

# Perspectives Relative to Mobile-Banking Adoption in the United Arab Emirates

Haroun Al Ryalat\*

College of Information Technology, Ajman University, Ajman, UAE

\*Corresponding author: [h.alyalat@ajman.ac.ae](mailto:h.alyalat@ajman.ac.ae)

**Abstract** Mobile-banking (m-banking) services, which are primarily engaged over Short Messaging Service (SMS) or tunneling General Packet Radio Service (GPRS) (or in some cases through Unstructured Supplementary Service Data (USSD)), have enabled provisions of several financial services including intra- and interbank funds transfers and other merchant services. M-banking services reduce temporal and spatial constraints through internet-enabled mobile devices such as smart-phones. In the United Arab Emirates (UAE), the adoption of m-banking is still in its infancy and the statistics are low compared to Europe and North America. Although smartphones are the most dominant form of communications in the UAE, m-banking penetration has been relatively low. Using three constructs to develop a web-based survey instrument, a structured equation modeling (SEM) technique was implemented to assess the correlation between the extended Technology Acceptance Model (TAM) constructs with m-banking adoption. The results indicated that perceived ease, trust, credibility, and usefulness were significant predictors of m-banking adoption in the UAE. The revealing component of users in each of the Emirates representing the UAE was outside the focus of this study while focus on UAE consumers irrespective of their residents in the country. The findings of this study will provide financial institutions the critical information to help expand m-banking services especially in the UAE. In addition, this study may contribute to social changes in ameliorating the lack of effective customer service.

**Keywords:** *M-banking, M-banking adoption, mobile services, technology acceptance model*

**Cite This Article:** Haroun Al Ryalat, "Perspectives Relative to Mobile-Banking Adoption in the United Arab Emirates." *American Journal of Information Systems*, vol. 5, no. 1 (2017): 13-20. doi: 10.12691/ajis-5-1-2.

## 1. Introduction

Most banks in the United Arab Emirates (UAE) and across the Middle East are investing in information and communication (ICT) assets involving social media, banking, introduction of smart branches, and launching of mobile banks [1]. The UAE government has strived to achieve a viable economic growth through investing in digital platforms that allow for the use of internet and social media contents. However, [2] had previously noted that a significant portion of the UAE population has not yet changed their consumer attitude and behavior towards online banking and mobile banking (m-banking).

M-Banking includes the usage of mobile devices, such as smart-phones, tablets, in carrying out financial transactions and communications between financial institutions and their clientele. As a recent study, [3] pointed out - in order to facilitate financial transactions between two parties, m-banking services can be accessed through an application on a mobile device that is installed on the subscriber identity module (SIM) card of the device.

The m-banking services have increased data processing, and thereby reduced operational costs of financial institutions [3]. Improved mobile banking may provide potential, reliable, and confidential services to individuals residing in areas where internet access is limited [4].

In many developing countries, such as Qatar, United Arab Emirates, South Africa, Egypt, Nigeria and Kenya it was realized that m-banking is a key pillar towards national economic development, therefore various steps were taken to adopt m-banking [1]. Increased technology transfer and adoption in the UAE has resulted in impressive economic growth and development in the Middle East. According to [1], the economy in the UAE has grown reflecting the increasing role of Information and Communications Technology (ICT).

Worldwide, the UAE was ranked highly in government readiness, individual readiness and usage, ICT-friendly market environment, ICT infrastructure, and affordability of ICT services [5]. Mobile device users from the UAE showed the highest rates of m-banking adoption (MBA) at 52%, and ranked second after Saudi Arabia among the Middle East countries [4]. The most common financial transactions that are communicated between financial providers and financial users include money transferring services, checking of account balances, payment of bills, and accessing of other banking services [6]. In addition, the 2012 illustrative financial statements of KPMG, which is a global network of independent member firms, analyzed adoption rates of m-banking related to income levels, and concluded that financial service users with a higher income are better adopters of digital and m-banking when compared to financial service users with a lower income [7]. The World Bank [8] predicts that by 2020,

m-banking services will be adopted worldwide, and over 75% of banking services in the world will pass through m-banking services.

This study aims at evaluating the factors that affect adoption of m-banking between financial service providers and financial service users in the UAE. It particularly examines Technology Acceptance Model (TAM) constructs, and how the constructs can be modeled using Structured Equation Modeling (SEM) function in predicting m-banking adoption using simple random survey methodology.

### 1.1. The Purpose of the Study

The overall objective of this study was to assess the factors that affect the adoption of m-banking through use of TAM constructs, and relate m-banking adoption to TAM constructs using a SEM technique. To achieve the overall objective and to guide the study, the following research objectives, research questions, and research hypotheses were formulated.

### 1.2. Research Objectives

The following objectives were formulated to help in addressing the research problem:

- a. To determine the extent to which perceived ease of use is related to m-banking adoption among UAE consumers.
- b. To establish the extent of the relationship between perceived trust and m-banking adoption among UAE consumers.
- c. To examine the extent to which perceived credibility is related to m-banking adoption among UAE consumers.
- d. To determine how perceived cost is related to m-banking adoption among UAE consumers
- e. To establish whether perceived usefulness is related to m-banking adoption among UAE consumers.

### 1.3. Research Questions

The following research questions were derived from the research objectives to help in realizing the research objectives. According to [9], research questions should invoke the researchers' curiosity to develop an appropriate questionnaire that will realize validity and reliability in addressing a research problem.

- a. To what extent does perceived ease of use relate to m-banking adoption among UAE consumers?
- b. To what extent does perceived trust relate to m-banking adoption among UAE consumers?
- c. To what extent does perceived credibility relate to m-banking adoption among UAE consumers?
- d. To what extent does perceived cost relate to m-banking adoption among UAE consumers?
- e. To what extent does perceived usefulness relate to m-banking adoption among UAE consumers?

### 1.4. Research Hypotheses

Based on the five above-mentioned research objectives, the following research hypotheses were formulated to help

in analyzing data that will generate information towards answering the research questions. The research hypotheses constitute the null hypotheses, which gives testable statements that can be analyzed using inferential statistics.

H1: The perceived ease of use (PEOU) does not relate to m-banking adoption among UAE consumers.

H2: The perceived trust (PT) does not relate to m-banking adoption among UAE consumers.

H3: The perceived credibility (CR) does not relate to m-banking adoption among UAE consumers.

H4: The perceived cost (CT) do not relate to m-banking adoption among UAE consumers.

H5: The perceived usefulness (PU) does not relate to m-banking adoption among UAE consumers.

## 2. Methodology

This study presents the techniques and methods that are used in data collection, data analysis, and relating data variables to draw inferences towards answering the research questions. It mainly covers the TAM, research design, study variables, sample size, and research instruments.

### 2.1. The Technology Acceptance Model

The TAM was first developed and used in 1986 [10]. The initial aim of the TAM was to derive an ICT model that would explain how technology users would adopt, accept, and use technology in their daily activities. It has been demonstrated in [11] that when new technology is introduced to the market, users encounter several factors that impact their decision to adopt changes that will make them accept and use the new technology. The initial TAM function had two components, which can be taken as explanatory variables. These components included: Perceived Usefulness (PU), which [11] explains as the extent to which the user believes that a specific piece of technology would increase performance. The second component was Perceived Ease-of-Use (PEOU), described in [10] as an extent to which a user believes that a specific piece of technology would be free from extra efforts. These two components were found to link external variables of technology with the attitudes and actual use of technology [12].

The TAM has continuously undergone metamorphosis with [13] upgrading the model to portray the relationship that exist between usefulness, ease of use, and system use. Moreover, [14] included the intent to use, self-reported usage, and attitude towards use as three novel additive constructs of TAM. The three components named by [20] were renamed by [15] to: usefulness, effectiveness, and ease-of-use. The researcher [14] also justifies this notion to imply that, dependent variable (DV) in TAM represents information use modeled by technology acceptance constructs. The extended TAM model explains the PU as a social effect due to subjective norms, personal voluntariness and image whereas the PEOU is explained as cognitive aspects, such as work relevance, quality of output, and result oriented [15]. In this study, the TAM model was presented using the following framework.

## 2.2. Research Design

A quantitative research design helped in obtaining quantitative data that is related to attitudes, behavioral perceptions, and opinions from the population on the factors that affect the adoption of m-banking through TAM. Part of the data analysis was completed to identify inferences that led to the conclusions.

## 2.3. The Study Variables

Tests were performed on adoption of SEM via regression analysis. External variables are categorized as intervening/confounding variables (CVs). The Dependent variable - DV is a form of m-banking adoption among UAE consumers, whereas IVs include PEOU, PT, CR, CT, and PU. Moreover, the intervening/CVs include socio-demographic factors, such as age, gender, level of education, social economic status (SES), mobile device usage, and internet experience.

## 2.4. Sample Size and Sampling Procedure

This survey includes consumers of banking services either using or not using m-banking. Due to the large concentration of banking service consumers in the UAE, and due to the lack of sufficient time and resources, a sample size of 200-300 individuals was deemed adequate for conducting this study. To justify this assertion, [16] suggested that a sample size of at least 200 participants is suitable for an empirical quantitative survey can provide information necessary for logical conclusions about the studied population.

A simple random sampling approach was used to select 240 banking services customers for the study. The simple random sampling procedure also saves time and resources while allowing for accurate inferences about the research questions [9]. From the sample size of 240 banking

services customers who received an online questionnaire, 212 study subjects completed and returned the questionnaires. These 212 banking services customers represented a turn up rate of 88.3%.

## 2.5. Research Instruments

For this study, a web-based questionnaire was used as research instrument to gain in-depth information concerning m-banking adoption amongst UAE consumers using TAM constructs. In addition, the online survey was found reliable in providing information for valid generalizations. The questionnaires were divided into two sections: 1) Personal socio-demographic factors, and 2) Factors concerning the research-specific objectives [17]. The questionnaires were evaluated for plausibility, validity, and reliability by use of test and pretesting methods, as well as revising methods using a 5-point Likert scale of choices.

## 3. Data Analysis and Results

This study presents data analysis and interpretation of the results. The study is composed of the following sections: reliability and validity tests, analysis of socio-demographic factors, analysis of data concerning the research objectives, and a summary of results, and are presented below.

### 3.1. Reliability and Validity Tests

The collected data was analyzed using SPSS statistical software. Moreover, the reliability and validity of the data was checked using principal component analysis and a Cronbach's alpha test. Table 1 below shows the reliability and validity checks.

**Table 1. Principal component loadings. MBA, mobile banking adoption; PEOU, perceived ease of use; PU, perceived usefulness; PT, perceived trust; CT, perceived cost; CR, perceived credibility**

Factor	1	2	3	4	5	6
MBA1: I will adopt mobile banking as soon as possible	0.901					
MBA2: I intend to use mobile banking in the future	0.896					
MBA3: I will regularly use mobile banking in the future	0.648					
PEOU1: Learning to use mobile banking is easy		0.698				
PEOU2: I now prefer mobile banking		0.708				
PEOU3: Overall, using mobile banking is easy		0.532				
PU1: Mobile banking improves my work and life efficiency			0.655			
PU2: Mobile banking allows me to easily access my information quickly			0.407			
PU3: Overall, mobile banking is useful			0.348			
PT1: I trust that using mobile banking will save me time				0.608		
PT2: I trust that using mobile banking is secure				0.537		
PT3: I trust that using mobile banking will save me money and time				0.448		
PT4: I trust that using mobile banking will be convenient for me				0.309		
CT1: I am able to use mobile banking without extra help or costs					0.896	
CT2: Using mobile banking would be entirely within my control					0.698	
CT3: I have the resources, knowledge, and ability to use mobile banking					0.708	
CR1: My close friends believe that mobile banking is reliable						0.676
CR2: My close friends prefer mobile banking						0.616
CR3: My close friends also rely on mobile banking						0.655
<b>% Variance explained</b>	<b>34.5</b>	<b>32.1</b>	<b>16.1</b>	<b>16.0</b>	<b>1.3</b>	<b>0.00</b>
<b>Cronbach's alpha</b>	<b>0.811</b>	<b>0.736</b>	<b>0.530</b>	<b>0.535</b>	<b>0.691</b>	<b>0.629</b>

The principal component analysis results shown in Table 1 demonstrates that all factor loadings of TAM constructs are greater than 0.3, indicating that the TAM constructs in this study are significant in both reliability and validity. According to [18] the factor loading, which is 30%, is considered significant whereas a factor loading of > 50% is considered very significant.

The results also show that the Cronbach's alpha test for m-banking adoption among UAE consumers was 0.811 while the Cronbach's alpha for independent TAM constructs were: PEOU ( $\alpha=0.736$ ), PT ( $\alpha=0.530$ ), CR ( $\alpha=0.535$ ), CT ( $\alpha=0.691$ ), and PU ( $\alpha=0.629$ ). In most of the TAM constructs, the Cronbach's alpha value was greater than 0.5, therefore, the survey tools helped in collecting reliable and valid data [9].

### 3.2. Socio-demographic Factors

The socio-demographic data was organized using a frequency table and descriptive statistics. Table 2 demonstrates the frequency distribution and shows summary of the mean and standard deviation of the seven socio-demographic factors that were sought for in this study.

The results in Table 2 show that most of the respondents are m-banking users with a relative percentage of 53.7% versus 46.3% who are not using m-banking. The m-banking usage has a mean of 1.46 and a standard deviation of 0.191. However, regarding m-banking experience, the majority had low experience (42.9%) as compared to intermediate experience (36.8%), and high experience

(20.3%). The mean m-banking experience was rated at 1.86 on a scale of 3, with a standard deviation of 0.291.

Almost similar results are seen in internet experience where low experience, intermediate experience and high experience are rates as 36.8%, 40.1%, and 23.1%, respectively. The mean internet experience was rated at 1.77 on a scale of 3 with a standard deviation of 0.508.

Concerning demographic factors [19], the mean age was 29.52 with a standard deviation of 1.323. The modal age group was 25-34 years of age with a frequency of 35.8%. The survey also demonstrated gender parity with males being the major users of m-banking services at 56.6% versus females at 43.4%. Finally, on the educational level, results showed that the majority of m-banking users have a College level (BS) of education with a frequency of 46.2% versus Post-graduate degree (MS) level (37.3%), and Basic Education (High school)(16.5%).

### 3.3. Data Analysis Concerning Research Objectives

The data regarding the research questions was analyzed using both descriptive and inferential statistics. To ascertain the significant factors that affect the adoption of m-banking, Analysis of Variance (ANOVA) tests, t-tests on regression coefficients, and R-squared statistic were tested on the research questions [5].

Table 3 shows the Correlations between m-banking adoption and technology acceptance model constructs which is given below.

Table 2. Frequency distribution and descriptive statistics of socio-demographic factors

Factor	attribute	Frequency	Percent	Mean	Standard deviation
m-banking usage	Yes	114	53.7	1.46	0.191
	No	98	46.3		
	Total	212	100.0		
Gender	Male	120	56.6	1.43	0.497
	Female	92	43.4		
	Total	212	100.0		
Age	Less 25	68	32.1	29.52	1.323
	25-34	76	35.8		
	35-44	28	13.2		
	45-54	16	7.5		
	55+	24	11.3		
	Total	212	100.0		
Education level	Basic Education	35	16.5	2.24	0.191
	College Degree (BS)	98	46.2		
	Post-graduate Degree (MS)	79	37.3		
	Total	212	100.0		
m-banking experience	Low	91	42.9	1.77	0.508
	Intermediate	78	36.8		
	High	43	20.3		
	Total	212	100.0		
Internet experience	Low	78	36.8	1.86	0.291
	Intermediate	85	40.1		
	High	49	23.1		
	Total	212	100.0		
Socio-economic status	Low	52	24.5	2.14	0.230
	Middle	78	36.8		
	High	82	38.7		
	Total	212	100.0		

**Table 3. Correlations between m-banking adoption and technology acceptance model constructs. TAM, technology acceptance model; MBA, mobile banking adoption; PEOU, perceived ease of use; PU, perceived usefulness; PT, perceived trust; CT, perceived cost; CR, perceived credibility**

TAM construct		MBA	PEOU	CT	PT	PU	CR
MBA	Correlation	1	0.534	0.174	0.392	0.505	0.672
	Sig.		0.000	0.011	0.000	0.000	0.000
PEOU	Correlation	0.534	1	0.775	0.949	0.900	0.537
	Sig.	0.000		0.000	0.000	0.000	0.000
CT	Correlation	0.174	0.775	1	0.773	0.726	0.122
	Sig.	0.011	0.000		0.000	0.000	0.077
PT	Correlation	0.392	0.949	0.773	1	0.946	0.566
	Sig.	0.000	0.000	0.000		0.000	0.000
PU	Correlation	0.505	0.900	0.726	0.946	1	0.517
	Sig.	0.000	0.000	0.000	0.000		0.000
CR	Correlation	0.672	0.537	0.122	0.566	0.517	1
	Sig.	0.000	0.000	0.077	0.000	0.000	

Table 3 shows that the correlations between m-banking adoption and all TAM constructs were statistical significant. Importantly, the correlation between m-banking adoption and PEOU was 0.534, which indicates a moderate positive correlation between the m-banking adoption and PEOU. Similar results were observed in correlations between; m-banking adoption and PU (r=0.505), and m-banking adoption and CR (r=0.672). The other correlations between m-banking adoption and respective TAM constructs were weaker even though they were significant. With such correlations, the m-banking adoption can be analyzed by the SEM model using regression analysis.

### 3.4. Structured Equation Modeling

The SEM model was developed through regression analysis and involved obtaining a model summary, ANOVA testing, and coefficients of the SEM model.

**Table 4. Model summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.959	0.919	0.917	0.08940

The results shown in Table 4 indicate a very strong correlation between the m-banking adoption process in

UAE and the independent TAM constructs when modeled together (r=0.959). The model summary also proves that the SEM function is statistically significant in describing the m-banking adoption process as DV and using the TAM constructs as IVs. The strength of the SEM model is about 91.9% derived from the R-squared statistic (R<sup>2</sup>=0.919). Next, we analyzed the significance of the model using ANOVA testing.

**Table 5. ANOVA test**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.737	5	3.747	468.833	0.000
Residual	1.647	206	0.008		
Total	20.383	211			

The ANOVA test results indicate that SEM regression with six TAM constructs yield five degrees of freedom with an F-ratio of 468.833 and a p value of 0.000. Therefore, this model is statistically significant in describing and predicting m-banking adoption in UAE using the TAM constructs and socio-demographic factors as IVs (F=468.833 and p=0.000). With this assurance in mind and with the correlation analysis carried out in Table 5 above, the following Table 6 shows the SEM coefficients.

**Table 6. SEM model coefficient. TAM, technology acceptance model; MBA, mobile banking adoption; PEOU, perceived ease of use; PU, perceived usefulness; PT, perceived trust; CT, perceived cost; CR, perceived credibility**

Model variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.401	0.146		16.496	0.000
PEOU	0.894	0.037	1.564	24.138	0.000
PU	0.101	0.026	0.156	3.838	0.000
PT	0.455	0.077	-2.929	-31.929	0.000
CT	0.035	0.008	0.076	0.184	0.241
CR	0.827	0.056	-0.625	-14.680	0.000
M-banking usage	-0.006	0.014	-0.032	-1.808	0.173
Education level	0.041	0.016	0.020	0.906	0.366
Gender	0.044	0.013	0.070	3.309	0.001
Age	0.004	0.005	0.017	0.843	0.400
M-banking experience	-0.026	0.014	-0.042	-1.808	0.072
Internet experience	0.032	0.036	0.020	0.906	0.366
Socio-economic status	-0.620	0.020	-2.454	-31.467	0.000

Table 6 shows that, among banking consumers, all TAM constructs, except for CT, are significant in affecting the outcome of m-banking adoption in UAE. The PEOU with a coefficient of 0.894 was significant at (t=16.496, p=0.000), and PU had a coefficient of 0.101 and was also significant (t=3.838, p=0.000).

The other significant TAM constructs were: PT with a coefficient of 0.455 and significance of (t=31.929, p=0.000), and CR with a coefficient of 0.827 was significant at (t=-14.680, p=0.000).

**Table 7. Filtered SEM model coefficients. PEOU, perceived ease of use; PU, perceived usefulness; PT, perceived trust; CR, perceived credibility; SES, social economic status; Sig,  $\beta$ , t**

SEM Model	$\beta$	t	Sig.
(Constant)	2.486	17.290	.000
PEOU	0.874	23.586	.000
PU	0.095	3.596	.000
PT	0.455	-31.929	.000
CR	0.822	-14.403	.000
SES	-0.614	-31.929	.000

The SEM model also analyzed the intervening/confounding Variables (CVs), which include socio-demographic factors, such as age, gender, level of education, SES, mobile device usage, and internet experience. The results portray that all socio-demographic factors, except for SES were not significant in affecting the MBA. The SES has a coefficient of -0.620 with significance of (t=-31.467, p=0.000). The outcome of the research shows that all other socio-demographic factors, were not significant in affecting the MBA [20]. If the IVs are filtered to obtain only significant socio-demographic factors and TAM constructs, the following SEM model, shown in Table 7, can be obtained.

The general SEM function can mathematically be expressed as in equation 1.

$$MBA = \text{Const} \tan t + PEOU + PU + PT + CR + SES \quad (1)$$

Substituting the general SEM function with obtained  $\beta$  values results in:

$$MBA = 2.486 + 0.087 \times PEOU + 0.095 \times PU + 0.455 \times PT + 0.827 \times CR - 0.614 \times SES. \quad (2)$$

The SEM function indicates that, when PEOU( $\beta=0.874$ ) of m-banking user increases by one, the adoption process of m-banking will increase by 0.874, given that other factors are held constant. Similarly, when PU ( $\beta=0.095$ ) customer increases by one, the m-banking adoption process will increase by 0.095. When PT ( $\beta=0.455$ ) increases by one, the m-banking adoption process will increase by 0.455, and finally, when the CR( $\beta=0.827$ ) increases by one, the m-banking adoption process will increase by 0.827, given that the rest of the factors are kept constant. However, when the SES ( $\beta = -0.614$ ) increases by one, the m-banking adoption process will decrease by 0.614.

### 4. Summary of Results

Table 8 summarizes the outcome of the conducted research and perceived ease of use, perceived trust, credibility, cost relation and perceived usefulness.

### 5. Research Findings

In this study, we demonstrated that all factor loadings of TAM constructs were greater than 0.3. Therefore, the principal component analysis of the TAM constructs of this study indicate that the TAM constructs were reliable and valid in modeling m-banking adoption amongst UAE banking consumers through the SEM approach. Concurrently, for most of the TAM constructs, the Cronbach's alpha was greater than 0.5, therefore the survey tools were appropriate in collecting reliable and valid data.

**Table 8. Summary of the Conducted Research**

Research question	Result
1 To what extent does perceived ease of use relate to m-banking adoption among UAE consumers?	<ul style="list-style-type: none"> <li>The perceived ease of use is significantly and positively correlated with mobile banking adoption (r=0.534)</li> <li>The perceived ease of use significantly affects m-banking adoption (t=16.496, p=0.000)</li> <li>The perceived ease of use increases the m-banking adoption process by 0.894 (<math>\beta=0.894</math>)</li> </ul>
2 To what extent does perceived trust relate to m-banking adoption among UAE consumers?	<ul style="list-style-type: none"> <li>The perceived trust and mobile banking adoption are significantly and positively correlated (r=0.392).</li> <li>The perceived trust significantly influenced m-banking adoption (t=31.929, p=0.000)</li> <li>The perceived trust increases m-banking adoption process by 0.455 (<math>\beta=0.455</math>)</li> </ul>
3 To what extent does perceived credibility relate to m-banking adoption among UAE consumers?	<ul style="list-style-type: none"> <li>The perceived credibility and mobile banking adoption are significantly correlated (r=0.672)</li> <li>The perceived credibility significantly related with m-banking adoption (t=-14.680, p=0.000)</li> <li>The perceived credibility increases m-banking adoption process by 0.827 (<math>\beta=0.827</math>)</li> </ul>
4 To what extent does perceived cost relate to m-banking adoption among UAE consumers?	<ul style="list-style-type: none"> <li>The perceived cost and mobile banking adoption are weakly but positively correlated (r=0.174)</li> <li>The perceived cost had a coefficient of 0.101 did not have any significant influence on m-banking adoption (t=0.184, p=0.241)</li> </ul>
5 To what extent does perceived usefulness relate to m-banking adoption among UAE consumers?	<ul style="list-style-type: none"> <li>The mobile banking adoption and perceived usefulness were positively and significantly correlated (r=0.505)</li> <li>The perceived usefulness significantly affected m-banking adoption (t=3.838, p=0.000)</li> <li>The perceived usefulness increases m-banking adoption process by 0.095 (<math>\beta=0.095</math>)</li> </ul>

This study also realized that the majority of m-banking service users had a low m-banking experience as compared to those with intermediate experience, and high experience. Similar findings were found in internet experience, where the majority of internet users had an intermediate internet experience versus those with low and high internet experience [21].

In this study, we found that the correlations between m-banking adoption and all TAM constructs were significant, except for the correlation between m-banking adoption and CT, which was weak even though significant.

The SEM function was found to be statistically significant in describing the m-banking adoption process as DV with the TAM constructs being IVs. The SEM model was found to have about 91.9% strength of significant in describing and predicting the m-banking adoption in UAE using the TAM constructs and socio-demographic factors as IVs.

The SEM demonstrated that all TAM constructs, except for CT, were significant in affecting the outcome of m-banking adoption in UAE among the banking consumers. The findings and conclusions based on the research hypotheses are indicated below.

H1: The PEOU does not relate to m-banking adoption among UAE consumers. The study realized a t-test value of 16.496 with corresponding p-value of 0.000. Given that the p-value is less than 0.05, the null hypothesis is rejected and it can be concluded that the PEOU positively relates to m-banking adoption among UAE consumers. Testing hypothesis also indicated that when PEOU of an m-banking user increases by one, the adoption process of m-banking will increase by 0.874, when other factors are held constant.

H2: The PT does not relate to m-banking adoption among UAE consumers. We found that the PT had a t-test value of 31.929 with a respective p-value of 0.000. Since the p-value is less than 0.05, the study rejects the null hypothesis and it can be concluded that PT relates with m-banking adoption among UAE consumers. The study also indicated that when PT increases by one, the m-banking adoption process will increase by 0.455.

H3: The CR does not relate to m-banking adoption among UAE consumers. We found that the CR had a t-test value of -14.680 with a respective p-value of 0.000. Therefore, the null hypothesis was rejected and it can be concluded that CR affects m-banking adoption among UAE consumers. The study also indicated that if the CR increases by one, the m-banking adoption process will increase by 0.827 when the rest of the factors are kept constant.

H4: The CT does not relate to m-banking adoption among UAE consumers. The results indicated that CT had a t-test value of 0.184 and p-value of 0.241 with a beta coefficient of 0.101. Therefore, the null hypothesis was accepted since the p-value was greater than 0.05. It can be concluded that the CT did not have any significant correlation with m-banking adoption.

H5: The PU does not relate to m-banking adoption among UAE consumers. Finally, the study showed that the PU had a t-test value of 3.838 and a respective p-value of 0.000. Therefore, the null hypothesis was rejected, and it is therefore concluded that the PU positively relates to m-banking adoption among UAE consumers. The study also indicated that when PU of a customer increases by one, the m-banking adoption process will increase by 0.095.

## 6. Conclusion

This study is strategic as it reveals the likelihood that mobile banking adoption requires a lot of appeal to consumers and provides sufficient value. The correlation between different demography of users also indicate that mobile banking adoption is also well established. The weakness in this study may relate to how Mobile banking apps or features may influence its adoption peak relative to their each bank which was outside the parameters of this research. Another area could have been the institutionalized survey methodology to probe consumers from each 'Emirates' in the UAE, in order to have comprehensive correlated results on mobile banking adoption. Finally, financial institutions need a mobile strategy for younger consumers who will most certainly prefer using mobile banking, while proposition may be put in place by the banks to train older customers.

## References

- [1] Aboelmaged, M.G. and Gebba, T.R., "Mobile Banking Adoption: An Examination of Technology Acceptance Model and Theory of Planned Behavior," *International Journal of Business Research and Development*, 2(1). 35-50. 2013.
- [2] Fernandes, C. and Awamleh, R., "Internet Banking: an Empirical investigation into the extent of adoption by banks and the Determinants of Customer Satisfaction in the United Arab Emirates," *Journal of internet banking and commerce*, 10(1). 1-12. 2005.
- [3] Dasgupta, S., R., Paul, and S., Fuloria, "Factors Affecting Behavioral Intentions towards Mobile Banking Usage: Empirical evidence from India," *Romanian Journal of Marketing*, 3(1). 6-28. 2011.
- [4] Bandyopadhyay, G., *Banking the Unbanked: Going Mobile in Africa*, Infosy Technologies Ltd., 2010.
- [5] Richmond, A., Boumedyen, S., "Schemes for Distributed Computing Environment Based on Cloud Computing Technology for Ministry of Regional Municipalities and Water Resources (MRMWR)," *International Journal of Engineering Inventions*, 6(1). 01-06. Jan 2017.
- [6] Hernandez, J., "The Regulatory Landscape of Mobile Banking," *Telecommunications Management Group*, 2011. [Online]. Available: [http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/documents/Session\\_1\\_Hernandez.pdf](http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/documents/Session_1_Hernandez.pdf) /. [Accessed: Jan. 2, 2017].
- [7] KPMG, "Illustrative Financial Statements: Banks," IFRS, 2012. [Online]. Available: <https://home.kpmg.com/content/dam/kpmg/pdf/2013/04/1-illustrative-financial-statements-banks.pdf>. [Accessed: Dec. 20, 2016].
- [8] World Bank, "United Arab Emirates", 2015. [Online]. Available: <http://data.worldbank.org/country/united-arab-emirates>. [Accessed: Mar. 8, 2017].
- [9] Krueger, R. A., and Casey, M. A., *Focus groups: A Practical Guide for Applied Research*, Sage publications, 2014.
- [10] Davis, F.D., "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly*, 13(3). 319-39. 1989.
- [11] Davis, F.D., "User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts," *International Journal of Man Machine Studies*, 38(3). 475-487. 1993.
- [12] McKechnie, S., Winklhofer, H. and Ennew, C., "Applying the Technology Acceptance Model to the Online Retailing of Financial Services," *International Journal of Retail & Distribution Management*, 34 (4). 388-410. 2006.
- [13] Venkatesh, V., and Davis, F. D., "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies," *Management Science*, 46(2). 186-204. 2000.

- [14] Workman, M., "Advancements in Technology: New Opportunities to Investigate Factors Contributing to Differential Technology and Information Use," *International Journal of Management and Decision Making*, 8(2). 318-342. 2007
- [15] Mathieson, K., Peacock, E. and Chin, W., "Extending the technology acceptance model: the influence of perceived user," *The Data Base for Advances in Information Systems*, 32(3). 86-113. 2001.
- [16] Mugenda, O. M., *Research methods: Quantitative and qualitative Approaches*, African Centre for Technology Studies, 2003.
- [17] Kothari, C. R., *Research Methodology: Methods and techniques*, New Age International, 2004.
- [18] Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C., *Multivariate Data Analysis*, Prentice-Hall, Englewood Cliffs, 1998.
- [19] Richmond, A., Boumedyen, S., "A Security Analysis To Be Technology Architecture For Ministry of Regional Municipalities and Water Resources (MRMWR)," *International Journal of Research in Social Sciences*, 6(1). 01-06. Jan. 2017.
- [20] Richmond, A., Haroun, A. and Khalid, A., "Interpreting Causes of Attrition in an Information Technology (I.T.) Undergraduate Degree Program within a Gulf State Regional University," *International Journals of Multidisciplinary Research Academy*, 6(10). 2016.
- [21] Richmond, A., Haroun, A., Theo, O., "Perspectives for Cyber-Deterrence: A Quantitative Analysis of Cyber Threats and Attacks on Consumers," *International Journal of Innovative Research in Science, Engineering and Technology*, 5(7). 01-18. Aug.2016.