
AN EMPIRICAL SURVEY ON THE PROSPECTS OF MOBILE MONEY IN MOROCCO

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Abstract:

The main purpose of the study is to examine the intention of the Moroccan customers to adopt mobile money, as well as the factors that may lead to it. The study employs descriptive statistics, one sample t-test and multiple regression. 400 questionnaires were randomly distributed to the Moroccan banks' customers. The findings indicate that the Moroccan customers have the willingness to adopt mobile money. Furthermore, the results show that complexity, relative advantage, compatibility, and trialability are good predictors of the intention to adopt mobile money in Morocco.

Key words: *Morocco, Mobile money, Multiple regression*

1. Introduction

Mobile money (M-money thereafter) is becoming increasingly popular across the globe. This practice can simply be defined as the provision of financial services through a mobile device. This broad definition encompasses a range of services, including payments, finance, and banking. In practice, a variety of means can be used such as sending text messages to transfer value or accessing bank account details via the mobile internet. Special "contactless" technologies are available that allow phones to transfer money to contactless cash registers (Donovan, 2012). In fact, M-money has several advantages, for the financial and banking institutions themselves, as well as for the customers.

With regards to the financial and banking institutions, M-money contributes in enhancing their image in the market. Furthermore, it also helps the industry to increase its market penetration, based on the fact that M-money is accessible worldwide. In

addition, the use of M-money gives an opportunity for the financial and banking institutions to advertise the new financial products, to the increasing number of users.

Regarding the individual customers, M-money enhances their convenience and time saving, given that they can make their transactions without the need of physical interaction with the bank. Moreover, it allows them to reduce their costs to access and use banking services. Additionally, it provides them with a better administration of funds.

It is worth noting that the mobile phone usage has witnessed an unprecedented growth across the globe. The level of sophistication of the mobile phones has also been enhanced, starting from ordinary mobile phones in the 90s, passing through multimedia mobiles, to reach the current multi-applications mobiles since 2010 onwards. According to Exton (2011), the diffusion rate has increased from 27% in 2006, to 45% in 2008, in the Middle East and Africa which is where Morocco is located. While in Europe this rate has increased from 99% in 2006 to 101% in 2008.

In Morocco and most of the North African countries, the access to mobile services exceeds that of the access to banking services. Particularly, the mobile services access is about 70%, while that of the banking services is about 40% (International Telecommunication Union, IFC). These gaps have subsequently created new opportunities for the launching and expansion of the M-money in Morocco.

The aim of this paper is therefore to examine the main factors that determine the intention to adopt M-money in Morocco. This will provide hindsight to the decision and policy makers about the areas that should be emphasised to develop the online banking services in Morocco.

The study uses multiple regression analysis to predict the intention to use M-money among the Moroccan banking customers. Specifically, the study attempts to answer the following question: What are the factors that influence the intention of the Moroccan customers to adopt M-money? Based on this question, a number of hypotheses will be developed in the following sections.

Following this brief introduction, the next section will present an overview on the previous studies on M-money. The methodology employed in this study, the profile analysis as well as the results and discussion will then be presented sequentially.

2. Literature review

M-banking is an emerging facet of electronic banking that, unlike traditional phone banking services, which offer very limited functions, is a potential platform for automated banking and other financial services. It is a wireless service delivery channel that offers additional value for customers by providing “anytime, anywhere” access to banking services (Lee and Chung, 2009).

Several studies have examined the factors that lead to the intention to adopt M-money in different countries. These studies have used different models including theory of reasoned action (TRA) (Ajzen and Fishbein, 1980), theory of planned behaviour (TPB) (Ajzen, 1991), decomposed theory of planned behaviour (DTPB)

(Taylor and Todd, 1995), technology acceptance model (TAM) (Davies, 1989), innovations diffusion theory (IDT) (Rogers, 1983), etc. Nevertheless, the theory that is mostly used and most suitable in the area of M-money adoption is IDT by Rogers (1983). IDT stipulates that the adoption of innovations depends on a set of factors including relative advantage, compatibility, complexity, trialability and observability.

Relative advantage is defined as the extent to which a person views an innovation as offering an advantage over the existing methods of performing the same task. It is suggested in the theory that relative advantage has a positive influence on the behavioural intention. In this regards, Laukkanen and Kiviniemi (2010) found that relative advantage has a significant positive influence on the intention to adopt M-money in Finland. Similarly, Riquelme and Rios (2010), Lin (2010), Puschel, Mazzon and Hernandez (2010) as well as Cruz, Neto, Gallego and Laukkanen (2010) found similar results in the case of Singapore, Taiwan and Brazil, respectively. Rogers (1983) discovered that adopters perceived the relative advantage in terms of the economic benefits and the costs resulting from the adoption of an innovation and improvements that are afforded to their social status.

Furthermore, compatibility is defined as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters. Hence, it is a measure of the values and beliefs of the customers, the ideas they have adopted in the past as well as the ability of an innovation to meet their needs (Rogers, 1983). It is suggested that compatibility has a positive influence on the behavioural intention. In this regards, Laukkanen and Kiviniemi (2010) found that compatibility has a positive influence on the intention to adopt M-money in Finland, this was supported by the findings of Lin (2010), Lewis, Palmer and Moll (2010), and Puschel, Mazzon and Hernandez (2010) who have found similar results in Taiwan, Germany and Brazil, respectively. Nevertheless, Cruz, Neto, Gallego and Laukkanen (2010) found that compatibility does not have any significant influence on the intention to adopt M-money in the case of Brazil.

On the other hand, complexity is defined by Rogers (1983) as the degree to which an innovation is perceived as difficult to understand and use. Complexity is being measured based on the perception about the purpose of a given innovation, its intended use and the degree of easiness or difficulty associated with it. It is suggested that complexity has a negative influence on the behavioural intention, in other words, customers will be reluctant to adopt an innovation that is difficult to understand and use. In support of this, Laukkanen and Kiviniemi (2010) found that complexity has a negative influence on the intention to adopt M-money in Finland. Similar results were found by Riquelme and Rios (2010) and Lin (2010) in the case of Singapore and Taiwan respectively, as well as Gu, Lee and Suh (2009) and Lee, Park, Chung and Blakeny (2011) both in the case of South Korea. Nevertheless, Lewis, Palmer and Moll (2010) found that complexity does not have any influence on the intention to adopt M-money in Germany.

In addition, trialability is the degree to which an innovation can be experimented on a limited basis, before the final use (Rogers, 2003). It is suggested

that trialability has a positive influence on the behavioural intention. According to Rogers (2003), an innovation that is trialable can dispel uncertainty about an idea, thus for those who are apprehensive about the service, it may give them the necessary confidence to use it. Nevertheless, Puschel, Mazzon and Hernandez (2010) found that trialability does not have any influence on the intention to adopt M-money in the case of Brazil.

Based on the above studies, the following hypotheses were developed to put forward the possible determinants of the intention to adopt M-money in Morocco.

H1: Relative advantage will have a positive influence on the intention to adopt M-money in Morocco.

H2: Compatibility will have a positive influence on the intention to adopt M-money in Morocco.

H3: Complexity will have a negative influence on the intention to adopt M-money in Morocco.

H4: Trialability will have a positive influence on the intention to adopt M-money in Morocco.

3. Methodology

The current study is conducted for the case of Morocco. The target population for this study covers Moroccan bank customers. The survey questionnaire was distributed to the customers of the banks' branches located in the cities of Casablanca and Rabat, covering Banque Marocaine du Commerce Extérieur (BMCE), Attijari wafabank (AWB), Banque Marocaine du Commerce et de l'Industrie (BMCI), as well as Banque Populaire (BP).

What justifies the choice of Rabat and Casablanca is the fact that these two are the administrative and commercial capital of the country respectively. In addition, the Moroccan commercial law mandates the Moroccan banks to establish the headquarters as well as the major branches in Casablanca. Furthermore, the nature of the cities made the Moroccan citizens to come from their native cities, in search of jobs in these two respective cities. A total of 400 questionnaires were randomly distributed, out of which 338 questionnaires were returned and usable, thereby, making a response rate of over 84%.

The survey questionnaire was self administered to collect information about the perception of the customers towards the attributes of the M-money as well as their intention to adopt them in their future transactions. For measuring this information, Likert type scaling was used (1 = Strongly Disagree and 5 = Strongly Agree). Twenty seven different items were listed in this section and most of them were derived from the previous studies conducted in other countries as highlighted above, as well as from

current banking literature with necessary adaptations made for the Moroccan banking system. The second section of the questionnaire explored information about respondent's profile, i.e. gender, age, marital status, employment status, etc. The questionnaire was made in English and was subsequently translated into French and distributed as such, since French is the second language in the country and most Moroccan people can speak French.

The data gathered were subsequently analysed using Exploratory Factor Analysis as a preliminary step to multiple regression analysis. The choice of this technique was inspired from Hair et al. (2010) as well as from similar studies conducted in this area (Chong, Ooi, Lin and Tan, 2010; Brown, Cajee, Davies and Stroebel, 2003). It is worth mentioning that the analysis was done through SPSS 18 software.

The demographic information indicates that 62.4 per cent of the respondents are male, while 37.6 percent are female. In terms of age grouping, 32.5 per cent are between 31 to 40 years old, 31.7 per cent are between 20 to 30 years old, then 20.4 percent are between 41 and 50 years, 10.1 per cent are above 50 years old, and the remaining 5.3 per cent are below 20. Overall, 54.1 per cent are single while the remaining 45.9 per cent are married.

Regarding the level of education, 20.1 percent are holding technician or specialised technician diploma, 18% are holding bachelors' degree, 16.3 per cent are holding a baccalaureate, 15.4 percent are holding a Masters' degree, and 14.2 percent stopped at the high school level. 12.4% of the respondents stopped at the primary or secondary level, while the remaining 3.6 per cent are holding a PhD degree. For the type of employment, 29 per cent of the respondents are working in the private sector, 28.1 per cent are students, 23.7 are self employed and finally, 19.2 per cent of the respondents are holding position in the public sector.

In addition, the monthly salary of the respondents shows that 26.6 per cent of the respondents receive a salary of 10,001 up to 20,000 Moroccan Dirham, 22.2 per cent receive a salary of 6,001 up to 10,000 Moroccan Dirham monthly, 18.4 per cent have a monthly salary of 2,001 up to 6,000 Moroccan Dirham, 13.6 per cent of the respondents have a salary of 20,001 to 40,000 Moroccan Dirham, 12.7 per cent of the respondents get a salary of less than 2,000 Moroccan Dirham, while the remaining 6.5 per cent receive a salary of more than 40,000 Moroccan Dirham.

4. Findings

Descriptive statistics

Table 1 below shows the descriptive statistics of the eight constructs in the study. The lowest mean is that of complexity i.e. 2.447, while the highest is that of trialability i.e. 4.0444. Furthermore, the lowest standard deviation is 0.7234 for relative advantage, while the highest is 1.03405 for risk.

Table 1: Descriptive statistics

	Mean	Std. Deviation	N
Intention	3.9680	.87058	338
Complexity	2.4477	.90356	338
Relative advantage	3.8979	.72340	338
Compatibility	3.7564	.86636	338
Trialability	4.0444	.82912	338

The mean of the intention construct i.e. 3.968 shows that the Moroccan banking customers are willing to adopt M-money, and this is confirmed by the mean difference significance as shown in Table 2. Nevertheless, the complexity's mean of 2.4477 shows that the Moroccan banking customers consider M-money as easy to understand and use, which indicate that the Moroccan banks initially should not consider complexity an issue in implementing M-money.

Table 2: One sample t-test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q23	16.870	337	.000	.920	.81	1.03
Q24	19.486	337	.000	1.015	.91	1.12
Q25	15.507	337	.000	.837	.73	.94
Q26	20.602	337	.000	.976	.88	1.07
Q27	25.178	337	.000	1.092	1.01	1.18
Intention	20.443	337	.000	.96805	.8749	1.0612

Multiple regression analysis

The model R square is found to be very high i.e. 0.661 which indicates that the four independent variables explain 61.1% of the variation in the dependent variable. Particularly, 61.1% of the variation in the intention of the Moroccan customers to adopt M-money can be explained by the complexity of these services, their relative advantage compared to the existing services, the compatibility of these services with the values and needs of the customers, and their trialability.

Table 3: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	200.343	4	50.086	214.133	.000 ^a
	Residual	127.475	545	.234		
	Total	327.818	549			

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.611	.175		14.957	.000
	Complexity	-.452	.035	-.443	-13.046	.000
	Relative advantage	.174	.040	.144	4.344	.000
	Compatibility	.341	.030	.408	11.388	.000
	Trialability	.134	.030	.128	4.530	.000

The significance value of the model shown in Table 3 above i.e. 0.000 indicates that the regression model is significant. Furthermore, the significance level of the regressions coefficients in Table 4 above indicates that all the individual variables are significant. Hence, it can be concluded that all the initial hypotheses were supported. And this is in line with the findings of Rogers (2003), Taylor and Todd (1995), Laukkanen and Kiviniemi (2010), Riquelme and Rios (2010), Lin (2010), Gu *et al.* (2009), Wessels and Drennan (2010), as well as Lee *et al.* (2011). Nevertheless, the above findings contradict with those of Puschel *et al.* (2010) who have found that trialability does not have any influence on the adoption of M-money in the Brazilian setting. The findings also contradict with those of Lewis *et al.* (2010) with regards to complexity, and Cruz *et al.* (2010) regarding compatibility. This can be simply explained by the fact that the above studies were conducted in different contexts, which makes the factors discussed above to be relevant in a given country and irrelevant in another one.

5. Conclusion

The study initially aimed at examining the prospects of the M-money in Morocco. Specifically, the study attempted to investigate the factors that can predict the Moroccan customers' intention to adopt M-money, by using the theory of innovations' diffusion. Overall, the findings provide evidence on the suitability and reliability of the applied set of independent variables in explaining the intention of the Moroccan banking customers to adopt M-money.

Particularly, relative advantage, compatibility, and trialability were found to have a significant positive influence on the intention of the Moroccan customers to adopt M-money. Furthermore, complexity was found to have a significant negative influence on the intention to adopt M-money in Morocco.

The above findings indicate that the Moroccan customers are willing to adopt M-money. However, the Moroccan banks should highlight the above attributes to the customers. Particularly, the banks should render these services trialable, in order to give the customers the opportunity to observe the other attributes of the M-money. This is due to the fact that the customers perceive M-money to be highly trialable, and they

also assert that they have the necessary tools to adopt M-money. However, the Moroccan government as well as the Moroccan banks are highly recommended to focus on these dimensions in order to increase the rate of adoption of M-money in Morocco.

The current study explored the factors that lead to the intention to adopt M-money in Morocco. However, this set of variables is not exhaustive; thus, the future studies are recommended to investigate other variables that may enhance the prediction of M-money adoption, not only in Morocco, but in different settings as well. The future studies are also recommended to investigate the barriers to the adoption of M-money in Morocco as well as in the other countries of similar interests.

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