead cost of the bank and branches (Abu-Assi et al., 2014). A growing number of Jordanian banks are also looking for innovative ways to deliver their services, such as online banking, to make these services more convenient and efficient for customers. It is important for banks to ensure that customers perceive the quality of services and are satisfied with online banking. Banks are facing many challenges that limit their provision of electronic services, such as electronic signatures, personal identification, confidentiality and security, customer privacy, electronic banking contracts and others (Shendi, 2011). This study investigates five factors affecting electronic banking services in Jordan; including perceived usefulness, privacy, ease of use, trust, and convenience (Jaruwachirathanakul & Fink, 2005).

## 2. Literature review

### 2.1 Electronic banking: Concept

Online banking refers to the banking services via website provided by the bank (Yee & Faziharudean, 2010). The emergence of electronic banks dates back to the early 1980s when e-money emerged. The use of cards was in the beginning of the last

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century in France in the form of cards used in public telephones and postcards used in the mail in the United States. The cards began to spread significantly when American Express issued the first plastic card in 1958, followed by eight banks in 1968 issuing a card called Bank Americard, which later became Visa International. The first bank to offer e-banking services was introduced in the United States in the mid-1990s. The banks have begun to give their customers access to their accounts through the Internet through the use of different systems. Therefore, the client is able to access his/her accounts in a secure way using the security systems available and perform all the required operations him/herself in a secure Internet environment (Kose, 2009). So, every customer that has a computer and an Internet connection can perform all e-banking services for 7 days a week and 24 hours a day except cash withdrawals. Internet banking offers many financial services such as; viewing balances and details of accounts, getting an account statement online, transferring funds within customer accounts, paying to credit cards and viewing the latest Foreign Currency Exchange rates. This development has resulted from the tremendous development of communication networks (Mansi & Amany, 2015). Banks should be encouraged to provide flexible network and communication systems that improve the quality of services used by customers.

### *2.2 Use of electronic banking services*

In the modern world, the efficiency of the banking system can be regarded as one of the most important elements of the advancement of any country. The health of the economy depends on the integrity of the banking system, and the economic system (Mehmood et al., 2014). The increased use of electronic banking services is considered to be one of the most important elements of success for banking systems (Mansi & Amany, 2015; Alazzam et al., 2015). Online banking was become the mainstream by 2000. The banking sector has witnessed many changes over the past few years. The technological development and the spread of the Internet have contributed to fundamental changes in this sector. The Internet is the basis for new banking operations (Kaleem & Ahmad, 1970). Because of the rapid developments in the means of communication, many banks have used new methods of delivering services to their clients. Technology helps to reduce costs and improve the relationships between the bank and its clients and motivate them to use various electronic services (Lee et al., 2005). As a result of technological developments in the banking sector, new banking services have been introduced, such as e-transfer, speaking bank, SMS services, e-trading for securities, electronic credit cards, ATMs and many other electronic services (Kaddomi, 2008).

### *2.3 Factors influence using electronic banking services*

The way of conducting banking transactions by clients has been changed by using electronic banking services, and accordingly, there is less need to visit the bank personally to perform activities of banking. Now it is possible for bank clients to carry out these activities almost everywhere as long as they have devices connected to the Internet. As for banks, this new innovation has led to a need to evaluate the factors that influence the acceptance and use of electronic banking services to help them develop appropriate approaches to enhance their use. There are many factors, discussed through previous studies, that influence individuals' acceptance and use of technology. These factors can be classified into three classifications. The first classification is factors related to the characteristics of technology, such as ease of use, usefulness, and trial ability. The second classification is associated with factors related to individual characteristics of users, such as attitude, self-efficacy, personal innovativeness. Finally, there are factors that are related to external or social environment such as subjective norms, external control beliefs and facilitating circumstances (Moga et al., 2012). There are some reasons that cause the lag in using e-banking services such as the lack of top management support, security, power conflict in the internet banking adoption decision, and the general lack of investment in e-commerce applications (Awamleh et al., 2003). Many studies have examined the specific factors that influence the use of electronic banking services. Suganthi et al. (2001) conducted a study and reported that accessibility, reluctance to changes and awareness, were among the factors that influence using electronic banking services. Perceived ease of use and perceived usefulness were addressed as the most important factors to use e-banking services (Ho Cheong & Park, 2005; Guriting & Ndubisi, 2006; Daniel & Jonathan, 2013). Other factors found to influence internet banking are privacy, trust, convenience. (Muneer, 2010; Mehmood et al., 2014; Ankit, 2011, Qaddoumi et al., 2011). The following is a summary of factors that influence using internet banking services explained in this study:

#### *2.3.1 Privacy*

Privacy plays an important role for the growth of trust in Internet banking because when customers process financial information and know that their information processing will be highly secured, their confidence in the bank will be increased. Internet banking systems should provide security mechanisms, decreasing the risk of user-related information leaks leading to fraud (Rawashdeh, 2015). Customers often need to have full control of their financial behaviors, especially since they know that online information and services grow rapidly, and so the level of risk is high. Featherman et al. (2010) examined ways of reducing privacy risk to enhance the adoption of the e-service. Their results indicated that privacy risk hinders e-service adoption and consumers were always encountered with some degree of risk coming from the uncertainty of Internet banking as a new technology, but this potential risk can be lessened by increasing consumers' perceptions of its ease of use and knowledge of its related security.

#### *2.3.2 Ease of Use*

Ease of Use is referred to which extent customers recognize Internet banking as an easy to understand and use (Davis et al., 1989; Al-Rfou, 2013). This definition indicates that in the case of customers lacking experience or finding Internet banking difficult to use, customers will be less likely to use it. The less skills the system requires, the more likely to use Internet

banking. The ease of use is related with other dimensions concerned with using electronic banking such as individual experience and perceived usefulness.

### 2.3.3 Trust

The customer's trust of the system refers to the enthusiasm of the customer to be vulnerable to the service providers based on positive expectations (Rousseau et al., 1998). This orientation relies on an exchange of information and services with a partner in whom one has trust (Rotchanakitumnuai & Speece, 2003; Zahid et al., 2010) and it is vital for a bank to design a proper Internet banking strategy that can build customers trust in Internet banking (Popoola & Arshad, 2015). If customer had a high degree of control over his/her internet banking transactions, trust will be found highly. Ibbotson and Moran (2003) reported that the maintenance of future earnings and consumers' trust can be achieved thru building deep relationships with customers.

### 2.3.4 Usefulness

Usefulness is defined as "the degree to which a person believes that a particular information technology would enhance his or her job performance." (Wang et al., 2003). Usefulness is a contributing factor on internet adoption. Based on that definition, it can be said that, the superiority of internet banking over the regular banking methods can affect the percentage of internet banking adoption. For example, the flexibility of bank transactions in internet access, would be an advantage to people who are extremely busy and have tight schedule. Moreover, the perceived usefulness has a potential effect on adoption of internet banking (Enaizan et al., 2017, 2018).

### 2.3.5 Convenience

Convenience is another factor that affect e-banking (Daniel, 1999; Chung & Paynter, 2002; Amin, 2016) since e-banking provides a higher degree of convenience which enables customers to access e-banking services at all times that is 24/7 access and at any place (Wan et al., 2003; Lichtenstein & Williamson, 2006). E-banking is more convenience for people to pay their utility bills, check balances, transfer funds, apply for auto loans and mortgages, and use other various services very easily anytime from anywhere. Therefore, customers who are using e-banking are frequently motivated by convenience and efficiency.

## 2.4 Electronic Banking services in Jordan

Jordanian banking sector is a very dynamic sector. It consists of 27 banks, including 14 local commercial banks, 9 foreign banks and 4 Islamic banks (Central Bank of Jordan 2017). The new Banking Law came into effect in Jordan in 2000, which aims to improve the efficiency of this sector. This law protects the interests of depositors, reduces the risks of the financial market and includes items on new banking practices such as e-commerce and e-banking. Arab bank and Jordan Kuwait Bank, two local Jordanian banks, were the first banks to adopt internet banking in Jordan in 2000 (Siam, 2006). During the period of 2001- 2003, banks in Jordan did not fully utilize the concept of internet banking. The website was used only to provide customers with different types of information such as promotional and institutional information such as; contact details, branch locations, details about board of directors, and information about special events (Awamleh et al., 2003). In order to achieve a competitive advantage and increase the responsiveness to customers' needs with lower cost, many banks in Jordan are adopting internet banking (Siam, 2006). It is important for banks to ensure that customers perceive the quality of services and are satisfied with internet banking. Some of e-banking services offered by Jordanian banks are; SMS, Mobile Bank, Bank Call Centre and bank online.

## 3. Conceptual Framework

Based on the literature review and research hypotheses, the study model (Fig. 1) has been developed to investigate the relationship between five independent variables "perceived usefulness, privacy & security, ease of use, trust, and convenience" and the dependent variable which is using electronic banking services by customers of Jordanian commercial bank.

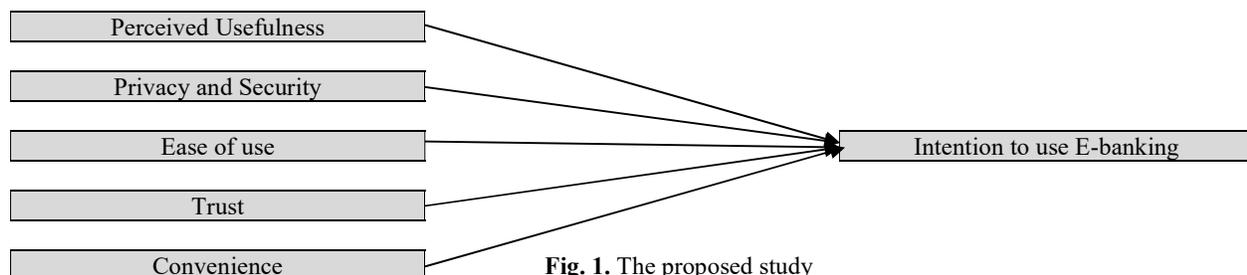


Fig. 1. The proposed study

## 5. Research Methodology

This study aims to investigate the factors influencing using internet banking services in Jordan. The study shows the causal relationship between variables. Data on the use of e-banking services have been collected. This study was based on the sample

field survey of the study population using the questionnaire. The analysis unit in this study was the bank clients of the employees of King Abdullah University Hospital in Jordan. The targeted population of this study consists of 450 administrative employees of King Abdullah University Hospital in Jordan. All these employees are having banking accounts in different Jordanian banks. A random sample of 300 administrative employees was chosen for this study. Structured questionnaires were distributed to this sample. 246 questionnaires were used in the analysis, with a response rate of 82%. The remaining questionnaires (18%) were excluded for excluded from analysis for their inconvenience. The questionnaire consisted of two parts. The first part includes the personal demographics of respondents which are gender, age, educational level, income and work experience. The second part of the questionnaire consists of (21) questions related to the factors that affect using internet banking services by customers, which are the expected usefulness, privacy, ease of use, trust, and convenience.

### 5.1 Reliability Test

The Cronbach's alpha was used to measure the total consistency between all items of the instrument and internal consistency among items for each dimension of the study. The Cronbach's Alpha test for all items of the questionnaire was above 0.60, which is considered accepted in social science research. This indicates the ability of the tool to achieve the objectives of the study.

**Table 1**  
Reliability statistics of study dimensions

Dimension	No. of items	Cronbach's Alpha
Perceived Usefulness	4	0.62
Privacy	4	0.63
Ease of use	5	0.65
Trust	4	0.76
Convenience	4	0.62

### 5.2 Descriptive Results

Table 2 presents the summary of basic statistics for the participants in this survey.

**Table 2**  
The summary of the demographic profile of respondents

		Frequency	Percentage %
Gender	Male	116	38.7
	Female	184	61.3
Age	Less than 30 years	167	55.7
	30-40 years	115	38.3
	41-50 years	10	3.3
	More than 50 years	8	2.7
Educational level	Diploma	35	11.7
	Bachelor	194	64.7
	Post graduate	71	23.7
Income	Less than 300 JD	8	2.7
	300-400 JD	115	38.3
	400-500 JD	78	26.0
	More than 500 JD	99	33.0
Working experience	Less than 5 years	42	14.0
	5-10 years	194	64.7
	More than 10 years	64	21.3

### 5.3 Examination Conceptual Model

The conceptual model is analyzed using AMOS software. The two stages are measurement model (CFA) and structural model.

#### Stage 1 of SEM: Overall CFA Model for Research Model

For the research model, CFA is used to analyze overall measurement model. The overall measurement model includes all latent constructs with their corresponding indicators. Fig. 2 presents the overall CFA model for the second research model.

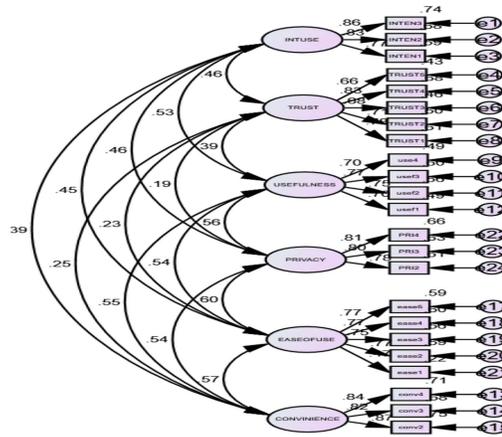


Fig. 2. Overall CFA Model for Research Model

5.3.1 Goodness of Fit Indices

The results prove that the overall measurement model for the research model provides adequate fit of the data (p-value = 0.000, GFI = 0.874, AGFI = 0.880, CFI = 0.907, TLI = 0.949, IFI = 0.957, RMSEA = 0.049).

Stage 2 of SEM: Structural Model for Research Model

Structural model examines the direct effects of the independent variables, namely, usefulness, privacy, ease of use, trust, and convenience on INTENTION, the dependent variable. The 5 effects pertain to H1, H2, H3, H4 and H5, respectively.

5.3.2 Direct Effects of Variables

Fig. 3 presents the AMOS structural model for testing the hypothesized direct effects with standardized regression weights.

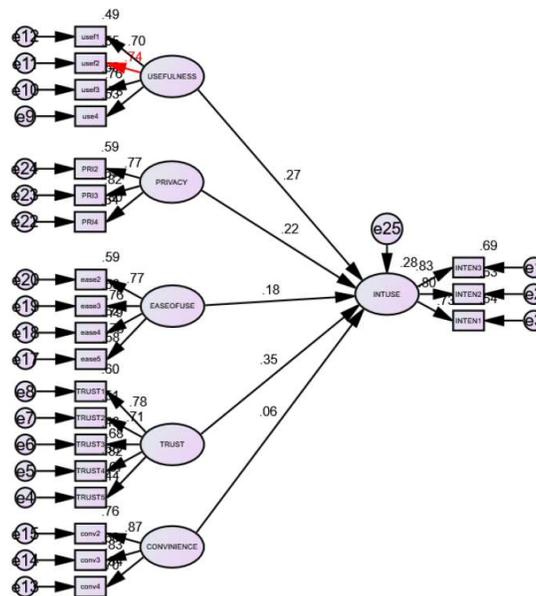


Fig. 3. AMOS Graph of Structural Model

The goodness-of-fit indices show that the structural model is adequately fit for data: p = 0.000, GFI = 0.837, AGFI = 0.797, CFI = 0.837, TLI = 0.887, IFI = 0.901, RMSEA = 0.072. Although the Chi-square is statistically significant, this outcome is not deemed unusual given the large sample size (Hair et al., 2006) . The value of R<sup>2</sup> for INTENTION is 0.28, and this value

satisfies the cut-off value of 0.10 (Hair et al, 2006). The coefficient parameter estimates are tested to determine the hypothesized direct effects of the variables.

**Table 3**  
Results of Hypothesized Direct Effects of the Variables in Structural Model

Path	Unstandardized Estimate		Standardized Estimate	c.r.	P-value	Hypothesis Result
	Estimate	S.E.	Beta			
Usefulness→ INTENTION	.335	.091	.27	3.884	0.000	Supported
Privacy → INTENTION	.223	.067	.22	3.331	0.000	Supported
Ease of use→ INTENTION	.220	.080	.18	2.768	0.006	Supported
Trust→ INTENTION	.479	.097	.35	4.951	0.000	Supported
Convenience→ INTENTION	.053	.059	.06	.889	.374	Not Supported

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

## 6. Discussion results

According to the above results of the study, four factors influence e-banking services in Jordan, which are Perceived Usefulness, Privacy, Ease of use, and trust. The results of this study are consistent with findings of Abu-Assi et al. (2014).

The results of this study also show that using electronic banking services by Jordanian customers is positively influenced by factors of ease of use, privacy, trust and perceived usefulness. These results are consistent with the findings of previous research (Abu-Assi et al., 2014; Featherman et al., 2010; Rawashdeh, 2015; Alwan et al., 2016). Whilst Chinese e-banking adoption is mainly influenced by perceived privacy (Eanizan, 2017; Abbad, 2013; Aliyu et al., 2014). Perceived usefulness and information on online banking were the major factors that influenced e-banking adoption.

Based on the results of this study, trust has the strongest contribution towards internet banking adoption compared with other variables. Bank offers enough security protection in order to prevent unauthorized intrusion so that the Internet users are comfortable with using internet banking for their personal business. However, some of them feel that internet banking is not as secured as traditional banking. They do not believe that bank would be able to recover their money if online bank account were hacked. Hence, bank should have inspection procedures of the system from time to time to avoid any breakdown that may happen.

## 7. Future work

According to previous results, the researcher recommend that Jordanian banks need to carry out more intensive marketing campaigns aimed at increasing awareness of clients about features, advantages and benefits of electronic banking services. The availability of confidentiality and security should be insured to customers who use electronic banking services to attract and convince more customers to use these services. These banks should focus their efforts on security issues and provide more safe and secured electronic services to customers. Jordanian banks need to know and handle the most important obstacles that limit the use of e-banking services by customers, as well as their current and future needs, through periodic studies on this subject. Jordanian banks must keep abreast of modern technological developments to increase the number of electronic services offered to customers. Also, Jordanian banks need to re-evaluate the user interfaces of electronic banking services to ensure easy use by customers. Customers' complaints about e-banking services should be taken into consideration by Jordanian banks, to improve the quality of these services. Also, Jordanian banks need to design more friendly user website with adequate and accurate information content to encourage customers using electronic services of these banks.

## 8. Conclusion

Internet Banking in Jordan is booming and thus banks are in urge need to understand their customers' attitudes and perceptions towards this technology. Internet banking can help Jordanian banks in gaining competitive advantage through reduced labor cost, improved customer service; enhance flexibility and better access to information, and removal to most manual or paper-work. Jordanian banks are in urge need to study the factors that affect using electronic banking services, so that these banks can better adapt their marketing strategies to encourage customers to increase their use of internet banking in the future.

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