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Investigation of Factors Influencing the Intention to Adopt Mobile Banking Services in Jordan

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ABSTRACT

This study aimed at identifying the major variables that affect the Jordanian consumers' intention to adopt Mobile Banking (MB), through testing a modified model of diffusion of innovations developed by Rogers (1995). The population of the study consisted of all Jordanian banks' customers. A questionnaire consisting of 28 "likert" type items was distributed to a convenience sample of 500 respondents.

After being carefully examined, 413 returned questionnaires were valid for analysis, achieving a high response rate of 82.6%. A descriptive analysis was performed to extract relevant points. In addition, regression analysis was performed to test the stated hypotheses. Findings of the study indicate that some of the proposed variables of the model have a significant effect on Jordanian customers' intentions to adopt MB (trialability, complexity, compatibility and perceived risk).

Keywords: Rogers' Model, Perceived Financial Cost, Perceived Risk, Adoption, Mobile Banking.

1. INTRODUCTION

As a result of technological explosion which occurred during the 1980s in the technology field, most of the trading operations and services -specifically in the banking sector- offered effective technology services. Regarding to this fast evolution in telecommunication and technology in the world and the increasing demand on information, a new technological concepts were deployed such as internet banking, home banking and mobile banking (MB).

The banking and financial services sector in Jordan is reasonably advanced and foreign institutions are increasingly trying to enter the Jordanian market. The banking sector in Jordan has a good infrastructure to provide MB services, it consists of 23 commercial and investment banks, it is considered as one of the best financial sectors in the region and generates in total close to 5 per cent of the GDP (Library of Congress, 2006).

Mobile line services represented by four companies Fastlink (Zain) MobileCom (Orange) XPress and Umniah turned the sector from an oligopoly to a perfect competition environment (United nation, 2006). According to Jordanian government data, Jordan had more than 1.6 million mobile cellular telephone subscribers in 2004. The number of mobile subscribers increased to 4.62 million by 2006. Relative to the rest of the Middle East, where cell phone uses per 1,000 people was only 53 in 2001; Jordan is a regional leader in this aspect of telecommunications, averaging 167 per 1,000 people that year. Today, Jordan has a mobile penetration rate of about 77%.

In spite of all of the above, the use of MB services is still very low. Interviews with the electronic service managers in some Jordanian banks showed that the number of mobile service users was too limited. The percentage of mobile banking users in the Arab Bank, were (1.62%), while in the HSBC bank they were 1.5%[1], compared with users in developed countries such as Finland was about 31%.

Based on the foregoing, the major problem that the researchers try to explore is the following problematic question: - What are the main factors, which influence the intention to adopt (MB) services from Jordanian customers' perspective?

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1 Interview with electronic system managers in HSBC and Arab bank.

The theoretical background is discussed in the following section followed by description of the methodological approach and data collection procedures. Analysis of data is made by using aspects of SPSS 15.0 including descriptive analysis and regression analysis. Findings are then discussed in the light of the available studies and recommendations for strategy makers and future research are provided in the final section.

2. THEORETICAL BACKGROUND

The theoretical background of this study is drawn from the diffusion of innovations theory (Rogers, 1995), which has been widely established as a powerful tool to explain the adoption of a variety of mobile technologies including, mobile commerce (Teo and Pok, 2003), and Mobile Banking (Lee et al., 2003). The Diffusion of Innovation theory (DOI) (Rogers, 1995) suggests that characteristics of innovations help to persuade potential adopters to embrace or reject an innovation. According to the DOI theory of Rogers (1995), first presented in the 1960s, innovation adoption process follows an S-shaped curve, where individual adoption decisions are based on the assessment of five general characteristics of an innovation and adopters' personal characteristics. The general characteristics (factors) of an innovation are relative advantage, complexity, compatibility, trialability, and observability. Rogers (1995) identified these five "main" characteristics of innovations and mentioned that all of these factors are multidimensional. For example, compatibility refers to the degree to which an innovation is compatible with the adopter's values, behavior, and use of prior innovations. Thus, each factor must be measured through several dimensions.

These five characteristics should not be considered as creating an exhaustive list, but ones which have commonly been found in a wide range of studies (Rogers, 1995). Let us, with this point in mind, appraise the five main characteristics of innovations: *Complexity* is the extent to which customers perceive a new innovation as easy to understand and use (Rogers, 1995). *Relative advantage* is the degree to which customers perceive a new product or service as different from, also better as its substitutes (Snel, 2000). *Compatibility* is the extent to which a new product or service is consistent with consumers' needs, beliefs, values, experiences, and habits (Gatignon and Robertson, 1989). *Observability* is the extent to which an innovation is visible and communicable to consumers (Roger, 1995). *Trialability* is the degrees to which an innovation may be experimented with on limited biases (Roger, 1995).

The researchers further consider other relevant factors, addressed in previous studies, related to the technology adoption area such as perceived risk and the financial cost. Each of these factors will be stated in a hypothesis to examine the potential adopters' beliefs in the adoption of MB services: *Perceived financial cost* is defined as the extent to which a person believes that using MB will cost money (Lauran and Lin, 2004). *Perceived risk* refers to the security and worthiness of using services (Mattila, 2003).

There are a number of studies concerning the intention to adopt mobile banking. Luarn and Lin (2005) in their study about the behavioral intention to use Mobile Banking identified the factors determining users' acceptance of MB. Based on literature relating to the TPB and the TAM that extends the applicability of the TAM in a mobile bank context by adding one trust based construct (perceived credibility) and two resource based constructs (perceived self-efficacy and perceived financial cost) to the model. Data collected from 180 users in Taiwan where tested against TAM using the structural equation model, the results strongly supported the extended TAM in predicting user's intention to adopt using.

In addition, Mattila (2003) in her investigation of the factors affecting the adoption of Mobile banking services aimed at forming a model describing customer behavior patterns. The study evaluated the applicability of Roger's (1995) model in Finland. Also, it analyzed factors which affect the adoption of MB services. Her results provide evidence that customers ask for mobile services which provide additional value and ease of use. Furthermore, insufficient service guidance has been identified as a central inhibiting factor for the adoption.

Suoranta (2003) examined an innovation in the financial services industry, namely mobile banking services. She seeks to determine and explain the factors affecting the adoption of mobile banking services. The results indicated that certain attributes of MB innovation drive usage or explain consumer behavior, in particular relative advantage, compatibility, communication and trialability. By contrast, the investigation of complexity and risk of using MB yielded no support as being barriers to adoption. The technology perceptions and certain demographical variables of the customers have a significant impact on the adoption behavior.

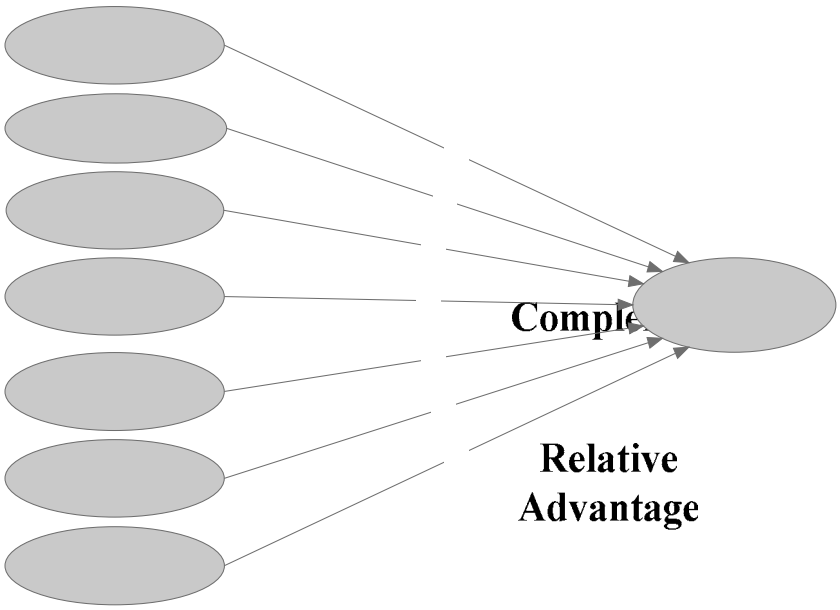

Figure 1: Study Model

Another study conducted by Laforet and Li (2005) aimed to investigate the status of online/mobile banking market in China. They offer an insight into online/mobile banking in China, which has not previously been investigated. Data were collected from six major Chinese cities .The results showed that Chinese online and mobile bank users were predominantly males, not necessarily young and highly educated, in contrast with the electronic bank users in the West. The issue of security was found to be the most important factor that motivated Chinese costumers' adoption of online banking. Main barriers to online banking were the perception of risks, computer and technological skills and Chinese traditional cash-carry banking culture.

Yang (2005) explored how Singaporean people were influenced to adopt the M-commerce. He employed the TAM to examine factors affecting Singaporeans' attitudes toward this emerging mobile technology and applications. He used a quantitative approach to survey 866 Singaporean students examining their decision making process to adopt M-commerce. He found that customer innovativeness; past adoption behavior, technology cluster; age and gender affect their adoption behavior. Results further reveal that mail respondents tend to perceive M-commerce favorably. Results also support the applicability of TAM and its extension to examine M-commerce adoption by Singapore customer.

Why Using Rogers Model?

The main reasons for using Rogers's model in this paper were: First, the scholarly work of Rogers (1995) has encouraged research studies in the area of the diffusion of innovations. Some 3,810 diffusion studies had been addressed by Rogers (1995) when preparing the fourth edition of his text. Second, diffusion of Innovation (DOI) has a much broader scope than the other theories, since it includes as an innovation, any idea, practice, technique or object that is perceived as new by a unit of adoption (Wagner, 1995). Third, social-psychology models are general theories based on the notion that concrete behavior impacting factors must be separately defined for each behavioral choice situation (Rogers, 1995; Moore and Benbasat, 1991). For this reason, the researchers use the DOI theory. Fourth, However, TAM (Technology Acceptance Model) and DOI are extremely similar in some constructs and supplement one another, research has suggested that. Relative advantage is similar to perceived usefulness, whereas complexity is similar to perceived ease of use.

3. RESEARCH MODEL AND HYPOTHESES

The model (Figure 1) is based on the work of Rogers (1995) and comprises five constructs of innovational attributes, augmented with a perceived risk factor and perceived financial cost. The seven constructs (relative advantage, complexity, compatibility, trialability, observability, perceived risk and perceived financial cost) are the attributes which define the perceived characteristics of an innovation in this thesis. In the

present work, the domain under study is the adoption of MB services. The dimensions highlighted in the model present the constructs that form the main research interests in this paper:

Research Hypotheses:

H1: Complexity has a significant effect on the intention to adopt MB.

H2: Relative advantage has a significant effect on the intention to adopt MB.

H3: Compatibility has a significant effect on the intention to adopt MB.

H4: Trialability has a significant effect on the intention to adopt MB.

H5: Observability has a significant effect on the intention to adopt MB.

H6: Perceived financial cost has a significant effect on the intention to adopt MB.

H7: Perceived risk has a significant effect on the intention to adopt MB.

4. RESEARCH METHODOLOGY

A survey approach employed in this study as it will allow the researcher to collect a large amount of information used to test the hypotheses (Burns and Bush, 1995; Hair et al., 2000). In addition, this approach is less expensive than many others (Kinnear and Taylor, 1996).

Table 1. Operational Definitions

Variables	Operational definition	Sources	Items
Complexity	Mobile phone is an unempirical device for banking.	Moore and Bansabt (1991) Tan and Teo (2000).	1-6
Relative advantage	Conducting MB is fast and effortless	Tan and Teo (2000) Snel (2000).	7-10
Compatibility	I do not like changes from the usual way I do things.	Moore and Bansabt (1991) Tan and Teo (2000)	11-14
Trialability	I like to have the opportunity to try MB services.	Moore and Bansabt (1991) (Roger, 1995).	15-17
Observability	I have heard about MB from banks personal.	Lee et al. (2003) Roger (1995).	18-21
Perceived risk	Using mobile phone in banking is secure.	Mattila (2003).	22-23
Financial Cost	Cost of the services and any other financial barriers over time.	(Lauran and Lin, 2005).	24-25
Intention to adopt MB	Increasing the use in the future, recommend a friend.	(Davis, 1989)	26-28

Table 2. Cronbach's Alpha for the Scales

Independent variables	No. of Cases	No. of items	Cronbach's alpha
Complexity	413	6	0.84
Relative advantage	413	4	0.76
Compatibility	413	4	0.80
Observability	413	4	0.75
Trialability	413	3	0.70
Perceived risk	413	2	0.64
Financial Cost	413	2	0.84
Intention to adopt MB	413	3	0.63

Data Collection Method and Plan

In this study, survey research involved the collection of quantitative data from a sample of elements drawn from a well-defined population through the use of a questionnaire was used (Zikmund, 2003). This research method will be used to measure respondents' characteristics and their behavioral intentions to adopt MB. Selected respondents were asked questions and their answers were collected in a structured, precise manner to test the research hypothesis.

The questionnaire consisted of tow major sections incorporating demographics (gender, age, income level,

service provider, education level and usage period), and factors affecting the adoption of MB (relative advantages, complexity, compatibility, observability, trialability, perceived risk, perceived financial cost), and behavioral intentions to adopt MB. The scales used to measure these factors were adapted from previous studies related to the Rogers' model (Rogers, 1995: Mattila, 2003; Lauran and Lin, 2004; Snel, 2000; Gatignon and Robertson, 1989; Lee and Lee 2000).

Table 3. Respondents' Profile

		Frequencies	Percentage
Gender	Male	261	63.2
	Female	152	36.8
Mobile phone usage	Less than 3 years	127	30.8
	3-6 years	176	42.6
	More than 6 years	110	26.6
Age	18-29	220	53.3
	30-39	117	28.3
	40-49	43	10.4
	50-59	30	7.3
	60 years and more	3	0.7
Income level	Less than 200 JDs	136	32.9
	200-400 JDs	179	43.3
	401-600 JDs	46	11.1
	600 JDs or more	52	12.6
Education Level	High School or less	49	11.9
	B.A	262	63.4
	Master	81	19.6
	P.H.D	49	5.1

Operational Definitions

Before a scale of measurement is developed, the researcher must determine exactly what it is to be measured (Hair et al., 2000). Concepts or variables in this study were not directly observable, so they have to be operationalized in a way that enables the researchers to measure them. Operational definitions of variables measured in this study were borrowed and were slightly modified from previous studies. These definitions are presented in Table (1).

Sampling Procedures

The population in this study comprised all customers of the Jordanian banks. Due to time and cost constraints, a convenience sample of Jordanian banks customers was selected. Then 500 questionnaires were distributed. The returned questionnaires were carefully examined for completeness. The total number of usable responses resulting from this process was 413 (response rate was 82.6%). As this research will use regression estimations to test the proposed hypotheses, a sample size of 413 was deemed to be appropriate for this study that measured 7 independent variables because this sample size meets the recommendation for the use of multiple regression analysis, requiring the ratio of observations of at least 15 to 20 for each independent variable (Hair et al., 1998). This rule was followed in order to minimize the adverse effect of a small sample size on the generalizability of the research results when performing a multiple regression analysis (Hair et al., 1998).

Instrument Reliability

Reliability scores are expressed numerically as a coefficient. Nunnally (1978) has suggested that a minimum alpha of 0.60 sufficed for early stages of research, and the reliability of the scales was established by utilizing Cronbach's alpha (table 2). Considering the present study as a whole, Cronbach's alpha varied from 0.63 to 0.84, which is considered acceptable for this type of research.

Profile of Respondents:

The results, shown in table 3, indicate that more than (60%) of the respondents were males. The majority of respondents (63.4%) were from B.A degree; this may be due to the number of universities and student in Jordan. About 42.6% of the respondents used the phone between 3-6 years that result from the appearance of two service provider companies (Umniah and Xpress) during that period. According to income level 43.3% of respondents (179 respondents) have income between 200 and 400.

Table 4. Tolerance and Variance Inflation Factor-VIF

Variables	Tolerance	VIF
Complexity	0.516	1.936
Relative Advantage	0.465	2.149
Compatibility	0.455	2.197
Traiability	0.526	1.902
Observability	0.703	1.423
Perceived Financial Cost	0.596	1.679
Perceived Risk	0.511	1.958

Analysis of Data

As a large number of variables (8 independent and

dependent variables) were be measured in this research, and as all of the proposed relationships (hypotheses) were not complicated and they were tested one at a time, it was deemed appropriate to use multiple regression estimations for testing the proposed hypotheses (Cheung, 2001; Hair et al., 1998). To test multiple regression models, it is necessary to assess whether the collected data violate some key assumptions of regression models because any assumption violations can result in distorted and biased research results (Hair et al., 1998). These assumptions include Multicollinearity, Normality and Auto-correlation:

Multicollinearity can be controlled by two ways: tolerance values and values of variance inflation factor- VIF (Hair et al., 1998). High degrees of multicollinearity can result in both regression coefficients being inaccurately estimated, and difficulties in separating the influence of the individual variables on the dependent variables (Hair et al., 1998). Any variables with a tolerance value below 0.10 or with a value above 10.0 of VIF would have a correlation of more than 0.90 with other variables, indicative of the multicollinearity problem (Hair et al., 1998). Results, table 4, shows that tolerance for all independent variables is above 0.50 and variance inflation factor- VIF for the independent variables is less than the limited valued 10.0, so as a result we can say there is no multicollinearity between the independent variables.

Normality measured through skewness coefficients. In the current study, skewness scores lie between (+1 and -1), as showed in table 5, which indicate that the data was approximately normally distributed (Hair et al., 1998).

Table 5. Skewness Coefficients

Variable	Skewness
Complexity	0.964
Relative advantage	0.345
Compatibility	0.862
Triability	0.983
Observability	0.166
Perceived Financial cost	0.361
Perceived Risk	0.531
Intention to adopt	0.883

Auto- correlation measured through Durbin-Watson test statistic, this test need to be approximately 2. As showed in table 6, that Durbin Watson is 1.897, so the problem of auto-correlation does not exist. Which it found to be consistent with other studies (Palvi et al., 1994).

Fitness of the model: the linear regression analysis of the original model reveals that the R-square of the model is 0.598. This means the model explains 59.8% of the variance in the dependent variable (table 6). The model is statistically significant (*P-value = 0.000*). This means that the fitness of the model in explaining the adoption process was good.

After the researchers assure that the assumptions of regression models were met, the following section deal with hypotheses testing, The following hypotheses were tested using Multiple Regression analysis, to know if there is an impact of independent variables on the dependent variable, according to the decision rule: accept null hypothesis (H0) if the significance level (α) of the variable is greater than 0.05, and reject (H0) if the significance (α) level equals or less than 0.05 (Berenson and Levine, 1999). As a result for this decision rule, the researchers have tested statistically the proposed hypothesis.

Hypotheses Testing

Rogers' model variables and the additional factors (complexity, relative advantage, compatibility, trialability, observability, perceived financial cost and perceived risk) will have a significant direct effect on the intention to adopt MB.

From the results showed in table 7, Complexity has significant direct effect on Customer's willingness to adopt MB in their transaction with banks (t = 5.766; sig = 0.000). Relative Advantage has no significant direct effect on Customer's intention to adopt MB in their transaction with banks (t = 0.055; sig = 0.956). Compatibility has significant direct effects on customer's intention to adopt MB in their transaction with banks (t = 2.529; sig = 0.012). Trialability has a significant direct effect (t = 2.275; sig = 0.023) on the Customer's intention to adopt MB. Furthermore, the results suggest that Observability has a non significant direct effect on Customer's intention to adopt MB in their transaction with banks (t = -0.623; sig = 0.531). In addition, the results found that financial cost has a non significant direct effect on Customer's intention to adopt MB in their transaction with banks (t = -0.099; sig = 0.921). Furthermore, the results found that Perceived risk has significant direct effect on Customer's intention to adopt MB in their transaction with banks (t = 10.975; sig = 0.000).

5. DISCUSSION AND CONCLUSIONS

Findings of the study indicate that Jordanian customers appear to make their MB adoption decision based on its complexity, compatibility, trailability and perceived risk (Figure 2). These results are some how consistent to the findings of previous studies. In light of the study objectives and the test of the research hypothesis, the researchers have reached the following as overall conclusions:

It was found that there is a significant statistical impact of complexity on Jordanian customer willingness to adopt MB. This finding is similar with what (Souranta, 2003; Tan and Teo, 2000) have found, which have indicated that the more complex an innovation is to use, and the greater the skills and effort needed to adopt it; the less likely it is that the innovation will be adopted. Other previous literatures have consistently shown that complexity has a significant and negative influence on the adoption electronic banking, (Polatoglu and Ekin, 2001; Black et al., 2001 and Hewer and Howcroft, 1999).

On the other hand, the fact that H2, Relative advantage, was not supported might be considered surprising in light of previous findings and generally held opinion. Indeed, previous literature has suggested that this construct could be of considerable significance for banking service adoption, and particularly in relation to the new electronic environment (Black et al., 2001 and Tan and Teo, 2000); in other researches, Slyke et al. (2002) used DOI to investigate the factors that may influence intentions to use groupware applications; he found that relative advantage was significantly related to intention. Yet, the non-significant effect of relative advantage on the adoption of MB services appears to indicate that users don't know about MB services because it's new technique, so they will not know the advantages of using them.

Table 6. Fitness of the Model for Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.773	.598	.591	.58221	1.897	85.964	.000

a. Predictors: (Constant), risk, observability, triability, financial cost, complexity, relative advantage, compatibility.
b. Dependent Variable: adoption of MB

Table 7. Model Testing [a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	.012	.118		.104	.917
Complexity	.310	.054	.253	5.766	.000
Relative advantage	.003	.051	.003	.055	.956
Compatibility	.137	.054	.118	2.529	.012
Trailability	.114	.050	.099	2.257	.023
Observability	-.023	.037	-.024	-.628	.531
Perceived cost	-.004	.037	-.004	-.099	.921
Perceived risk	.472	.043	.484	10.973	.000

a: Dependent Variable: Intention to adopt MB

Table 8. Results of Hypotheses Testing

Hypothesis	Supported / not supported
H1: Complexity has a significant statistical effect on the intention to adopt MB.	supported
H2: Relative advantage has a significant statistical effect on the intention to adopt MB.	not supported
H3: Compatibility has a significant statistical effect on the intention to adopt MB.	supported
H4: Trialability has a significant statistical effect on the intention to adopt MB.	supported
H5: Observability has a statistical significant effect on the intention to adopt MB.	not supported
H6: Perceived financial cost has a significant statistical effect on the intention to adopt MB.	not supported
H7: Perceived risk has a significant statistical effect on the intention to adopt MB.	supported

Hypothesis H3, concerning Compatibility, was supported, similar to previous findings (Hsu, Lu, and Hsu, 2006; Black et al., 2001). According to the description of 'compatibility', compatibility seems to measure the values or beliefs of consumers, the ideas they have adopted in the past, and the ability of an innovation to meet their needs, when Jordanian customers recognize that they have a need for MB, and when they understand its consequences, a faster rate of adoption usually occurs. So, customers who indicated they were comfortable with the mobile were more positive about MB. Yet, the significant effect of compatibility on the adoption of MB services appears to indicate that seeing an advantage in using a new technology would lead to an increase in the likelihood of adopting it, and where the customer feels comfortable or familiar with the innovation, will have a greater likelihood of adoption than an innovation which lacks these attributes.

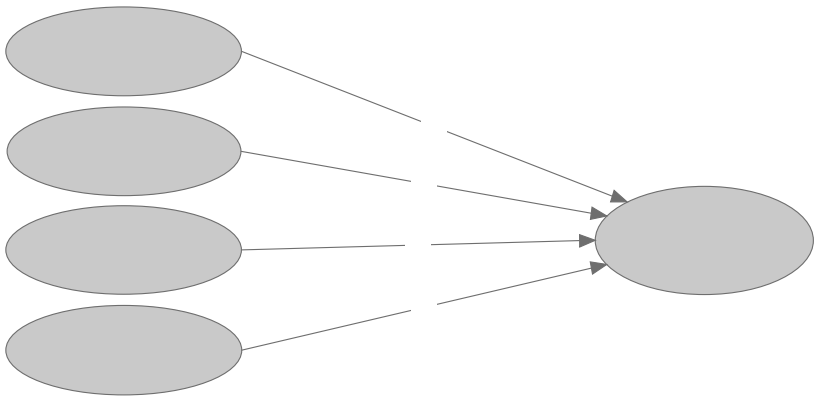

Figure 2: Resulted Model

Hypothesis 4, concerning trialability was supported. As argued by Roger's (1995), it seems to be the case that potential adopters who are able to experiment with an innovation are more likely to adopt the innovation. Consequently, if consumers are given the opportunity to try the innovation certain fears of unknown and inability to use can be reduced. In this study, it emerged that those respondents who had already tried MB services were more likely to be current users of the services, in other words, customers are unable to try out MB services beforehand.

Hypothesis 5, concerning observability, was not supported, according to the characteristic of observability that has been defined by Black et al. (2001) as the extent to which an innovation is visible to other members in a social system, they conclude that "observability does not appear to be a contributor to the adoption of Internet banking". This research found the same, the reason behind the non significant affect may be that it is not possible for others to view the results of customers who use MB unless, as adopters, they are prepared to show the results of their financial dealings to third parties. This is most unlikely to happen.

Hypothesis 6, concerning perceived financial cost was not supported; that the non-significant effect of perceived financial cost on the willingness to adopt MB services appears to indicate that users are not in fact so seriously concerned about the cost because banks give these

service with a few amount of money or for free. Beside that, the mobile service provider companies give these services with little cost.

Hypothesis 7, concerning perceived risk was supported, this finding appeared to support what a number of studies have found that trust and perceived risks have a significant positive influence on adoption (Black et al., 2001; Polatoglu and Ekin, 2001; Hewer and Howcroft, 1999; Suganthi et al., 2001). This is also consistent with Lockett and Littler (1997) which found that the most important factor in encouraging the usage of service is security and trustworthiness. This can be considered as an indication of the importance of online privacy where customer's data and information should be protected against access by unauthorized users.

Research Recommendations

The results show that there is an effect of complexity on the customers' intention to adopt MB services which make the service provider companies to think more strategically about making these services easiest to understand and to use. Banks must give the customers more training programs on MB services, and give the customers' who use this MB services more facilities and advantages. Customers also need to develop themselves by watching and reading new programs about technologies related to banking services.

The results show the importance and the advantage of including the compatibility with lifestyle as a variable when designing a mobile banking service, since it is a factor that is important for customers when they consider using the mobile banking services. Thus, the marketing managers have to emphasize how the service fits with bank customers' lifestyle; mainly with their way of living, communicating and doing things.

The results show the importance of trialability on the customers' intention to adopt MB services. Banks and mobile phone companies would benefit most from this study through the knowledge that Jordanian customers are strongly influenced by their exposure to mobile products and services and their applied products and services in the media. This would mean that promotion of mobile banking would be justified as enticing Jordanian customers to use mobile banking services. Furthermore, the development of an advertising campaign to induce media exposure would also be more persuasive if it were able to draw a link with the perceived outcomes of a new product or service.

Perceived risk was found to have an influence on the customers' intentions to adopt mobile banking services, conclusively, it can be said that marketing managers must pay attention to and be aware of the information intensity when developing a new technology services as it plays an important role for customers' intentions to adopt the MB service. Banks should increase their ability to control and manage the various risks inherent from mobile-transaction activity. In addition banks should implement more security to minimize risk and increase customer authentication such as personal identification number and audit trial for transaction. Privacy of customer's information should also be protected. Access to customer's files should give to authorized people only which may encourage customer's intentions to be part of the adoption process.

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Appendix A: survey questions

Part 1:

Gender: Female □ Male

Cellular Usage: less than 3 years□ 3-6 years□ more than 6 years□

Age: 18-25 □ 30-39□ 40-49□ 50-59□ more than 60□

Income (monthly): less than 200□ 200-400□ 401-600□ more than 600□

Service provider: Fastlink□ Mobilecom□ Umniah□ XPress□

Part 2:

Complexity

Using a MB will be excitement experience

It will be easy for me to perform tasks using MB

Using MB requires a little of mental effort

MB is an easy way to conduct banking transaction

Using MB will reduce the number of things I have to do

Using MB will make my life easier

Relative advantage

My money is as safe with MB

Mistakes are more likely to disappear with MB

Using MB is assign of modernity

MB gives me greater control over my finance

Compatibility

Using MB is compatible with any task I perform

MB is compatible with my life style

Using MB to conduct banking transaction fit into my working style

It doesn't bother me to use MB for banking transaction when I could talk with a person

Trialability

I want to be able to try MB for specified period

I want to be able to sue MB on trail biases to see what it can do

I have had the opportunities to try various services

Observability

I have seen people use MB in public places

I know someone who use MB

I think being seen using MB is good for my image

MB is used by many

Perceived risk

I am confident over the security aspects of MB in Jordan

It wouldn't cost a lot to use MB

Financial Cost

There are no financial barriers to my using MB

I intend to increase my use of MB in the future

Intention to adopt MB

I will recommend my friend to use MB

I will use MB services if had the opportunity

I will use MB services if a friend tells me about it

العوامل المؤثرة على النية لتبني الخدمات المصرفية من خلال الهاتف النقال دراسة حالة في الأردن من وجهة نظر العملاء

*محمد سليمان عواد ومحمد ياسين غادي**

ملخـص

هدفت هذه الدراسة إلى تحديد المتغيرات الرئيسة التي تؤثر في نية المستهلك الأردني في تبني خدمة الهاتف النقال لإنجاز المعاملات المالية مع البنوك، وذلك من خلال اختبار نموذج معدل لنموذج (انتشار الاختراعات) المطور من قبل روجرز (1995). ولاختبار فرضيات الدراسة، قام الباحثان بإجراء بحث ميداني على مجتمع الدراسة المكون من جميع المستهلكين المالكين لحسابات في البنوك الأردنية. تم اختيار عينة ملائمة من مجتمع الدراسة عددها 500 مستجيب، وقام الباحثان بتوزيع استبانة مكونة من 28 فقرة، ومعدة باستخدام مقياس ليكرت، لجمع البيانات الأولية.

بعد فحص الاستبانات المستردة، حصل الباحثان على 413 استبانه صالحة للتحليل بنسبة استجابة عالية مقدارها 82.6%. لتحليل البيانات الأولية، قام الباحثان باستخدام عدد من الأدوات الإحصائية. تم استخدام الإحصاء الوصفي وذلك لوصف الخصائص الديموغرافية لأفراد العينة، كما تم استخدام تحليل الانحدار المتعدد من أجل اختبار الفرضيات . وقد أظهرت نتائج الدراسة وجود بعض العوامل التي أثرت بوضوح في عملية تبني خدمة الهاتف النقال لإنجاز المعاملات المالية مع البنوك (التجريب، درجة التعقيد، درجة الملاءمة والمخاطر المدركة).

الكلمات الدالة: نموذج روجرز، التكاليف المدركة، المخاطرة المدركة، التبني، بنوك الهاتف النقال.

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