

The Technology Acceptance Model Banking Services and Students' Satisfaction: Case of Taif University

Suleiman A. Al Khattab

Department of Business Administration
Al-Hussein Bin Talal University
Ma'an, Jordan

Anas Al Hadid*

Department of Marketing
Applied Science Private University
Amman, Jordan

Atallah B. Alnwaigah

Department of Business Administration
Taif University
Taif, Sudia Arabia

*Corresponding author

Abstract:

The aim of this paper is to shed the light on the technology banking services from the students' point of view. Technology Acceptance Model (TAM) has been used and discussed extensively in research that looks at the acceptance of new technology. This study has focused on the technology acceptance model (TAM) and seeks to understand the relationship between perception such as perceived usefulness (PU); perceived ease of use (PEOU); security and privacy; convenience and students' usage. It also has focused on the factors influencing technology acceptance and what is the effect of employing IT by banks on students satisfaction at Taif University.

In order to achieve the study objectives a questionnaire survey was developed and conducted. The empirical work involved the development of questionnaire which were used for data collection. A sample of 145 univesristy studnets took part in the reserch. The research hypotheses were tested using multiple regression and simple regression. The results of the study show a significant and positive relationship between electronic banking services and students' satsfaction. Additionally, the findings revealed that the most factor influncing technology acceptance is perceived usefulness (PU) and perceived ease of use (PEOU). While, the lowest factor influencing technology acceptance is security and privacy factor. In the light of the results, possible managerial implications are discussed and future research subjects are recommended.

Keywords: Technology Acceptance Model (TAM), Banking Services, Students' satisfaction, Taif University

Introduction:

It has been discussed that information technology (IT) provides organizations with a competitive advantage, by improving the quality of customer services and reducing the operational costs (Lindsay et al., 2011; Shroff et al., 2011; Camarero et al., 2012; Sharma et al., 2014; Carmen et al., 2014). During the last years the number of banks that recognized the benefits of technology banking services and adopted internet banking increased dramatically. While globally only one bank offered internet banking services in 1995 (Claessens et al., 2003). Recently, there is a large number of studies and papers have been conducted investigating the IT of banking services and the characteristics of banks that adopted IT banking (Al Khattab, 2005)..

IT is the 'lifeblood' of any business or organization. With technology, companies can give customers access to information about a wide range of products and services. New developments in IT such as the Internet, telecommunication, etc., have created unprecedented opportunities. IT, for example, enables firms to stay close to the customer. Mulligan and Gordon (2002) highlight the benefits of IT in improving customer service levels by providing more new forms of service delivery; while Leverick *et al.* (1997) point out that IT allows consumers to participate in product design and manufacturers to respond to customers' needs in a quick manner. There is no doubt that IT plays a key role in helping marketers keep their positions in the market. Zhu et al. (2004) have stated that the overall impact of technology on the banking sector is positive.

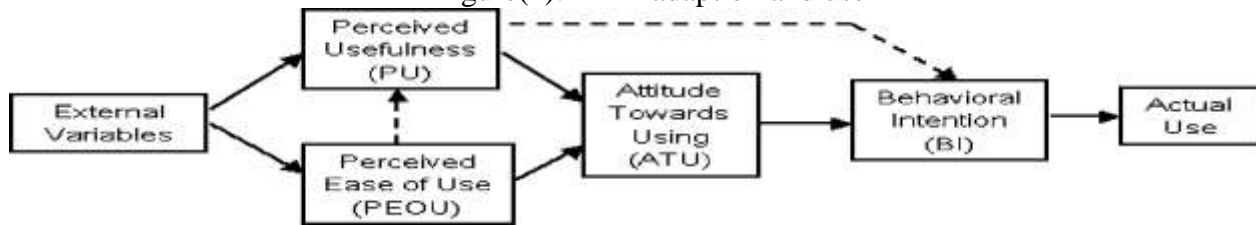
Lloyd-Walker and Cheung (1998) pointed out that in the banking industry, IT can assist the delivery of superior quality customer services by ensuring a fast, accurate and reliable service. However, there are many studies emphasising that financial institutions such as banks are distinguished from other businesses in dealing with the quantity of IT (Kim and Davidson, 2004; Lindsay et al., 2011; Carmen et al., 2014). These institutions must give more attention to IT in order to deal efficiently and effectively with enormous quantities of information. As already mentioned, banking and financial services are among the industries where IT has had the most significant impact. Kim and Davidson (2004) have stated that the banking industry environment has become IT-intensive. Therefore, this study showed how it is important to find out the reasons why people decide to use or not to use IT banking services. This knowledge will help the bankers to improve their services and build strong relationship with their customers (Carmen et al., 2014).

Literature review:

In general, technology acceptance has been defined as "the demonstrable willingness within a user group to employ information technology for the tasks it was designed to support" (Dillon and Morris, 1998: 5). While, the Technology Acceptance Model (TAM) has been known as an information systems theory that models how users come to accept and use a technology. TAM was introduced by Davis in 1985, which is the most influential extensions of the theory reasoned action by Ajzen and Fishbein (2000). The model suggests that when users are presented with a new technology, there are two main factors influence their decision about how and when they will use it namely: "perceived usefulness" (PU), and "perceived ease of use" (PEOU).

Generally speaking, TAM is a theory that explains how users come to accept and use a technology. The key goal of TAM is to provide a basis for tracing the impact of external factors on internal beliefs, attitudes, intentions and finally the actual use. The figure (1) shows that.

Figure(1): TAM adaption and use



Davis et al. (1989) have mentioned that customers tend to use or not use an application to the extent they believe it will help. They mentioned that the first variable is referred to as the perceived usefulness of technology; even if potential users believe that a given application is useful, they may, at the same time believe that the system is too hard to use and that the performance benefits of usage are outweighed by the effort of using the application. In addition usage is theorised to be influenced by the perceived ease of use. In this context, the importance of training and pre-education in the use such technologies is even more emphasised (Davis et al., 1989; Lindsay et al., 2011; Shroff et al., 2011; Camarero et al., 2012; Kuluiwat et al., 2014).

As noted above, among these dimensions influencing technology acceptance is the security and privacy factor. This dimension and its importance has been noted in many banking studies, in terms the acceptance of online banking (Sathye, 1999; Daniel, 1999; Polatoglu and Ekin, 2001; Howcroft et al., 2002; Patricio et al., 2003; Rotchanakitumnuai and Speece, 2003; Wang et al., 2003; Pikkarainen et al., 2004; Eriksson et al., 2005; Park, 2009; Lindsay et al., 2011; Shroff et al., 2011; Camarero et al., 2012). Sathye (1999) has pointed out that the privacy and security were found to be significant obstacles to adoption of online banking in Australia. Daniel (1999) predicted security to be one of the determinants of customer acceptance of Internet banking. Howcroft et al. (2002) argue that although customers' confidence in their bank was strong, their confidence in technology was weak. Wang et al. (2003) have proposed a new construct to the TAM, which is perceived credibility. They mentioned that the perceived credibility is more related to one's judgment on the privacy and security of issues of the Internet banking systems (i.e. customers' transactions security and the privacy of their personal information) has a significant influence on the intention to use Internet banking. Patricio et al. (2003) have pointed out that security concerns are still a major disadvantage of Internet banking. In the same vein, Rotchanakitumnuai and Speece (2003) have stated that in Internet banking, security is one of the most important future challenges, because customers face a higher risk in using the Web for financial interactions. It has been argued that the term security' refers to freedom from danger, risk or doubt during the service process (Santos, 2003; Lagrosen et al., 2004; Park, 2009). Santos (2003) noted that customers perceive a risk on the World Wide Web (WWW) concerning secure credit card transactions and the protection of private sensitive information.

According to the above discussion, the key factors have been selected to describe modified TAM include, perceived usefulness (PU); perceived ease of use (PEOU); convenience, and privacy and accuracy (Davis, 1985; Davis et al. 1989; Zhu et al., 2004; Pikkarainen et al., 2004; Eriksson et al., 2005; Curran and Meuter, 2005; Park, 2009; Shroff et al., 2011). At the same time, this study

excluded the perceived fun; perceived conservation of time and perceived playfulness, since this study is focusing on IT banking services as a whole, and not on a specific type of service that banks provide, such as internet banking.

In accordance with the study objectives and consistent with the reacted literature, the following hypotheses have been tested:

Hypothesis (1): perceived usefulness (PU) has a positive effect on the attitude towards usage

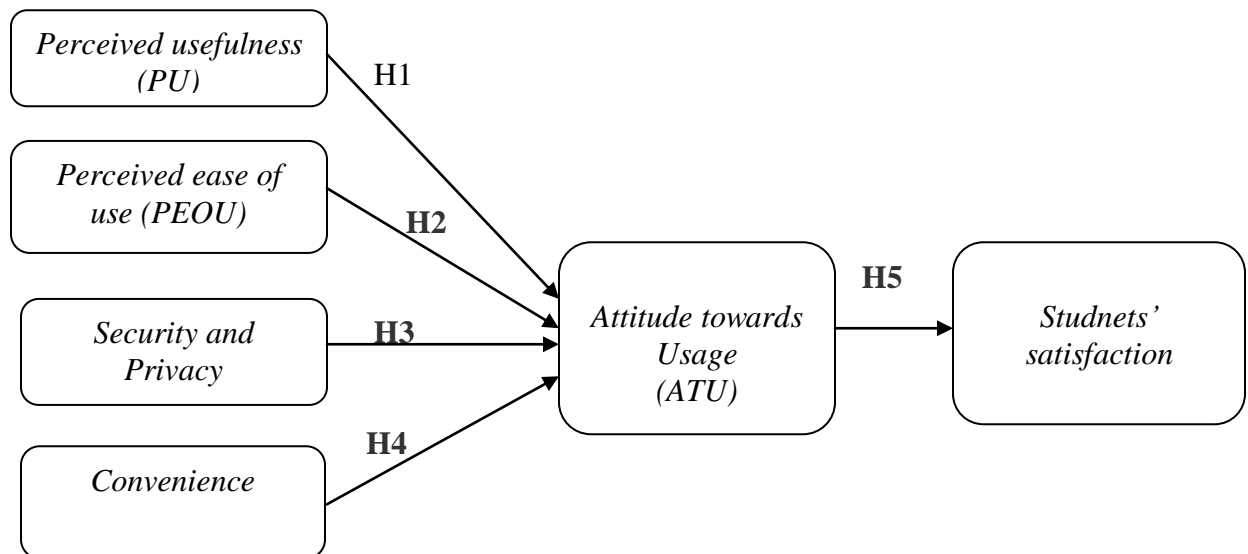
Hypothesis (2): perceived ease of use (PEOU) has a positive effect on the attitude towards usage

Hypothesis (3): perceived Security and Privacy has a positive effect on the attitude towards usage

Hypothesis (4): perceived Convenience has a positive effect on the attitude towards usage

Hypothesis (5): There is no reciprocal effect relation between student evaluations regarding attitude towards usage and students' satisfaction.

Figure 2: conceptual research model



Research Methodology

Research question:

This study has focused on the technology acceptance model (TAM) and seeks to understand the relationship between perception such as perceived usefulness (PU); perceived ease of use (PEOU); security and privacy; Convenience; and students' usage. Furthermore, it has focused on the factors influencing technology acceptance and what is the effect of employing IT by banks on students satisfaction.

Research instrument and data collection method:

The questionnaire has been used as medium to obtain the needed data. The questionnaire consists of three parts. Part one is intended to obtain background information of demographic factor. It comprises three questions covering the subjects of student's age, their gender, and their computer skills. Part two measures students' perception towards modified TAM variables (perceived usefulness (PU); perceived ease of use (PEOU); Security and Privacy; Convenience; and students' usage). Finally, part three measures the students' satisfaction.

Population and sample:

The sample in this study was bachelor degree students studying at Taif University. A total number of 250 questionnaires were distributed; however, 145 respondents completed and returned usable questionnaires. This number represents about 58 % response rate. Table 1 presents the demographic profile of the sample.

Table 1: Demographic attributes of respondents

Variable	Attribute	Frequency	Percentage (%)
Age	< 20	87	60
	21-25	33	23
	26-30	16	11
	31 and more	9	6
Gender	Male	122	84
	Female	23	16
Computer skills	Very good	102	70.3
	Good	34	23.4
	Moderate	9	6.3

Banks covered by this study totaled three main banks in Taif city namely: AlRajhi Bank, Alahli Bank and AlRiad Bank. As shown in table (2) AlRajhi Bank ranks top in terms of number of respondents (44%) this is due to it is ranked first in terms of the number of its branches, followed by Alahli Bank (30%), and AlRiad Bank ranks third (26%).

Table 2: The sample distribution according to the main bank that student deals with.

		Frequency	Percent	Valid Percent
Valid	<i>AlRajhi Bank</i>	64	44	44
	<i>Alahli Bank</i>	43	30	30
	<i>AlRiad Bank</i>	38	26	26
	<i>Total</i>	145	100.0	100.0

Data analysis and hypotheses testing:

Statistical Package for Social Science (SPSS) has been used to analysis data. The reliability of the scale was tested using Cronbach alpha. A coefficient alpha higher than 0.7 is considered to be good (Sekaran, 2003). The value of 0.87 was achieved indicating good internal consistency for the questioner-items. the Cronbach alpha values for all modifeid TAM dimensions and student satisfaction dimensions; this confirms the internal consistency of the instrument (Sekaran, 2003).

Table 3: Descriptive Analysis

TAM (modified dimensions) and students' satisfaction	Mean	SD
<i>Perceived usefulness (PU)</i>	3.77	0.7875
<i>Received ease of use(PEOU)</i>	3.70	0.6104
<i>Security and Privacy</i>	3.62	0.7890
<i>Convenience</i>	3.65	0.7543
Students Satisfaction	3.7	0.8102

From the table above, the results reported that the means of respondents' perceptions regarding the modified dimensions of TAM, ranging from 3.62 to 3.77. The lowest mean is indicated in the security and privacy dimension (3.62), whilst the highest mean relates to the perceived usefulness dimension (3.77). At the same time, the mean of the students' satisfaction towards the TAM modified was (3.7). Generally speaking, the results in Table 2 demonstrate that all the means are high, and hence, that the most factor influencing technology acceptance was perceived usefulness, followed by perceived ease of use. From the same vein, the lowest factor influencing technology acceptance was security and privacy.

Multiple regression to examine the TAM (modified dimensions) on attitude towards usage (ATU), and simple regression analysis was performed to examine the prediction of overall attitudes towards usage on students satisfaction Tables 4 and 5, show the multiple regression and simple regression results.

To establish which of the TAM (modified dimensions) predicted more variance in student satisfaction, multiple regression was performed, and Table 4 shows that perceived usefulness (PU), perceived ease of use(PEOU) and convenience, have more impact in this respect (the Beta values for the predicted dimensions respectively are ($\beta=0.258$, $\beta=0.202$, $\beta=0.188$, $P < 0.05$).

Table 4: Multiple Regression Analysis to Measure the Effect of each Variable of TAM on attitude towards usage

TAM (modified dimensions)	Beta	t- value	Sig*
<i>perceived usefulness (PU)</i>	.258	1.236	.000*
<i>perceived ease of use(PEOU)</i>	.202	3.436	.001*
<i>Security and Privacy</i>	.067	1.113	.859
<i>Convenience</i>	.188	3.170	.002*

(R2 = .337; F= .002) *Sig. level at $P \leq 0.05$

Table 5: Simple Regression Analysis to Measure the Effect of *attitude towards usage* Overall of student Satisfaction

R	R ²	Beta	F	Sig
.530	.270	.531	77.234	.000

From Table 5, it can be seen that the attitude towards usage impacts significantly on student satisfaction with their experience in banks ($R^2 = 0.270$, $p < 0.05$). In other words, the strength of the link between attitude towards usage and student satisfaction is ($R = 0.530$).

Results and Discussion

The banking sector is a highly information intensive activity that relies heavily on IT to improve the quality of services that are rendered to customers (Porter and Millar, 1985). Investing in IT is highly important for improving core competencies for firms in the banking industry. IT can be, and is being used to improve customer service. IT now assumes an important role in customer service, and it is a powerful tool or enabler in that arena. Furthermore, IT can assist the delivery of superior quality customer service by ensuring fast, accurate, reliable and convenient services to the customers (Kim and Davidson, 2004).

The purpose of this study was to focus on the technology acceptance model (TAM) and seeks to understand the relationship between perception such as perceived usefulness (PU); perceived ease of use (PEOU); security and privacy; Convenience; and students' usage. Furthermore, this study has focused on the factors influencing technology acceptance and what is the effect of employing IT by banks on students satisfaction.

Consistent with previous research (Davis,1989; Saade et al. 2007), perceived usefulness (PU) and perceived ease of use (PEOU) had significant effect on attitude towards usage (ATU). The results showed that PU has significant impact on student attitude towards usage. In other words, the findings that perceived usefulness is more influential in determining technology use confirms previous research such Igbaria et al. (1995) which has highlighted that perceived usefulness is more significant in explaining computer usage. Thus it is important for designers to develop a system that is perceived to be useful more than easy to use.

On the other hand, Sathye (1999) has pointed out that electronic banking services ‘must be easy to use’ to ensure customer take-up or acceptance. Training the customers or even showing them how to use Internet banking and other types of electronic channels improve banks’ service quality and gain their customers’ satisfaction (Singh, 2004).

Additionally, the results of this study are in line with previous studies, in terms of the importance of convenience factor. Zhu *et al.* (2004) have stated that convenience refers to the number of accessible service delivery points that are available when customers need them. Convenience aspects have had a crucial impact on customer service and will increase customer satisfaction (Kim and Davidson, 2004).

The results reveal that the factor security and privacy has been considered as the lowest mean among the others. That means the lowest factor influencing the adoption of electronic banking services is security and privacy factor. This result also goes in the line of the marketing literature that reveals that ‘security’ is identified as the biggest obstacle to adoption in many studies (Pikkarainen *et al.*, 2004; Lindsay *et al.*, 2011).

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