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Exploring the Influence of Price and Convenience on Perceived Usefulness of On-line Banking within the TAM Framework: A Cross National (Canada and Spain) Decision Model

Jean-Pierre Maxime Lévy Mangin[1*], Mario Martínez Guerrero[2], Normand Bourgault[1] & José Manuel Ortega Egea[2]

[1] Université du Québec en Outaouais, Québec, Canada

[2] Universidad de Almería, Facultad de CCEE and Cajamar, Almeria, Spain

* Jean-Pierre Maxime Lévy Mangin, E-mail: jean-pierre.levy-mangin@uqo.ca

Abstract

Nowadays, the Internet is a powerful mean to complement the traditional marketing channels used by banks. Based on the Technology Acceptance Model, this paper explores the importance of two external latent variables—'Price' and 'Convenience'—as antecedents of 'Perceived Usefulness' and consumer acceptance of on-line banking in a Canadian and Spanish environment; the results highlight the predictive power and accuracy of the model cross-nationally. In fact, the findings were quite similar in the Canadian and Spanish samples, and stress that 'Perceived Usefulness' and 'Attitude' are the key drivers of the consumers' on-line banking acceptance. Conclusions and recommendations for future research are also provided.

Keywords

technology acceptance nodel, Internet, on-line banking, 'Perceived Usefulness', Structural Equation Modeling, Canada, Spain, financial services

1. Introduction

Substantial changes are taking place in the distribution of financial services in North America and Europe; this situation has been triggered by banks' necessity to reduce costs, increase revenues and sales, and improve the quality of service, thus finding new ways of doing business. The growing use of e-banking stands out as the most significant innovation in banking distribution over the past decade. On-line banking allows customers to access information and perform many banking operations (except cash transactions) through the Internet (Lallmahamood, 2007; Mukherjee and Nath, 2003). The financial services afforded by Internet banking include checking transactions and account balances in real time, paying bills, transferring funds, buying and selling stocks, purchasing different kinds of

insurances, among others (Ainin, Lim and Wee, 2005; Gerrard and Cunningham, 2003; Polatoglu and Ekin, 2001).

This research pretends to confirm the Technology Acceptance Model (Mathieson, K, 1991; Davis, Bagozzi and Warshaw, 1989; Davis, F, D, 1989) applied to the adoption of financial banking services offered on-line by Internet in two different settings Canada and Spain.

In a virtual environment there are two major factors to take into account when doing business: they are the risk of transactions first and the confidence that customers could give to a virtual address. Customers that do not feel confident about a virtual address will not be loyal and will not make business with the bank even if they are satisfied with it (Lee, Kwon and Schumann, 2005; Gerrard and Cunningham, 2003; Anderson and Srinivasan, 2003).

The purpose of this research is to analyze the adoption of the on-line banking services among Canadians and Spaniards based on the Technology Acceptance Model[i] (TAM)) and the influence of the external latent variables 'Price' and 'Convenience' on the TAM latent dependent variable 'Perceived Usefulness'.

These external latent variables are very important and many authors think they should be added to the TAM Model; as the matter of fact, we will add them as external variables to the core TAM Model and test them comparatively in a North American and a European environment, particularly in both the Canadian and the Spanish financial environments.

2. Theoretical Background

2.1 The TAM Model Latent Variables

Ease of Use

The latent variable 'Ease of Use' is very important to accessing an information system because it is the facilitator of system use (Davis, Bagozzi and Warshaw, 1989). The perceived 'Ease of Use' refers to the degree in which the future user thinks that the system use will be free of effort. A difficult system to use will be perceived as less useful by user and probably will be abandoned (Davis, 1989) by the user.

All researches offer evidence of significant effects of 'Ease of Use' perception on 'Intention to Use' directly or indirectly through 'Perceived Usefulness' and 'Attitude towards Using' (Venkatesh and Bala, 2008; Wixom and Todd, 2005; Moon and Kim, 2001; Venkatesh and Morris, 2000). 'Ease of Use is a crucial factor for adopting and using services of banking on line (Gounaris and Koritos, 2008; Amin, 2007; Rigopoulos and Askounis, 2007). See hypothesis H1.

Perceived Usefulness

The TAM model is based on the Theory of Reasoned Action (TRA, Ajzen and Fishbein, 1975; Fishbein and Ajzen, 1980) that seeks explain behaviour and the intention of using a technology as well as factors that influence the user. The behaviour intention is determined by 'Perceived Usefulness' influenced by the technology 'Ease of Use' and the attitude by using this technology. The 'Perceived Usefulness' is defined as the subjective probability that user will increase its productivity using a specific application

in its work, this application will help them to do a better and more efficient job (Davis, Bagozzi and Warshaw, 1989).

See hypothesis H1.

Attitude towards Using

This latent variable is defined as the individual feeling towards behaviour objectives and realizations, it is a positive or negative feeling' evaluation. Nevertheless the bank customer's attitude towards new bank technologies has been extensively analysed by researches because this determines which people are more able to adopt new electronic channels (McKechnie, Winklhofer and Ennew, 2006; Al Sukkar and Hassan, 2005). It has been demonstrated that user attitude has a strong effect, direct and positive, on the real consumer intentions for using a new system or technology (Bobbitt and Dabholkar, 2001; Dishaw and Strong, 1999; Venkatesh and Davis, 1996). In conclusion, customers with a more positive attitude to new technologies will be more motivated to using new bank on line products and its financial services (Guerrero, Egea and Gonzalez, 2007).

See hypothesis H2.

Intention to Use

The Theory of Reasoned Action (TRA) as well as the TAM model says that technology use is determined by the intention to have a particular behaviour, the intention to use a technology. The behaviour towards using a technology could be predicted measuring the intention and other factors influencing the user behaviour (Davis, Bagozzi and Warshaw, 1989). In the on-line banking context some authors confirm that there is a significant relation between 'Intention to Use' and the real use of banking operations by Internet (Walker and Johnson, 2006).

See hypothesis H3.

2.2 The External Latent Variables to the TAM Model

Price

Customers appear to conclude that they could obtain better prices using the Internet than going to the bank (Karjaluoto, Mattila and Pento, 2002; Sathye, 1999) due to the harsh competition between traditional banks outlets (Román González and Martinez Guerrero, 2004). There is a very stiff competition among bank offers of virtual financial services in Spain but that is not the case in Canada where there are only five major banks, all of them displaying on-line banking services as a complement to the services offered at the branch. In Canada, customers are clearly split on concluding that on- line banking permits them to save on the cost of their traditional financial operations. In other major countries customers are clearly solicited by the Internet and the prices of such services are very much competitive. Actually due to the financial crisis in Europe and particularly in Spain, banks have seen the mortgage business decrease for that reason and for maintaining their profits they have substantially increased all bank fees to the second most high banking fees ranking in all European Union after Italy (El Mundo, 27 de Agosto de 2011 and 30 de Agosto de 2011, http://www.elmundo.es/elmundo/2011/08/31/suvivienda/1314783031.html

and http://www.elmundo.es/elmundo/2011/08/29/suvivienda/1314601668.html , 'El Euribor aprieta un poco mas el cinturón de los hipotecados', 'La sequía de hipotecas se agrava: Nuevo desplome del 42%'). It seems that an increased part of the population prefer to develop business with banks offering less fees and consider to consult mortgages offered by Internet, this should be more the case in Spain than in Canada.

See hypothesis H4.

Convenience

Many customers think that to do business at the branch takes too much time and efforts (Pikksrainen, Pikksrainen, Karjaluotoy, Pahnila, 2004), the 'convenience' is an advantage that customers associate with on-line banking (Karjaluoto, Mattila and Pento, 2002) and appreciated by them (Lee, Kwon and Schumann, 2005; Sarel and Marmorstein, 2003). Canadian customers agree overwhelmingly with this affirmation, particularly when it comes to negotiating services that minimize future surprises. In Canada only written agreements have a legal force, and this is not completely the situation in Spain where, actually, due to the financial crisis, many decentralized decisions concerning bank fees are being reversed and traditional roles of bank headquarters functions are being reinstated.

See hypothesis H5.

3. Methodology

3.1 The Questionnaire

For Canada, the survey was conducted in a metropolitan area of the Quebec province and the total of useful responses for analysis purposes were 225.

For Spain, questionnaires have been sent out by mail and 205 of them gave useful responses.

The questionnaire is divided in 48 questions directly related to bank operations

Conducted on the Internet and 10 general questions related to gender; age; level of education; social and personal questions; questions directly related to using Internet and general questions related to Internet and banking services. All respondents are at least 18 years old, have a bank account and conduct many bank operations using the Internet.

Table 1. Sample Description

Country	Canada	Spain
Universe	People using Internet for bank operations	Active people having a bank account and using Internet for bank operations
Sample	People with a bank account using on line banking services	People with a bank account using on line banking services
Regional Area	Ottawa-Gatineau area	Whole Spain

Data Collect Method	Direct questionnaire	Mail questionnaire
Sample Size	225 useful respondents	205 useful respondents
Collection Period	September-November 2010	2007-2008

Table 2 shows the four TAM model latent variables 'Ease of Use', 'Perceived Usefulness', 'Attitude towards Using' and 'Intention to Use', three external latent variables 'Convenience' and 'Price' used in our model, as well as the observed variables (items) explaining the latent variables all measured on a five points Likert Scale ranging from 'not agree at all' to 'completely agree'. The items or observed variables are just a part from a more extended questionnaire; these items have been directly adapted from the referenced literature and from the authors mentioned in the table 2. We used multi-item scales adapted to the suitability of the research, the questionnaire was translated and used in French, English and Spanish and also prior confirmatory factor analyses were also performed for the two countries. Some items were deleted on substantive and statistical grounds (Anderson and Gerbing 1988), as the result only 17 items remained but all very significant for $p<0.000$.

Table 2. Items in the Questionnaire

Items in the questionnaire	
Items (in English, French and Spanish)	**Adapted from**
Attitude towards using	
Q5. Using on-line banking is a good idea. *Utiliser les services bancaires par Internet est une bonne idée. Utilizar la banca por Internet es una buena idea.*	(Chau y Hu, 2002; Klopping y McKinney, 2004; Morris and Venkatesh, 2000; O'Cass y Fenech, 2003; Reid y Levy, 2008; Robinson, Marshall y Stamps, 2005)
Q6. Generally, I have a positive attitude on using on-line banking. *En général, mon attitude sur l'usage des services bancaires par Internet est positive. En general mi actitud hacia el uso de la banca por Internet es positiva.*	(Lu y Lin, 2002)
Convenience	
Q18. I like the idea of doing banking business by Internet because time- tables are flexible. *J'aime l'idée de réaliser des opérations bancaires par Internet car les horaires ne sont pas limités. Me gusta la idea de realizar operaciones bancarias a traves de Internet porque no estèa limitado a los horarios.*	(Parasuraman and Colby, 2001)
Q19. I can do my bank operations from anywhere with	(Parasuraman and Colby, 2001)

an Internet connection. *Avec une connexion, Internet me permet de faire de réaliser des opérations bancaires depuis n'importe où. La banca por Internet me permite realizar operaciones desde cualquier lugar con conexión a Internet.*	
Ease of Use	
Q24. It is very easy to work with on-line banking services. *Il est facile que les services bancaires fassent ce que je désire qu'ils fassent.Es fácil conseguir que la banca por Internet haga lo que yo quiero que haga*.	(Agarwal and Prasad, 1998; Chan and Lu, 2004; Chen, Gillenson y Sherrell, 2002; Davis, 1989; Pikkarainen, Pikkarainen, Karjaluoto and Pahnila, 2004; Robinson, Marshall and Stamps, 2005; Venkatesh, 2000; Venkatesh and Bala, 2008; Venkatesh and Davis, 1996, 2000; Venkatesh and Morris, 2000; Venkatesh, Speier y Morris, 2002)
Q25. On-line banking services are clear and easy to understand. *Les services bancaires par Internet sont clairs et compréhensibles. La banca por Internet es clara y comprensible.*	(Agarwal y Prasad, 1998; Chen, Gillenson and Sherrell, 2002; Davis, 1989; Pavlou, 2003; Pikkarainen, Pikkarainen, Karjaluoto and Pahnila, 2004; Reid and Levy, 2008; Robinson, Marshall and Stamps, 2005; Venkatesh, 2000; Venkatesh and Bala, 2008; Venkatesh and Davis, 1996, 2000; Venkatesh and Morris, 2000; Venkatesh, Speier and Morris, 2002; Wang, Wang, Lin and Tang, 2003)
Q26. On-line banking services are easy to use. *Les services bancaires par Internet sont d'un usage facile. La banca por Internet es fácil de usar.*	(Brown, Hoppe, Mugera, Newman and Stander, 2004; Chan and Lu, 2004; Chen, Gillenson and Sherrell, 2002; Davis, 1989; O'Cass and Fenech, 2003; Pavlou, 2003; Pikkarainen, Pikkarainen, Karjaluoto and Pahnila, 2004; Robinson, Marshall and Stamps, 2005; Venkatesh and Bala, 2008; Venkatesh and Davis, 1996, 2000; Venkatesh and Morris, 2000; Venkatesh, Speier and Morris, 2002; Wang, Wang, Lin and Tang, 2003)

Intention to use	
Q31. if I have access, I will use on-line banking services. *Si j'avais accès aux services bancaires par Internet je les utiliserais. Si tuviera acceso a la banca por Internet la utilizaría.*	(Agarwal and Prasad, 1998; Chen, Gillenson and Sherrell, 2002; Pavlou, 2003; Robinson, Marshall and Stamps, 2005; Venkatesh, 2000; Venkatesh and Davis, 1996, 2000; Venkatesh and Morris, 2000; Venkatesh, Speier and Morris, 2002; Wang, Wang, Lin and Tang, 2003)
Q32. I prefer to use the on-line banking financial services instead to do them at the branch. *Je veux utiliser les services bancaires par Internet plutôt que d'effectuer mes opérations au comptoir de la banque. Quiero usar la banca por Internet para realizar mis operaciones bancarias.*	(Agarwal y Prasad, 1998)
Q33. In the future I have the intention to increase using the on-line banking system. *J'ai l'intention dans l'avenir d'augmenter mon usage des services bancaires par Internet. Tengo la intención de aumentar el uso de la banca por Internet en el futuro.*	(Chau y Hu, 2002; Lu and Lin, 2002; Pavlou, 2003; Reid and Levy, 2008; Wang, Wang, Lin and Tang, 2003)
Price	
Q36. Financial operations made at the branch are more expensive than those made through the on-line banking system. *Les opérations effectuées au comptoir de la banque sont plus coûteuses que celles des services bancaires par Internet. Las operaciones bancarias realizadas en la oficina son mas costosas que si las hago por Internet.*	(Akinci, Aksoy and Atilgan, 2004)
Q37. Using the on-line banking system allows me to save money. *L'usage des services bancaires par Internet me permet d'économiser de l'argent. El uso de la banca por Internet me permite ahorrar dinero.*	(Chen,Gillenson, and Sherrell, 2002)
Q38. Thanks to on-line banking I can get better financial conditions than at the branch. *Grâce aux services bancaires par Internet j'obtiens de meilleures conditions financières qu'à la banque. Mediante la banca por Internet consigo mejores condiciones*	(Chen,Gillenson, and Sherrell, 2002)

financieras que en la oficina.	
Perceived Usefulness	
Q45. You save time when doing financial operations by on-line banking. *Effectuer des opérations bancaires par Internet permet d'économiser du temps. Realizar las operaciones bancarias por Internet permite ahorrar tiempo.*	(Chen, Gillenson y Sherrell, 2002; Davis, 1989)
Q46. Financial services offered on-line are useful. *Je trouve que les services bancaires offerts sur Internet sont utiles. Encuentro útil la banca por Internet.*	(Brown, Hoppe, Mugera, Newman and Stander, 2004; Chau and Hu, 2002; Chen, Gillenson and Sherrell, 2002; Davis, 1989; Klopping and McKinney, 2004; O'Cass and Fenech, 2003; Pavlou, 2003; Reid and Levy, 2008; Robinson, Marshall and Stamps, 2005; Venkatesh, 2000; Venkatesh and Bala, 2008; Venkatesh and Davis, 1996, 2000; Venkatesh and Morris, 2000; Venkatesh, Speier and Morris, 2002; Wang, Wang, Lin and Tang, 2003)
Q47. The on-line banking allows me to manage my finance accounts and operations more efficiently. *Les services bancaires par Internet me permettent de gérer mes finances plus efficacement. La banca por Internet me permite gestionar mis finanzas mas eficazmente.*	(Agarwal and Prasad, 1998; Brown, Hoppe, Mugera, Newman and Stander, 2004; Chan and Lu, 2004; Chau and Hu, 2002; Chen, Gillenson and Sherrell, 2002; Davis, 1989; O'Cass and Fenech, 2003; Pikkarainen, Pikkarainen, Karjaluoto and Pahnila, 2004; Reid and Levy, 2008; Robinson, Marshall and Stamps, 2005; Venkatesh, 2000; Venkatesh and Bala, 2008; Venkatesh and Davis, 2000; Venkatesh and Morris, 2000; Venkatesh, Speier and Morris, 2002)
Q48. Most of bank operations I need are available on on-line banking. *La plupart des opérations bancaires que j'ai besoin d'effectuer sont disponibles en services bancaires par Internet. La mayoría de las operaciones bancarias que necesito realizar estan disponibles en la banca por Internet.*	(Akinci, Aksoy and Atilgan, 2004)

The same model is analyzed for Canada and Spain using Structural Equation Modeling; the original TAM model presents four latent variables, the 'Ease of Use', the 'Perceived Usefulness' using Internet for banking operations, 'Attitude towards Use' of Internet for banking operations and the 'Intention of use'; we added two external latent variables 'Price', and 'Convenience' that remained as the only significant external variables from a model tested originally in Spain with 'convenience, price, social norms, image, results quality, results evidence and compatibility' (Martinez Guerrero, 2011)

4. The Validation of Scales

The scales of measure used in this research comply with all psychometric criteria established in the literature; in the TAM model, the latent variable 'Ease of Use' has been measured by three items, 'Perceived Usefulness' by four items, 'Attitude towards Use' by two items and the 'Intention of Use' by three items. As stated before, we added two external latent variables or dimensions, 'Price' measured by three items, 'convenience' represented by two items. Each item has been measured in a five points' scale ranging from 'not agree at all' to 'completely agree'.

Before analyzing convergent and discriminant validity we proceeded to perform a confirmatory factor analysis (Table 3) with those latent variables showed in figure 1. We kept only those loadings superior to 0.60 (Hair *et al*., 1999; Bagozzi and Baumgartner, 1994; Bagozzi and Yi, 1988).

Table 3. Comparative factor Loadings for Canada and Spain

Constructs	Items in the questionnaire	Loadings		T Values	
		Canada	Spain	Canada	Spain
Attitude towards Using	Q5	0.883	0.765	17.991	-
	Q6	0.896	0.867	-	8.409
Convenience	Q18	1	1	-	-
	Q19	0.702	0.639	12.580	7.059
Ease of Use	Q24	0.664	0.812	-	11.934
	Q25	0.862	0.933	9.459	14.017
	Q26	0.756	0.843	9.178	-
Intention to Use	Q31	0.730	0.827	-	-
	Q32	0.780	0.759	10.426	11.096
	Q33	0.744	0.773	10.037	11.567
Price	Q36	0.746	0.861	-	-
	Q37	0.849	0.901	9.740	11.096
	Q38	0.683	-	9.135	-
Perceived Usefulness	Q45	0.725	0.600	-	5.484
	Q46	0.850	0.825	12.127	-
	Q47	0.740	0.715	19.566	10.304

These tables allow us to confirm that the Critical ratios or Student T tests are very significant for $p<0.05$ ($T > 1.96$) and there is a significant convergent validity between the observed and the latent variables of the model.

The next stage will evaluate discriminant validity to identify the specificity of each factor (or latent variable); for this reason correlations between factors should not be superior to the 0.80 values. Also correlations between constructs should not be superior to each AVE square root construct. They are two exceptions for both countries, correlations between 'Perceive Usefulness' (PU) and 'Attitude towards Using' (AU) (0.814 and 0.864 for Canada and Spain) and with 'Intention to Use' (0.841 and 0.839) as well as 'Attitude towards Using' (AU) and 'Intention to Use' (IU) (0.879 for Spain) which do not respect these criteria. Usually the square root of the average variance extrated (AVE) should be superior to the correlation between latent variables (Fornell and Larcker, 1981). In conclusion we can say that there is substantial suspicion of lack of discriminant validity between 'Perceived Usefulness' and 'Attitude towards Using' and 'Intention to Use' for both Canada and Spain (see table 4).

Table 4. Correlations between Latent Variables for the TAM Models (Canada and Spain): In diagonals the AVE square roots

CANADA						
Latent Variables	**EU** **Ease of Use**	**PU** **Perceived Usefulness**	**AU** **Attitude towards Using**	**IU** **Intention to Use**	**Price**	**Convenience**
EU	**0.761**					
PU	0.688	**0.784**				
AU	0.646	0.814	**0.915**			
IU	0.648	0.841	0.828	**0.772**		
Price	0.271	0.395	0.283	0.464	**0.571**	
Convenience	0.508	0.747	0.723	0.715	0.280	**0.560**
SPAIN						
Latent Variables	**EU** **Ease of Use**	**PU** **Perceived Usefulness**	**AU** **Attitude towards Using**	**IU** **Intention to Use**	**Price**	**Convenience**
EU	**0.865**					
PU	0.749	**0.804**				
AU	0.683	0.864	**0.865**			
IU	0.651	0.839	0.879	**0.828**		
Price	0.368	0.431	0.368	0.416	**0.884**	
Convenience	0.646	0.852	0.944	0.879	0.372	**0.839**

The AVE figures in table 5 represent the average variance extracted for each latent variable, they are superior to 0.50, which is usually recommended and accepted (Fornell and Larcker, 1981). The reliability measures are superior to 0.70 (with exception of 'Convenience' for Canada), which means that the instrument is reliable.

Table 5. Reliability Measures and Average Variances Extracted

Latent Variables	**Reliability**		**AVE**	
Country	**Canada**	**Spain**	**Canada**	**Spain**
EU	0.805	0.899	0.580	0.748
PU	0.862	0.843	0.615	0.646
AU	0.918	0.856	0.839	0.748
IU	0.816	0.867	0.596	0.685
Price	0.805	0.831	0.571	0.781
Convenience	0.673	0.769	0.560	0.701

Traditional criteria were used to analyze measurement reliability and validity, Average Variance Extracted measures provided evidence of reliability measurement (Fornell and Larcker 1981; Nunnally and Bernstein, 1994). The reliability analysis shows satisfactory results for the latent variables, which are significant and superior to 0.70 (except for 'Convenience').

5. The Tam Model

Many versions of the TAM model have been used in different settings; here we will adapt the general model for the banking services offered on line. The actual technology seems particularly suitable to Internet operations for banking services (see figure 1). As stated before we added two external latent variables to the traditional TAM Model: 'Price' and 'Convenience' then, we will test the next set of hypothesis:

Hypothesis related to the TAM Model

H1. There is a significant positive relationship between the 'Ease of Use' and the 'Perceived Usefulness' of banking by Internet.

H2. There is a significant positive relationship between the 'Perceived Usefulness' and 'Attitude towards Using' Internet for banking.

H3. There is a significant positive relationship between 'Attitude towards Using' and 'Intention to Use' banking by Internet.

Hypothesis involving external variables

H4. There is a significant positive relationship between 'Price' and 'Perceived Usefulness'.

H5. There is a significant positive relationship between 'Convenience' and 'Perceived Usefulness'.

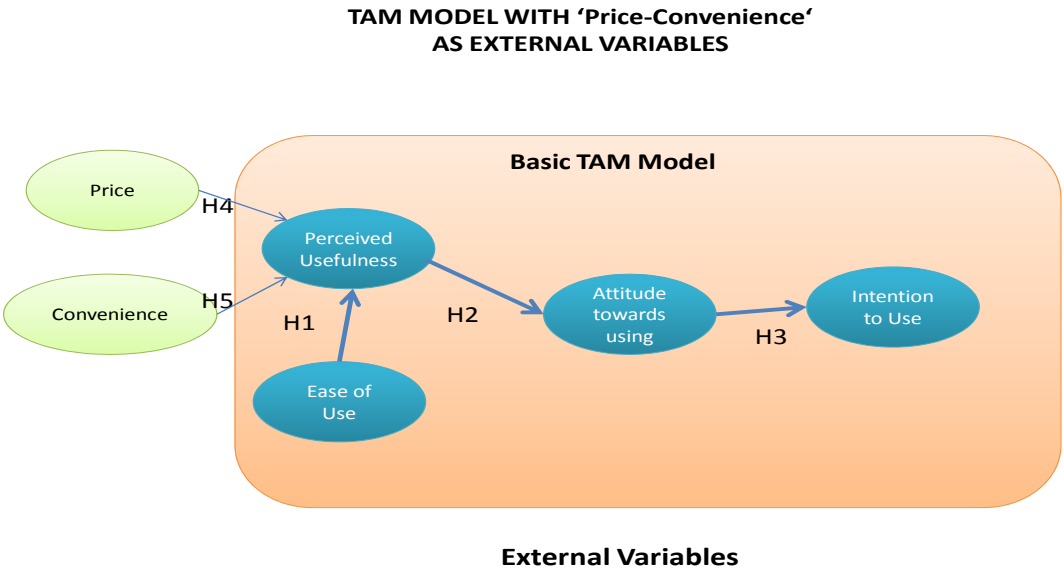

Figure 1. TAM Model and External variables hypotheses

5.1 Results: The TAM Structural Model

The TAM structural model applied to on-line banking for services offered in Internet in Canada and in Spain are highly significant. Table 6 shows that the Comparative Fit Index of the global model is superior to 0.90 as well as the Incremental Fit Index, the RMSEA is inferior to 0.09 and the confidence interval ranges from 0.069 to 0.09, which is highly acceptable.

Table 6. Fit Indices for the TAM Model with External Variables

Country	Chi-Square	Degrees of Freedom	Probability	NFI	IFI	CFI	TLI	RMSEA
Canada	274.776	87	0.000	0.876	0.917	0.916	0.884	0.089
Spain	205.298	86	0.000	0.877	0.925	0.924	0.886	0.088

The TAM model has also a strong prediction capability. All R^2 (or explained variances) displayed in Table 7 are superior to 0.60; for the variable 'Perceived Usefulness' the prediction strength increases with the introduction of two external variables 'Price' and 'Convenience'; comparing with the TAM basic model, the prediction increases 0.206 for 'Perceived Usefulness', and it remains stable with a slight decrease for the two other latent variables.

Table 7. Capability of Prediction for the TAM model with External Variables

Country	Latent Variables	Perceived Usefulness	Attitude towards Using	Intention to Use
Canada	**R^2 for the TAM Model with external variables**	0.691	0.742	0.721
Spain	**R^2 for the TAM Model with external variables**	0.851	0.907	0.845

5.2 Regression Weights and Measurement Model

Table 9 shows the standardized estimates for all relationships between latent variables of the structural model as well as loadings for all items on latent variables. All standardized regression weights are significant for $p<0.05$ (Student T or Critical Ratios are >1.96).

Table 8. Standardized Regression Weights for the TAM Model

			Canada	Spain
Perceived Usefulness	<---	Easy of Use	.414	.366
Perceived Usefulness	<---	Price	.167	.130
Perceived Usefulness	<---	Convenience	.655	.837
Attitude towards using	<---	Perceived Usefulness	.862	.935
Intention to use	<---	Attitude towards using	.849	.919

6. Hypotheses Testing and Discussion

6.1 Hypot

heses Testing

Table 9 shows the results of hypothesis testing relative to the TAM Model; hypotheses H1, H2, H3, H4 and H5 are accepted. They are significant and they all corroborate the nomological structure of the model.

The relation 'Ease of Use' to 'Attitude towards Using' as well as 'Ease of Use' to 'Intention to Use' have not been added because these relations were not significant for the Spanish model for $p<0.05$.

Table 9. Hypothesis Testing and Results

Hypotheses	Tested Hypothesis	Canada	Spain	Result *
H1	Ease of Use → Perceived Usefulness	0.414	0.366	Significant
H2	Perceived Usefulness → Attitude towards Using	0.862	0.935	Significant
H3	Attitude towards Using → Intention to Use	0.849	0.919	Significant
H4	Price → Perceived Usefulness	0.167	0.130	Significant
H5	Convenience → Perceived Usefulness	0.655	0.837	Significant

* significant for $p<0.05$.

In conclusion, our model integrates all latent variables of the TAM original Model; they are all significant in both countries and the TAM Model could easily be applied to analyze the adoption of on line banking on a Canadian environment in North America (Davis, Bagozzi, Warshaw, 1989) and in Spain.

6.2 Discussion of Results

Results confirm the relevance of nomological structure of the original TAM model (Davis, Bagozzi, Warshaw, 1989) and its application to the on-line banking in both countries Canada and Spain.

'Attitude Towards Using'.

This construct has been the main determinant of the 'Intention to Use' with a standardized coefficient very high and significant for both countries (H2 and more for Spain), nevertheless the Explained Variance for 'Attitude towards Using' was substantially higher for the Spanish sample than for the Canadian one (see table 8). This result is very coherent with another generic studies on the adoption of new information systems (Bobbitt and Dabholkar, 2001; Venkatesh and Davis, 1996) and some more specific on the on-line banking by Internet (Al Sukkar and Hasan, 2005).

'Perceived Usefulness'.

This construct has also a very high standardized coefficient for both countries that shows to be the antecedent for 'Attitude towards Using' and by extension a variable that indirectly influences the 'Intention to Use'. The direct relation between 'Perceived Usefulness' and 'intention to Use' has not been demonstrated for the Spanish sample (Sanchez Franco and Roldan, 2005; Venkatech, Morris, Davis and Davis, 2003) but it has been for the Canadian one (Lévy Mangin, J-P, Bourgault, N, Martinez Guerrero, M, Ortega Egea, J-M, 2011). The Explained Variance for this construct is also higher for the Spanish sample.

'Ease of Use'.

This construct has a special importance for the on-line banking acceptance by user and a strong antecedent for 'Perceived Usefulness', it indirectly influences on the 'Attitude to Using' and on the 'Intention to Use' of on-line banking.

'Convenience'.

'Convenience' is an important construct that has a substantial impact on 'Perceived Usefulness'. For customers it is very useful to do financial operations on the net from anywhere at any time with just an Internet connection without going to the branch. The results suggest that as on-line banking offers more and more conveniences the customer will easily perceive its utility. The effect of 'Convenience' over 'Perceived Usefulness' is higher in Spain than in Canada, this is due to the fact that the Spaniards use more the on-line banking for important transactions that have been generally more standardized than in Canada, Canadians themselves prefer to go to the branch to negotiate the most important aspects of financial transactions. The Canadian banks prefer to negotiate directly the most important financial transactions. It may seem a detail but they request a personal signature on each document in contrast to Spain that extensively uses the electronic signature with the same validity as the personal one. Hence more services can be included with on line banking and less the bank customers would need to go to the branch. This will increase the usefulness aspect. The results are attuned with many other investigations (Karjaluotto, Mattila and Pento, 2002; Lee, Kwon and Schumann, 2005).

'Price'.

Through Internet the bank customers should obtain better conditions, pay less fees, can get better rates for their savings or their mortgages. This is clear for all bank customers (Karjaluotto, Mattila and Pento, 2002) and especially in Spain where bank customers pay the second highest fees of all Europe. Our Research confirms that the Spanish customer is less reluctant to use Internet for price reasons (table 10 and http://www.elmundo.es/elmundo/2011/08/29/suvivienda/1314601668.html), the Spanish customer feels that he pays more for financial services so he shops more and get more financial counselling on the Internet than the Canadian bank customer.

6.3 Management Implications

Customers have a positive perception of the new channels based on new technologies if the service offered is quicker and more efficient that the service offered at the branch, nevertheless not all customers decide to go on-line banking.

Our research results show that to attract people and new users to the on-line banking, it would not be sufficient to develop a new system for 'Ease of use' (Wang, Wang, Lin and Tang, 2003), banks and credit unions should provide a complete selection of financial services based on perceived usefulness and not only with ease of access and interaction. Banks and credit unions should offer the same level of usefulness for completion of the financial services on the Internet at as those they offer at the branch. Banks should differentiate the products they offer from those of competitors and this differentiation will not come from technology or products' complexity but from innovation and creativity. Actually banks offer some financial products through the Internet that you can only access through on-line banking.

A common problem with on-line banking is the loss of financial counselling you normally get when going to the bank and for that reason it is important for user-customer to have an easy access to direct help through special phone numbers for customer support, chat opportunity, customer e-mail help and

support as well as developing all channels to interact between bank branch and customers.

Ease of use and safety are common qualities offered by all banks or credit unions, differentiation will be done on innovation and creativity and not on technology or products complexity.

Banks are actually trying to start direct communication with their customers through special e-mail accounts that they give to their customers; some countries are using Facebook or Twitter as communication channels in both directions for sharing news of interest, offering new products, financial counselling and even to manage customer' complaints. This way of doing things by social networks seems to be very much appreciated in European countries.

6.4 Limitations

This research has some limitations; the first one could be the sample selection that is relatively small (but representative) in both cases, in the Spanish case questionnaires have been handed out in 2007 and 2008, in Canada the questionnaires have been delivered in 2010. Both in Spain and in Canada people that have completed the questionnaire have shown proven abilities of computer competence, Internet use and on on-line banking, which is not the case in general and more particularly with the older age segment of the population. People who answered the questionnaire are 18 years old or more, the majority of them are well educated and are very open to new technologies; they enjoy using these and in the majority prefer to have an Internet connection with their bank instead of going to the branch to make some operations. For these reasons they believe they control reasonably well the on line banking operations over the Internet. It would be interesting examining if we obtain the same results for on- line banking operations with other people who are less educated. There is a positive point to consider in this research (in fact for these two investigations) that we distributed the same questionnaire in three languages (French and English in Canada and Spanish in Spain) and with two years of difference in two so different countries and continents we get practically the same results, this fact validates very much this research.

7. Conclusion

The TAM model is strongly supported in a Canadian and a Spanish banking environment, the influence of the 'Perceived usefulness' on 'Attitude towards using' is very strong as well as the 'Attitude towards using' on the 'Intention of use' banking on line (Davis, Bagozzi, Warshaw, 1989).

Our findings have significant validity to encourage Canadian and Spanish banking customers to use the Internet for making all their personal banking operations in a secure, easy and efficient way (there is a huge time difference between going to the bank versus doing it on the computer also access time for on line are 24 hours and for branch services only 10 hours max). All banks or Credit Unions operating in all provinces of Canada and autonom communities of Spain should be encouraged to continue investing and developing services offered on the net (particularly for people that do not have an easy access to the branch) and complete the range of the offered financial services by the e-mails, telephone, Internet, on line help, chats and all means that will allows accelerate communication.

We would like also remark that the social networks such as Facebook or Twitter are beginning to be used to inform customers, to chat with bank representatives or to lodge a formal complaint, this avenue should be more extensively explored by Canadian and Spanish financial institutions to improve communication with customers.

In conclusion to attract customers, banks should develop complete access for the transactions for their financial products' on the Internet to approximate the level they offer at the branch. This is good for the customer and for controlling bank costs (Wang, Wang, Lin and Tang, 2003).

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