

XXIV CONGRESO NACIONAL DE ACEDE
SEPTIEMBRE 2014, CASTELLÓN

**USE AND ACCEPTANCE OF SOCIAL TECHNOLOGIES BY
INTERNET BANKING SERVICES USERS IN THE MIDDLE EAST**

Ana Rosa del Aguila-Obra
Universidad de Málaga.

Antonio Padilla-Meléndez
Universidad de Málaga.

Ahmad Abouseada
Universidad de Málaga.

Datos de contacto:

Ana Rosa del Aguila-Obra
Universidad de Málaga.
Facultad de Estudios Sociales y del Trabajo / Departamento de Economía y
Administración de Empresas
Campus de Teatinos (ampliación)
952952084
anarosa@uma.es

**USE AND ACCEPTANCE OF SOCIAL TECHNOLOGIES BY
INTERNET BANKING SERVICES USERS IN THE MIDDLE EAST**

Ana Rosa del Aguila-Obra
Universidad de Málaga.

Antonio Padilla-Meléndez
Universidad de Málaga.

Ahmad Abouseada
Universidad de Málaga.

Resumen

Bankers worldwide are interested in user's behaviour in adopting technology-enhanced banking services. This paper analyses the factors that affect the adoption of social technology by users of internet banking services in the Middle East context. The Technology Readiness and Acceptance Model is applied to data from a survey of 338 users in Egypt, Jordan, Kuwait, Lebanon and Saudi Arabia. Findings indicate that technology readiness plays an important role in forming the perceived ease of use. Another main finding is that, contrary to previous research, only perceived ease of use and playfulness influence on the intention to continuous use of these services.

Palabras clave:

Social technology based banking services; Middle East Banks; TRAM; Social Network Sites; Technology Adoption.

USE AND ACCEPTANCE OF SOCIAL TECHNOLOGIES BY INTERNET BANKING SERVICES USERS IN THE MIDDLE EAST

1. INTRODUCTION

Nowadays the social technologies (ST) represent a global phenomenon, for example, in December 2013 Facebook had 1.23 billions of active users per month, and 81 per cent of the users were from abroad U.S.A and Canada. In the Arab countries, 93 per cent of the internet users visit social networking sites and they spend between two and four hours using these services per day (Dennis et al., 2013). In general, the users are demanding ST based services, such as banking services, among others, and the companies have to respond to the new expectations of the consumers. In addition, the Gulf Cooperation Council banks (Bahrain, Kuwait, Qatar, Oman, Saudi Arabia and the United Arab Emirates) are changing their strategy and turning it thought a more customer-oriented one (Accenture, 2011).

In general terms, the economic benefits for companies of adopting ST based services are clear (Lu et al., 2005): increase in the retention rate, satisfaction, and customer perceived credibility. Research on ST adoption is still very recent and there is a lack of research on this subject. There are some relevant approaches to the study of the impact of ST on management and marketing (Garrigos-Simon et al., 2012), on brand loyalty (Laroche et al., 2013), and on how ST adoption does not only help to increase sales but also increases the enterprise's productivity (Auger et al., 2010). In addition, ST adoption leads to improvements in the competitiveness of enterprises, and a large number of companies have had higher revenues and lower operating costs (Chui et al., 2012). Finally, ST, when applied, provides advantages for dissemination of innovative ideas in the area where the organization operates, helping the company to increase the number of weak links that facilitates the transmission of new ideas and knowledge, and as a result creates a social recognition (Jarrahi and Sawyer, 2013). Therefore, in a few years, ST has turned out to be an essential tool especially in those sectors that require a direct relationship between enterprises and customers (Hinz, et al., 2014).

Research about the adoption of ST in the organizational context and at the individual context is needed. There are few studies about this topic and they were conducted in some specific cultural context (Schlagwein and Prasarnphanich, 2014). For example, if the GLOBE classification is used, some research have been done in the *Anglo Cluster*, such as Canada (Laroche et al. 2013; Reich and Benbasat, 2000), Australia (Standing and Kiniti, 2011), UK (Michaelidou, et al., 2011; Ramadani and Rajwani, 2010), and the USA (Terence et al., 2012). In the *Confusian Cluster*, there are studies in

China (El-Haddadeh et al., 2012; Zhang, 2011), South Korea (Jin, 2013; Joo, 2011), and Taiwan (Pai and Arnott, 2012). In the *Southern Asia Cluster*, in Thailand (Nugultham, 2012) and Malaysia (Daud and Zakaria, 2012). In *Latin European Cluster*, in France (Barron and Schneckenberg, 2012) and Italy (Corrocher, 2011). Finally, other researches compare different geographical areas, such as South America, South Europe and South Africa (Danis et al., 2011).

The researchers have been paying attention to the Middle East cluster in relation to the Arab spring and the ST as drivers of that phenomena (Markhan, 2014). However, it is still scarce the previous literature about ST adoption in the Arab countries. Previous research has been conducted according to the acceptance and use of information technology (IT) in Saudi Arabia or Kuwait (Al-Gahtani et al., 2007; Rouibah et al., 2011). The scarcity is more evident in online banking. Al-Somali, Gholami and Clegg (2009) analyzed the acceptance of online banking in Saudi Arabia, but in the case of ST based banking services, particularly, there is an absence of research in culturally different countries, such as the Middle East ones, making it relevant to study this particular context.

Specific research is needed in order to understand the drivers and inhibitors in the adoption of ST for individuals and organizations in this context. This paper contributes to the literature by extending the Technology Acceptance Model, analysing the factors that affect the adoption of ST based services and its continued use by Middle East users (Lin et al., 2007; Jin, 2013). The paper continues as follows. After a literature review, the research model and the hypothesis are described. The methodology and main results are summarized next. The conclusions, limitations, future research, and managerial implications close the paper.

2. LITERATURE REVIEW

2.1. Concept of social technologies

The term ST is used interchangeably and as a synonym for social software, social media, or Web 2.0 (Berthon et al., 2012; Constanitnides and Fountain, 2008; Kaplan and Haenlein, 2010; Kietzmann et al., 2011; Li and Bernoff, 2008; O'Reilly and Battelle, 2009). To some extent, this situation causes confusion, and it is necessary to clarify the terms to get a clear and deeper concept of ST. In principle, the difference between Web 2.0 and social media is that the first is a technology-set of online tools that supports social interaction among users, while the later one represent the contents transferred through this technology (Berthon et al., 2012). In other words, ST are *a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User-Generated Content* (Kaplan and Haenlein, 2010, p. 61).

2.2. Technology Acceptance Model (TAM)

After the “computer revolution” the world has become more dependent on technology, and a growing body of academic research has focused on the determinants of acceptance and use of computer technology by the users. Among the models that have been proposed, Technology Acceptance Model (TAM) (Davis 1986; Davis et al., 1989) is the most widely accepted model (Pavlou, 2003; Wang et al., 2003), because of its generalization and its confirmed empirical force through a large number of academics on IT (Venkatesh, 2000). Consequently, there is a general agreement about the validity of TAM in predicting the acceptance of various technologies by individuals.

TAM argues that two variables, perceived usefulness (PU) and perceived ease of use (PEU) are major structures that determine attitudes toward adoption, intended use, and the actual use of the technology. PU is defined as the degree in which a person believes that using a system notably improve their performance, while the PEU refers to the measure in which a person considers that using a system will be particularly effortless. Several previous studies have pointed out the similarities between the beliefs of perceived usefulness and ease of use of TAM, and the constructs of relative advantage and complexity in the theory of diffusion (Taylor and Todd, 1995). Later, Venkatesh, Morris, Davis and Davis (2003) have modified the model, as an extended TAM (ETAM), suggesting it as a complementary model. However, some authors have considered it too simple, and overstating the decisions of the user (Bruner and Kumar, 2005). The differences between them are evident. While, on one hand, people in a work environment may adopt a system against their will, due to management policies, on the other hand, consumers are free to choose among numerous alternatives (Lin et al., 2007). For example, customers of a company that is present in the applications of ST can choose to communicate with companies via the conventional channels (e.g., phone, email, personal contact), or through ST, or both.

However, all service delivery processes require a certain level of participation of clients, and this is true even in the context of electronic services. Therefore, due to the level of participation required by the customer for co-producing the service, TAM may be inadequate to explain consumers' behaviour regarding technology adoption. Related to this, Venkatesh (2000) and Pavlou (2003) considered many variables about individual differences, demographic and situational variables, cognitive variables, and variables of personality. Finally, as reported by Lin et al. (2007, p. 642), “a model that incorporates some variables of individual differences is a necessary first step to identify and qualify the psychological process of the perception of the value of the technology”.

2.3. Technology Readiness and Acceptance Model (TRAM)

Technology Readiness (TR) refers to the propensity of people to adopt and use new technologies to achieve the objectives. The construct of guidance and acceptance of ST can be seen as a measurement of a general state of mind and as a reflection of a mental image of facilitators and inhibitors that determine a persons' predisposition to use new technologies (Parasuraman, 2000). The construct TR includes four sub-dimensions: optimism and innovative character (positive TR), discomfort and insecurity (negative PR). Optimism refers to a positive view of the technology, and the conviction that technology can give people more control, flexibility and efficiency. The innovative nature represents the tendencies of people to be pioneers in technology and became opinion leaders. The discomfort dimension refers to a perceived lack of control over the technology and the feeling of being overwhelmed by it. Finally, insecurity is a distrust of technology and having doubts about its ability to function properly.

TAM is used to measure the perception of usefulness and ease of use for a system in particular. TR, on the other hand, represents the general beliefs about technology. Lin et al. (2007), based on the theories of consumer behaviour discipline, claimed that the two models are intuitively interrelated. In general, when consumers make a choice, they seek information in its memory. As a result, the individuals' general beliefs about technology, which come from previous experience, are used to link perceptions of utility and ease of use of a specific system. These experiences, based on personal assessments, may be more important for consumers with a low level of specific knowledge of the system, because they are more likely to process alternatives of choice using non-figurative general criteria. Thus, based on previous reasoning it could be reasoned that individuals, when evaluating a new technology, do so using their implicit cognitive information (i.e., TR) rather than explicit cognitive assessments (i.e., usefulness and ease of use).

Some studies have found that optimism; innovativeness, discomfort, and insecurity play an important role in technology use, the combination of TAM and TR, TRAM. In addition, TR is also a powerful factor with respect to satisfaction and intentions to continuous use (Lin et al., 2007; Jin, 2013).

Other studies have explored the playfulness dimension as a cognitive factor (Hsu and Lin, 2008) through which the pleasure and satisfaction for the performance of an attitude are developed. It is logical to assume that ST users are involved in the activity of networks because of the process, the fun and enjoyment. Perceived playfulness (PP) has demonstrated to have a significant effect on the use of the Internet. In addition, playfulness was added to the TAM or TRAM by various studies (Jin, 2013; Huysman and Wulf, 2004; Padilla-Meléndez et al., 2013). Therefore, the components of TR and playfulness should have significant effects on the adoption and use of ST (Berthon et al., 2012).

3. RESEARCH MODEL AND HYPOTHESIS

According to Lin et al. (2007) and Jin (2013), the positive TR (PTR), the negative TR (NTR) and other factors as PEU, PU, PP and the intention to continuous use (ICU), are indicators of acceptance of technology. All these factors will be studied conjointly in this research. Consequently, the following hypotheses are proposed for the case of ST based services:

H1: The positive technology readiness (PTR) influences positively perceived ease of use (PEU) of ST based services by users.

H2: The positive technology readiness (PTR) positively influences the perceived usefulness (PU) of ST based services by users.

H3: The positive technology readiness (PTR) influences positively perceived playfulness (PP) of ST based banking services by users.

H4: The negative technological orientation (NTR) is negatively associated with the perceived ease of use (PEU) by ST based banking services users.

H5: Negative technology readiness (NTR) is negatively associated with perceived usefulness (PU) of ST based banking services by users.

H6: Negative technology readiness (NTR) is negatively associated with perceived playfulness (PP) of ST based banking services by users.

H7: The perceived ease of use (PEU) of ST based banking services by users has a significantly positive effect on the perceived usefulness (PU).

H8: The perceived ease of use (PEU) of ST based banking services by users has a significantly positive effect on perception of playfulness (PP).

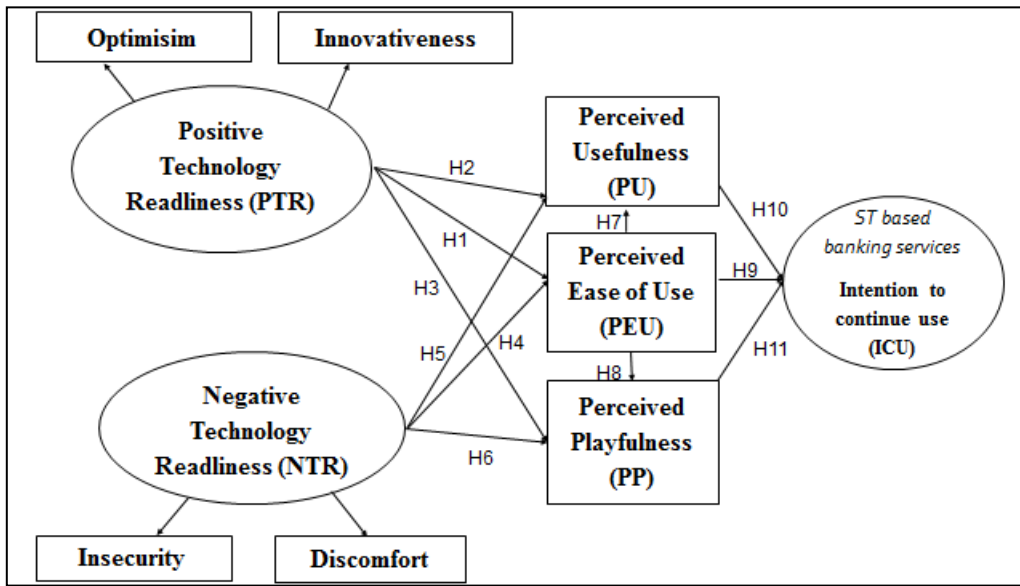
H9: The perceived ease of use (PEU) by the users has a significantly positive effect on intention to continue use of ST based banking services (ICU).

H10: The perceived usefulness (PU) by users has a significantly positive effect on intention to continuous use of ST based banking services (ICU).

H11: The perceived playfulness (PP) by users has a significantly positive effect on intention to continue use of ST based banking services (ICU).

Continued use of a technology does not fully explain its use, if external variables affect the ease of use and usefulness, and even playfulness. Therefore, PEU affects usefulness, playfulness and the intention to continuous use at the same time, therefore, the following research model are proposed.

Figure 1: Research model



4. METHODOLOGY

To provide an empirical explanation, based on the literature review, the research model was applied to the banking sector. As research context, five Middle East countries, specifically Egypt, Jordan, Kuwait, Lebanon, and Saudi Arabia were selected. Upon literature review, this area lacked for empirical research on IT and ST adoption, especially regarding the use of TRAM to explain continuous use of ST based banking services.

To validate the model and the hypotheses, a web survey using Google Forms tool was designed. Later, the questionnaire was distributed through well-known pages on Facebook to reach as much ST users as possible. A total of 338 valid respondents were obtained during summer 2013.

To ensure the content validity of the measurements, items were selected from the literature review (see Table 1). As mentioned, a quantitative web survey was developed and addressed to users of ST based banking services in the context of the research, in order to validate the research model and hypotheses. The survey approached individuals (consumers of banking services) located in these countries. The answers from users younger than 18 years old were excluded, as they do not have the legal capacity to have a bank account. In addition, non-users of ST were excluded. The survey was conducted in Arabic. Three people participated in the translation of the questionnaire from English to Arabic and backwards to ensure a similar understanding. The collected data was analysed using SPSS version 20 and EQS 6.1 for Windows. The final sample was formed by 338 users from five Middle East countries (see Table 2).

Table 1: Literature review and TRAM constructors

Author/s	Ease of use	Usefulness	Playfulness	Innovativeness	Optimism	Insecurity	Discomfort	Intention to continuous use
Yiu et al. (2007)	✓	✓		✓				✓
Ajjan and Hartshorne (2008)	✓	✓						
Hossain and de-Silva (2009)	✓	✓						
Oh et al.,(2009)	✓	✓		✓				
Chua and Goh (2010)	✓	✓	✓					✓
Cromer (2010)						✓		
Chen et al.,(2012)								✓
Terence et al.(2012)		✓						✓
Pai and Arnott (2012)	✓	✓	✓					
El-Haddadeh et al. (2012)	✓	✓						
Jin (2013)	✓	✓	✓	✓	✓	✓	✓	✓
Jackson et al. (2013)	✓	✓		✓				
Yoon and Barker-Steeg (2013)	✓	✓		✓		✓		

Table 2: Survey summary

Country	Frequency	%
Egypt	152	45,0
Jordan	51	15,1
Kuwait	31	9,2
Lebanon	41	12,1
Saudi Arabia	63	18,6
Gender	Frequency	%
Female	180	53,3
Male	158	46,7
Age	Frequency	%
18-25	110	32,5
26-35	106	31,4
36-45	72	21,3
>45	50	14,8
Education level	Frequency	%
Basic education	17	5,0
Secondary education	54	16,0
University degree	189	55,9
Postgraduate	78	23,1
Total	338	100

5. DATA ANALYSIS AND RESULTS

To evaluate the association between quantitative variables and categorical variables, the means of the distribution of the quantitative variables in each of the group were compared. The existence of mean differences of the variables according to the respondent's socio-demographic profile were calculated. As the data were not normal, non-parametric tests, such as the *U* of Mann-Whitney were applied. For the categorical variables having more than two categories, the *K* independent samples contrasted by the Kruskal-Wallis test were applied.

Summarizing the results, it was observed that among the four categorical variables analysed, the variable country was the one with more mean differences. There were differences among countries surveyed in terms of dissatisfaction, insecurity, PEU, PU and PP. In relation to age, differences were seen in innovativeness, PP and the ICU. Moreover, level of education was found with a significant relationship with optimism, innovativeness and insecurity. Results highlight also the relationships of innovativeness with other variables, in particular, gender, age and educational level (Table 3).

Table 3: Results of the analysis of mean differences

Variables	Gender	Country	Age	Educational level
Optimism				✓
Innovativeness	✓		✓	✓
Discomfort		✓		
Insecurity		✓		✓
Ease of Use		✓		
Usefulness		✓		
Playfulness		✓	✓	
Intention to continue use			✓	

(*) The marks shows were significant differences were found.

Applying exploratory factorial analysis, it was found that values of all the variables analysed (PTR, NTR, PEU, PU, PP, and ICU) represented values bigger than 0.5 in the test of KMO. With respect to the test of sphericity of Bartlett that contrasts the null hypothesis, it was observed that the significance was < 0.05 (all variables have zero significance), so it can be said that data was suitable for factor analysis (Afifi and Clark, 1996; Everitt and Dunn, 1991; Hair et al., 1999; Obson, 1992). To analyse the convergent and discriminative validity from the perspective of the relationships between constructs, the matrix of correlations between variables was used. It was checked that correlations among variables of a same construct proved to be superior to correlations between variables of different constructs. Therefore, the measurement scale had convergent and discriminative validity. The external validity refers to the degree in which it is ensured that the sample is representative of the population that it wants to generalize. As mentioned above in the methodology, a random sampling was used, which allowed to obtain a sample of 338 valid responses, with sampling error 5.33 per cent and 95 per cent of confidence level, making it possible that the results were generalizable to the population.

Once the validity and reliability were probed, an exploratory factor analysis was conducted in order to observe the different dimensions or factors underlying the measurement scale. A factorial model composed of eight factors, which brings together the 25 observed variables, was obtained. The variance explained in the factorial model showed that each factor model was well discriminated against this group of variables. Below is the composition of the factors obtained.

The loadings of all factors were reasonable, as it was the index of reliability, which was greater than 0.7 in all factors (see Table 4). The load factor indicates the correlation between each variable and the corresponding factor; thus, a variable with greater load factor will be more representative of the factor.

Finally, communalities were analysed. As criterion, it was considered that at least 50% of the variance was explained in each variable, so the variables with less than 0.5 communalities are considered insufficiently explained and they should be removed (Hair et al., 1999). Table 5 shows that the communalities of all items are > 0.5. As a result, it was considered that the variables were sufficiently explained.

Table 4: Reliability of measurement scales

Variables	Nº of items	Cronbach Alfa
Optimism	4	0.905
Innovativeness	3	0.906
Discomfort	3	0.721
Insecurity	3	0.796
Ease of Use	3	0.957
Usefulness	3	0.843
Playfulness	3	0.863
Intention to continue use	3	0.899

Table 5: Total variance and communalities of the factorial model

Factors	Nº of items	Items	Variance	Extraction sums of squared loadings	% of variance	Communalities
Optimism	4	P18_1	3.121	3.121	78.021	0.752
		P18_2	0.365			0.804
		P18_3	0.272			0.801
		P18_4	0.242			0.763
Innovativeness	3	P18_5	2.526	2.526	84.216	0.879
		P18_6	0.331			0.878
		P18_7	0.143			0.770
Discomfort	3	P19_1	1.928	1.928	64.274	0.562
		P19_2	0.619			0.673
		P19_3	0.453			0.693
Insecurity	3	P20_1	2.13	2.13	71.001	0.771
		P20_2	0.574			0.776
		P20_3	0.296			0.583
Ease of Use	3	P22_1	2.764	2.764	92.14	0.923
		P22_2	0.142			0.935
		P22_3	0.093			0.906
Usefulness	3	P23_1	2.303	2.303	76.772	0.825
		P23_2	0.506			0.845
		P23_3	0.191			0.634
Playfulness	3	P24_1	2.359	2.359	78.621	0.848
		P24_2	0.444			0.825
		P24_3	0.197			0.686
Intention to continue use	3	P25_1	2.498	2.498	83.258	0.861
		P25_2	0.291			0.824
		P25_3	0.211			0.813

Confirmatory factor analysis is a small and particular case analysis of structural equations, whose potential is its usefulness to validate the measurement scale, key issue for further generalization of the results (Kline, 1998). However, unlike the exploratory factor analysis, confirmatory factor analysis is used to assess the validity of a series of latent variables that cannot be observed directly. After making the confirmatory analysis using structural equations (EQS, 6.1) it was confirmed the scale used

consisting of 25 items. Using the EQS software version 6.1., with 338 cases and 37 variables, it was verified that the data were not normal, as the multivariate kurtosis coefficient of Mardia (27,8700 value) and its standard estimator (20,2537), was higher than the recommended values. Once the non-normality of data was contrasted, the statistical program EQS version 6.1 was used, as it allows estimating robust indicators of level of fit, as well as the statistical chi square robust, called Satorra-Bentler Scaled Statistics that corrects the Chi-square, taking into account the non-normality of variables (Satorra and Bentler, 2001).

The model was identified using the method of maximum likelihood with robust indicators. Two latent variables, PTR (positive technology readiness) and NTR (negative technology readiness) are shown in the diagram. In addition, there were four dependent variables: PU, PEU, PP and ICU. To assess whether the values obtained could adequately interpreted, some indices were estimated (see Table 6).

Table 6: Model fit indices (robust method)

Index	Value	Recommended value
Satorra-Bentler scaled Chi-square	9.4166	
Liberty grade	8	
Probability to Chi-square statistic	0.30838	$p \geq 0.05$
Bentler-Bonett Normed Fit Index	0.989	≥ 0.9
Bentler-Bonett non-normed fit index	0.994	≥ 0.9
Comparative Fit Index (CFI)	0.998	≥ 0.9
Bollen's (IFI) fit index	0.998	≥ 0.9
McDonald's (MFI) fit index	0.998	≥ 0.9
Root mean-square error of approximation (RMSEA)	0.023	≤ 0.05
90% confidence interval of RMSEA	(0.000. 0.070)	small

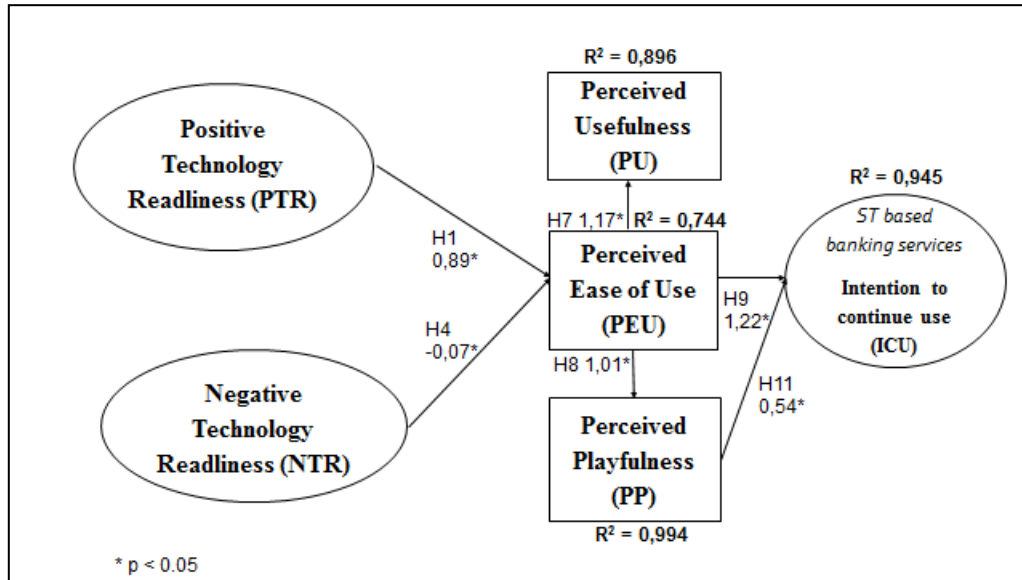
Given the results, the model was considered as fitting the data and, therefore, the significant relationships between the different constructs to validate the assumptions made were analysed. The acceptance and rejection of different hypotheses are detailed in Table 7. This model reflects the behaviour of users of Middle East banks, regarding the continued use of the ST. As a result, the validation of assumptions and relationships is reflected in the following chart (see Figure 2).

Table 7: Hypothesis validation

Hypotheses	Validation
H1: The positive technology readiness (PTR) influences positively perceived ease of use (PEU) of ST based banking services by users.	<i>Accepted</i>
H2: The positive technology readiness (PTR) positively influences the perceived usefulness (PU) of ST based banking services by users.	<i>Not accepted</i>
H3: The positive technology readiness (PTR) influences positively perceived playfulness (PP) of ST based banking services by users.	<i>Not accepted</i>
H4: The negative technological orientation (NTR) is negatively associated with the perceived of ease of use (PEU) by ST based banking services users.	<i>Accepted</i>
H5: Negative technology readiness (NTR) is negatively associated with perceived usefulness (PU) of ST based banking services by users.	<i>Not accepted</i>
H6: Negative technology readiness (NTR) is negatively associated with perceived playfulness (PP) of ST based banking services by users.	<i>Not accepted</i>
H7: The perceived ease of use (PEU) of ST based banking services by users has a significantly positive effect on the perceived usefulness (PU).	<i>Accepted</i>
H8: The perceived ease of use (PEU) of ST based banking services by users has a significantly positive effect on perception of playfulness (PP).	<i>Accepted</i>

Hypotheses	Validation
H9: The perceived ease of use (PEU) by the users has a significantly positive effect on Intention to continue use of ST based banking services (ICU).	<i>Accepted</i>
H10: The perceived usefulness (PU) by users has a significantly positive effect on intention to continuous use of ST based banking services (ICU).	<i>Not accepted</i>
H11: The perceived playfulness (PP) by users has a significantly positive effect on Intention to continue use of ST based banking services (ICU).	<i>Accepted</i>

Figure 2: Standardized Solution



6. DISCUSSION

Recent literature has characterized ST as an innovation (Li and Bernoff, 2008). However, there are few studies that have examined ST adoption by companies and customers, such as, for example, mobile technologies, social networks, and Web 2.0. We proposed an extended technology acceptance model to analyse the adoption of ST based banking services by users in the Middle East context (Egypt, Jordan, Kuwait, Lebanon, and Saudi Arabia). We used the TRAM model framework and discussed the main variables that affect the results of the ST adoption were discussed in detail. These variables were optimism, innovativeness, discomfort, insecurity, ease of use, usefulness, playfulness and intention to continuous use. From these variables we develop the proposed research model, raising the main hypotheses of research and developing a measurement scale, adapted to the context of application, the study of bank users in five Middle East countries (Egypt, Jordan, Kuwait, Lebanon and Saudi Arabia).

An empirical study in three phases of analysis was carried out. Firstly, a web-based survey, translated to the Arabic language, was conducted to acquire primary information on the perception of the consumers of ST based banking services. TRAM model framework was used, applying various statistical techniques of analysis. A main contribution of our research is the preliminary analysis of the

variables that influence the adoption of ST based banking services by Middle East users, we found that there is relation between the innovativeness and the gender variable, male users in the context of research are more innovative. In addition, we observed that there are differences between countries, according to discomfort, insecurity, and perceived ease of use, perceived usefulness and perceived playfulness. Moreover, we noted that, age has an influence in terms of the innovativeness, perceived playfulness, and intention to continuous use. Finally, we found that education level is related to optimism and innovativeness.

Secondly, another main contribution of our research is related to the fact that personality traits influence individual's intention to continuous use of ST based services, with perceived ease of use as moderator variable, in the Middle East context. This results are consistent with previous research conducted by Yoon and Barker-Steege (2013) and Jin (2013). According to H1, we confirm that positive technology readiness influences positively perceived ease of use of ST based services users. This finding suggests that users with the familiarity and experience with ST are more likely to exhibit the beliefs of perceived ease of use for business-consumer interaction, and therefore, they have more positive attitudes towards interaction. Secondly, we found that the negative technological orientation is negatively associated with the perceived of ease of use of ST based services users (H4).

Therefore, the psychological process that describes the evaluation of user interaction on social platforms businesses can be illustrated in the following manner:

$$TR \rightarrow PEU \rightarrow ICU; TR \rightarrow PEU \rightarrow PP \rightarrow ICU$$

The third main contribution of our research is related to the perceptions and their impact on the intention to continuous use of ST based services. According with our expectations the perceived ease of use by ST based services users has a significantly positive effect on the perceived usefulness (H7) and the perceived ease of use by ST based services users has a significantly positive effect on perception of playfulness (H8). However, contrary with other research conducted in Taiwan about internet banking services (Tsai et al., 2014) in our results perceived ease of use has a significantly positive effect on intention to continue use of ST based services (H9), and perceived ease of use is the most important factor determining intention of continuous use of ST based services. Yiu et al. (2007) support these results. In other hand, perceived playfulness has a significant positive effect on intention to continue use of ST based services (H11). Both findings are supported by previous research conducted by Jin (2003). In our research, perceived usefulness is not an antecedent of ST based services intention to continuous use. Concerning this, some authors argue that the generalizability of TAM-based models can improve with cross-cultural studies or cross-national data. In our case we find different explanation for the intention to continuous use, maybe related with the analysed context,

previous research have been conducted, mainly, in the Anglo and Confusian Cluster and not in the Arabic one.

7. CONCLUSION AND LIMITATIONS

In order to develop ST based services, it is essential to know how to prepare existing present and potential customers for ST based services use and how they would interact with the company using these media. While ST are currently promoted as “miracles”, they cannot provide any advantage for the company without that users being ready to perceive its benefits. When companies are entering ST, they will suddenly find themselves in a domain, which is controlled by consumers. In order to get benefits and facilitate interaction with the target market, companies must use social applications in accordance with the preferences of the users of these applications. If not, customers will ignore the flow of information (Li and Bernoff, 2008).

Our research propose an extended technology acceptance model in order to understand the adoption and the intention to continuous use of ST based banking services by users in the Middle East. We found that socio-demographic variables determine the behaviour of the users, for example, innovativeness is related with gender. In the proposed model we extend the TAM, including the personality traits and the perceived playfulness, for the explanation of the intention to continuous use of ST based banking services.

We confirm that positive technology readiness influences positively perceived ease of use of ST based services. In addition, negative technological orientation is negatively associated with the perceived of ease of use of ST based services. According with our expectations, perceived ease of use has a significantly positive effect on perceived usefulness and has a significantly positive effect on perception of playfulness. Perceived ease of use has a significant positive effect on intention to continue use of ST based services, and is the most important factor determining intention of continuous using of ST based services by users. In other hand, the perceived playfulness by users has a significantly positive effect on intention to continue use of ST based services.

There are a number of limitations and future lines of research that can arise from this paper. Firstly, the results and implications analysed are obtained from a single study on the analysed context, therefore, it has not been possible to compare the results and associate them with other studies that have incorporated other variables. Secondly, it is necessary to extend the sample so that comparatives between different countries of the analysed context could be conducted. Thirdly, in this study, the proposed model has focused on measuring the factors that influence the adoption of ST based services in the context of the Middle East. Even if it is novel, it is advisable to carry out further investigations

that allow a greater contrast in matters related to national culture in other contexts, particularly in comparing the results with Western contexts. Fourthly, despite the attempt to detect the specific constructs of ST based services, there are still problems to resolve. A more open approach on the variables that could improve the explanation of individual differences that preceded the use of ST based services could lead to a more accurate measurement model. For this reason, future studies are recommended, that extend the process initiated by this research, in order to develop measurement tools, which can explain the behaviour of consumers in the development of ST based services.

8. MANAGERIAL RELEVANCE

In Arab countries, 93 per cent of the internet users visit social networking sites and they spend between 2 and 4 hours using these services. In the region, Bahrain, Egypt, Jordan, Saudi Arabia, Lebanon, Qatar, Tunisia and the United Arab Emirates, the most relevant ST is Facebook, with the 94% of the users (Dennis et al., 2013). The ST adoption in Middle East is increasing the electronic commerce phenomena in general in the region, 26 per cent of internet users purchase a product after they see it on a social networking site (Global Customer Acquisition, 2013). Our study offer practitioners, especially bankers, new insight about the adoption of ST based services by users. In this research, we have collected and analyzed the socio-demographic characteristics of Middle East ST based services users. In this context, for example, male users are more innovative. In addition, it was observed that there are differences between countries, according to discomfort, insecurity, perceived ease of use, perceived usefulness, and perceived playfulness. Moreover, we noted that, age has an influence in terms of the innovativeness, perceived playfulness, and intention to continuous use. Finally, education level is related to optimism and innovativeness. Therefore, companies have to adapt their social platforms to the different users.

In general terms, to successfully manage their ST based services, banks in the Middle East have to paid attention to innovativeness and insecurity, and they have to consider specially this aspect in the design of ST based banking services. We have also identified the significant importance of perceived ease of use and the role of perceived playfulness. The results of our research show the importance of Middle East users of having fun and the ease of use of ST based services. Finally, the information is valuable to help the financial companies to adapt their ST based services to the Middle Eastern market.

9. REFERENCES

Accenture, 2011. Banking in the Gulf Cooperation Council in 2015. Embracing and Leveraging Change. Retrieved from: <http://www.accenture.com/gccbanking>, (acceded at: 08-03-2014).

- Afifi, A., y Clark, V. 1996. *Computer-Aided Multivariate Analysis*. Third Edition. Texts in Statistical Science. Chapman and Hall.
- Ajjan, H., y Hartshorne, R. 2008. Investigating faculty decision to adopt Web 2.0 technologies: Theory and empirical tests. *Internet and Higher Education*, 11, 71–80.
- Al-Gahtani, S. S., Hubona, G. S., y Wang, J. 2007. Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, 44(8), 681-691.
- Al-Somali, S. A., Gholami, R., y Clegg, B. 2009. An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(2), 130-141.
- Auger, P., Devinney, T., Louviere, J., y Burke, P. 2010. The importance of social product attributes in consumer purchasing decisions: A multi-country comparative study. *International Business Review*, 19(2), 140-159.
- Barron, A., y Schneckenberg, D. 2012. A theoretical framework for exploring the influence of national culture on Web 2.0 adoption in corporate contexts. *The Electronic Journal Information Systems Evaluation*, 15(2), 176-186.
- Berthon, P., Pitt, L., Plangger, K., y Shapiro, D. 2012. Marketing meets Web 2.0, social media, and creative consumers: implications for international marketing strategy. *Business Horizons*, 55, 261-271
- Bruner, G., y Kumar, A. 2005. Explaining consumer acceptance of hand held internet Devices. *Journal of Business Research*, 8(5), 553–558.
- Chen, S., Yen, D., y Hwang, M. 2012. Factors influencing the continuance intention to the usage of Web 2.0: An empirical study. *Computers in Human Behavior*, 28, 933–941.
- Chua, A., y Goh, D. 2010. A study of Web 2.0 applications in library websites. *Library & Information Science Research*, 32, 203–211.
- Chui, M., Manyika, J., Bughin, J., Dobbs, R., Roxburg, C., Sarrazin, H., Sands, G., y Westergren, M. 2012. *The social economy: Unlocking value and productivity through social technology*. McKinsey Global Institute.
- Constanitnides, E., Fountain, S. 2008. Special issue papers: Web 2.0, Conceptual foundations and marketing issues. *Journal of Direct Data and Digital Marketing Practice*, 9 (3), 231-244.
- Corrocher, N. 2011. The adoption of Web 2.0 services: An empirical investigation. *Technological Forecasting & Social Change*, 78, 547-558.
- Cromer, C. 2010. Understanding Web 2.0's influences on public e-services: A protection motivation perspective. *Innovation: management, policy & practice*, 12, 192–205.
- Danis, W., De-Clercq, D., y Petricevic, O. 2011. Are social networks more important for new business activity in emerging than developed economies? An empirical extension. *International Business Review*, 20, 394–408.
- Daud, M., y Zakaria, E. 2012. Web 2.0 application to cultivate creativity in ICT literacy. *Procedia - Social and Behavioral Sciences*, 59, 459 – 466.

- Davis, F. 1986. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F., Bagozzi, R., y Warshaw, P. 1989. User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35, 982-1003.
- Dennis, E. E., Martin, J. D., y Wood, R. 2013. Media Use in the Middle East. An Eight-Nation Survey. Northwestern University in Qatar. Retrieved from: <http://menamediasurvey.northwestern.edu/>, (accessed at: 08-02-2014).
- El-Haddadeh, R., Weerakkody, V., y Peng, J. 2012. Social networking services adoption in corporate communication: the case of China. *Journal of Enterprise Information Management*, 25 (6), 559-575.
- Everitt, B. y Dunn, G. 1991. *Applied Multivariate Data Analysis*. Edward Arnold.
- Garrigos-Simon, F., Lapiedra-Alcamí, R., y Barberá-Ribera, T. 2012. Social networks and Web 3.0: their impact on the management and marketing of organizations. *Management Decision*, 50(10), 1880 – 1890.
- Global Customer Acquisition, 2013. Internet Marketing and Lead Generation in Kuwait. retrieved from: <http://www.mvfglobal.com/kuwait> (accessed at: 12-9-2013).
- Hair, J., Anderson, R., Tatham, R., y Black, W. 1999. *Multivariate analysis*. Prentice Hall.
- Hinz, O., Schulze, C., y Takac, C. 2014. New product adoption in social networks: Why direction matters. *Journal of Business Research*, 67, 2836-2844.
- Hossain, L., y de-Silva, A. 2009. Exploring user acceptance of technology using social networks. *Journal of High Technology Management Research*, 20, 1–18.
- Hsu, C., y Lin, C. 2008. Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management*, 45(1), 65–74.
- Huysman, M., y Wulf, V. 2004. *Social capital and information technology*. MIT Press, Cambridge, MA.
- Jackson, J., Yi, M., y Park, J. 2013. An empirical test of three mediation models for the relationship between personal innovativeness and user acceptance of technology. *Information and Management*, 50, 154-161.
- Jarrahi, M., y Sawyer, S. 2013. Social Technologies, Informal Knowledge Practices, and the Enterprise. *Journal of Organizational Computing and Electronic Commerce*, 23(1-2), 110-137.
- Jin, C. 2013. The perspective of a revised TRAM on social capital building: The case of Facebook usage. *Information & Management*, 50, 162–168.
- Joo, J. 2011. Adoption of Semantic Web from the perspective of technology innovation: A grounded theory approach. *International Journal of Human-Computer Studies*, 69, 139–154.
- Kaplan, A., y Haenlein M. 2010. Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.

- Kietzmann, J., Hermkens, K., McCarthy, I., y Silvestre, B. 2011. Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54, 241—251.
- Kline, R. 1998. *Principles and Practice of Structural Equation Modeling*. The Guilford Press.
- Laroche, M., Habibi, M., y Richard, M. 2013. To be or not to be in social media: How brand loyalty is affected by social media?. *International Journal of Information Management*, 33, 76– 82.
- Li, C., y Bernoff, J. 2008. *The groundswell: Winning in a world transformed by social technologies*. Boston: Harvard Business Press.
- Lin, C., Shih, H., y Sher, P. 2007. Integrating Technology Readiness into Technology Acceptance: The TRAM Model. *Psychology & Marketing*, 24(7), 641–657.
- Lu, J., Yao, J., y Yu, C. 2005. Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. *Journal of Strategic Information Systems*, 14, 245–26.
- Markham, T. 2014. Social media, protest cultures and political subjectivities of the Arab spring. *Media, Culture & Society*, 36(1), 89-104.
- Michaelidou, N., Sigamagka, N., y Christodoulides, G. 2011. Usage, barriers and measurement of social media marketing: An exploratory investigation of small and medium B2B brands. *Industrial Marketing Management*, 40, 1153-1159.
- Nugultham, K. 2012. Using web 2.0 for Innovation and Information Technology in Education Course. *Procedia - Social and Behavioral Sciences*, 46, 4607 – 4610.
- O'Reilly, T., y Battelle, J. 2009. *Web Squared: Web 2.0 Five Years On*. Retrieved from: http://assets.en.oreilly.com/1/event/28/Web2009_Websquared-whitepaper.pdf, (acceded at: 23-07-2013).
- Obson, J. 1992. *Applied Multivariate Data Analysis. Volume II: Categorical and Multivariate Methods*. Springer-Verlag.
- Oh, K., Cruickshank, D., y Anderson, A. 2009. The adoption of e-trade innovations by Korean small and medium sized firms. *Technovation*, 29, 110–121.
- Padilla-Meléndez, A., del-Águila-Obra, A., y Garrido-Moreno, A. 2013. Perceived playfulness, gender differences and technology acceptance model in a blended learning scenario. *Computers & Education*, 63, 306–317.
- Pai, P., y Arnott, D. 2012. User adoption of social networking sites: Eliciting uses and gratifications through a means–end approach. *Computers in Human Behavior*, 29, 1039-1053.
- Parasuraman, A. 2000. Technology Readiness Index (TRI): A Multiple-Item Scale to Measure Readiness to Embrace New Technologies. *Journal of Service Research*, 2, 307-320.
- Pavlou, P. 2003. Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, 7, 101-134.
- Ramadani, B., y Rajwani, T. 2010, Enterprise 2.0: The case of British Telecom. *Journal of Strategic Management Education*, 6(2), 135-148.

- Reich, B., y Benbasat, I. 2000. Factors that influence the social dimension of alignment between business and information technology objectives. *MIS Quarterly* 24 (1), 81–113.
- Rouibah, K., Abbas, H., y Rouibah, S. 2011. Factors affecting camera mobile phone adoption before e-shopping in the Arab world. *Technology in Society*, 33(3), 271-283.
- Satorra, A., y Bentler, P. 2001. A scaled difference chi square test statistic for moment structure analysis. *Psychometrika*, 66(4), 507-514
- Schlagwein, D., y Prasarnphanich, P. 2014. Organizational Social Media around the GLOBE. *Journal of Organizational Computing and Electronic Commerce*, DOI: 10.1080/10919392.2014.896713
- Standing, C., y Kiniti, S. 2011. How can organizations use wikis for innovation?. *Technovation*, 31, 287–295.
- Taylor, S., y Todd, P. 1995. Understanding Information Technology Usage: a Test of Competing Models. *Information Systems Research*, 6(2), 144-174.
- Terence, J. V.; Saldanha, y Krishnan, M.S. 2012. Organizational Adoption of Web 2.0 Technologies: An Empirical Analysis, *Journal of Organizational Computing and Electronic Commerce*, 22(4), 301-333.
- Tsai, H. T., Chien, J. L., y Tsai, M. T. 2014. The influences of system usability and user satisfaction on continued Internet banking services usage intention: empirical evidence from Taiwan. *Electronic Commerce Research*, 1-33.
- Venkatesh, V. 2000. Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model. *Information Systems Research*, 11, 343-65.
- Venkatesh, V., Morris, M., Davis, G., y Davis, F. 2003. User acceptance of information: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Wang, Y., Wang, Y., Lin, H., y Tang, T. 2003. Determinants of User Acceptance of Internet Banking: An Empirical Study. *International Journal of Service Industry Management*, 14, 501 – 519.
- Yiu, C. S., Grant, K., y Edgar, D. 2007. Factors affecting the adoption of Internet Banking in Hong Kong—implications for the banking sector. *International Journal of Information Management*, 27(5), 336-351.
- Yoon, H. S., y Barker-Steege, L. M. 2013. Development of a quantitative model of the impact of customers' personality and perceptions on Internet banking use. *Computers in Human Behavior*, 29(3), 1133-1141.
- Zhang, N. 2011. The role of Web 2.0 applications on niche culture diffusion: An empirical study on the influence of online forums on fans of rock music. *Online Information Review*, 35 (5), 734-746.