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ABSTRACT

In this paper, we propose a research model of the continuance of usage intention of a social networking site (Facebook) based on the theory of planned behavior and taking into account users' gender and their perceived shyness degree. Our findings suggest that for men and women alike, the continuance of usage intention is determined by the attitude and the perceived behavioral control (PBC). Both hedonic and utilitarian outcomes are important to shape the users' attitude towards Facebook. While non-shy people (male and female) behave exactly the same and are only led by attitude to decide to continue using Facebook, for shy people, the gender effect seems to be significant in shaping the attitude towards the SNS and in determining the role of PBC: for shy men, the decision to continue using Facebook is only affected by PBC whereas for shy women both attitude and PBC are important. For all the categories of users considered, social influence does not play any significant role.

Keywords

Social Networking Sites, Theory of Planned Behavior, IS Continuance, Shyness, Gender, Partial Least Squared.

INTRODUCTION

The last decade has seen an increasing body of research studies devoted to information continuance of usage. Since Battacherjee (2001) has developed his Post Adoption Model (PAM), a new research direction has been initiated to put a special focus on the post-adoption stage of information systems rather than on their earlier acceptation stage (Agarwal & Karahanna, 2000; Bhattacherjee & Premkumar, 2004; Burton-Jones & Gallivan, 2007; Kim & Malhotra, 2005; Limayem et al. 2007). This body of research is built upon previous and well established psychological theories, mainly the Theory of Reasoned Action (Ajzen and Fishben, 1980) and the Theory of Planned Behavior (Ajzen, 1985).

As explained by Ortiz de Guinea and Markus (2009), it is important to investigate the antecedents of IS continuance usage which are not only rational-based but also related to diverse emotional motivations which are part of the psycho-sociological profile of each user.

In this article, we are interested in Social Networking Sites (SNS) post-adoption usage. These platforms are defined as virtual socialization spaces, offering various web services. One can notice that users may "try" many SNS but the reasons why some of them remain faithful to a given SNS while others do not, are not so clear. Indeed, changing from a SNS to another does not involve high switching costs. We think therefore that it is important to capture the process of SNS continuance of usage because the long-term viability of these platforms is more critical than their initial acceptance to evaluate their success. We will particularly focus our interest on a very popular SNS: Facebook; and investigate whether some demographic and psychological users' characteristics have any role to play in shaping this process.

We will particularly focus on a specific user's personality trait which is shyness and try to compare shy women's and shy men's intentions to continue using Facebook. There are numerous research studies on shyness and Information Systems usage (Utz, 2000; Scealy et al., 2002; Saunders and Chester, 2008; Roberts et al., 2000).Most of these studies discussed whether it is easier (or not) for shy people to interact with other people 'virtually' (i.e. via an ICT supported communication platform). SNS provide a very good example of such a platform and represent therefore an interesting research setting. Investigating also the gender effect within this issue has theoretical implications mainly because it fills a gap in the body of research dedicated to SNS usage; and also practical ones. Indeed, we need to thoroughly understand the SNS usage mechanisms to help encouraging people to use internal SNS within firms, for example.

The remainder of this article proceeds as follows: first, we briefly explain the theoretical foundations of our approach. Then, we present our conceptual model, the methodology we have followed to test this model, and finally we discuss the findings obtained before concluding.

THEORETICAL FOUNDATIONS

Our approach is clearly affiliated to the IS post-acceptance literature. We briefly remind the main underpinnings of this body of research in the following section. In a second section, we present the theory of planned behavior and discuss why it has been adapted as the backbone of our research model. Then, we put the focus on the shyness factor particularly in the communication mediated literature. Finally, we highlight some of the research perspectives according to which the gender effect is investigated within the IS field.

IS Usage Continuance

IS Continuance of Usage also known in the literature as Post-Adoptive IS Usage refers to "all forms of behavior that reflect continued use of an IS [*or*] ending with the final decision of the user to stop this use" (Limayem et al., 2007, p. 707). As reminded by Bhattacherjee (2001), this concept is not new. It has been investigated especially in the IS implementation literature (Cooper and Zmud, 1990) and in the diffusion literature (Rogers, 1995). It had consequently led to many studies conducted at the organizational or the individual level (Limayem et al., 2007).

Because it supposes a past experience with the studied technology, the research on the continuing use of IS has built upon some of the underpinnings of the Expectation-Confirmation-Theory (Oliver, 1980). For the same reason, it emphasizes the role of habitual behavior that does not require conscious behavioral intentions.

Ortiz de Guinea and Markus (2009) argue that the decision to continue using an IS is generated by two categories of factors: (1) cognitive factors such as perceived ease of use, perceived usefulness, perceived behavioral control, for example. (Fishbein and Ajzen, 1980; Kim and Malhotra, 2005, Hsieh et al., 2008); (2) and affective factors, such as attitude, satisfaction, perceived enjoyment, affect, Computer anxiety, social influence, etc. (Davis et al., 1992; Bhattacherjee, 2001; Venkatesh, 2000).

One of the most emblematic IS research models which explain the intention to use (or to continue using) an IS with reference to these two categories of explaining factors is the theory of planned behavior (TPB).

Theory of Planned Behavior

The TPB was developed by Ajzen (1985, 1991) and came to address the limitations of the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980). It stipulates that the intention to perform a certain behavior results from cognitive and emotional processes, in which the individual's behavior is influenced by the attitude towards the action, subjective norms and perceived behavioral control (Ajzen, 1985, 1991). Thus, the main contribution of the TPB compared to alternative theories is its ability to address IT usage by including factors related to the attitudinal, cognitive and social context of use, which are important to consider when we try to capture a given individual behavior (Ajzen, 1985, 1991, Venkatesh and Brown, 2001; George, 2004). This theory is also interesting since it takes into account not only the habilitating but also the constraining factors which explain the intention to use an IS, this is not the case of alternative models like the TRA.

Therefore and following numerous research studies focusing on the IS post adoption phase (Mathieson, 1991; Taylor and Todd, 1995; George, 2004, Hsieh et al., 2008), we propose to adapt this TPB in our research. Moreover, this theory is particularly appropriate when the IS under study is characterized by a volitional usage, which is the case of Facebook.

Shyness and Computer-Mediated Communication

Shyness is a trait of human personality which, despite its presence in our everyday language, remains a difficult term to define (Saunders and Chester, 2008). It includes various reactions to social interactions with strangers or casual acquaintances. These reactions may appear as a feeling of discomfort, awkwardness, tension, etc. (Cheek, Buss, 1981).

Shy people are characterized by a very high degree of self-awareness and are very conscious of their image and what others might think about them. Despite the big difficulties they face when communicating with others, meeting new people and making friends are very important to them (Zimbardo, 1977).

Indeed, a shy individual is very backward in social situations (Henderson and Zimbardo, 1998). One can think that this inhibition experienced in real life and physical encounters with other people may disappear or grows dim thanks to the usage of Information systems. Shy people may communicate easily using these tools than in face to face meetings.

Several studies have highlighted the role of shyness in virtual worlds (Utz, 2000; Scealy et al., 2002; Saunders and Chester, 2008). Utz (2000) argued for example that the virtual world has the potential to overcome shyness. This idea has long been discussed but has not yet been fully validated by researches. Utz (2000) explained that shyness is not a barrier to virtual social interactions. Roberts et al. (2000) confirm this idea, arguing that the use of Internet enables shy people to overcome the inhibition experienced in real interactions with others and therefore help them to develop relationships in virtual world settings. Some authors have shown that shy people may become addicted to Internet use because it is a way for them to overcome their fear of others.

All those intriguing and somehow conflicting findings have motivated us to further investigate the role played by shyness in SNS continuance of usage.

The Gender Effect

Do male and female behave the same way toward IS? The question is not new and has been studied within the IS acceptance literature, for example by introducing gender as a moderating variable (Venkatesh and Morris, 2000; Venkatesh et al., 2000; Venkatesh et al., 2003). Most of these studies concluded that gender has not a neutral role in shaping acceptance mechanisms.

For instance, Venkatesh et al. (2000) found that the attitude toward the IS has a stronger explanatory power of acceptance for men than it is the case for women. While the contrary seems to occur for social norms and perceived behavioral control, which are more salient for women than it is the case for men. It also has been demonstrated that the perceived ease of use factor seems to play a more significant role to explain female rather than male intention to use a given IS (Venkatesh and Morris, 2000).

In this paper, we aim at providing some insights on the gender effect within the SNS continuance of usage context and propose therefore to develop a research model based upon the four theoretical components we have developed above.

CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

Our model extends the theory of planned behavior to explain and predict SNS continuance of usage intention for different categories of people with regard to their gender and perceived shyness degree. It can be decomposed into three main blocks: the first one represents the theory of planned behavior backbone which stipulates that the continuance of usage of Facebook depends on the individuals' attitude towards this SNS, social influence and perceived behavioral control. The second block concerns the attitudinal beliefs and suggests that attitude is determined by the expected utilitarian outcomes and hedonic outcomes of the SNS (Venkatesh and Brown, 2001). Finally, the third block is related to the perceived behavioral control which is decomposed into two determining factors: perceived ease of use and self-efficacy.

The overall structure of our model is presented in Figure 1. In this section we present its theoretical components and the interactions between them.
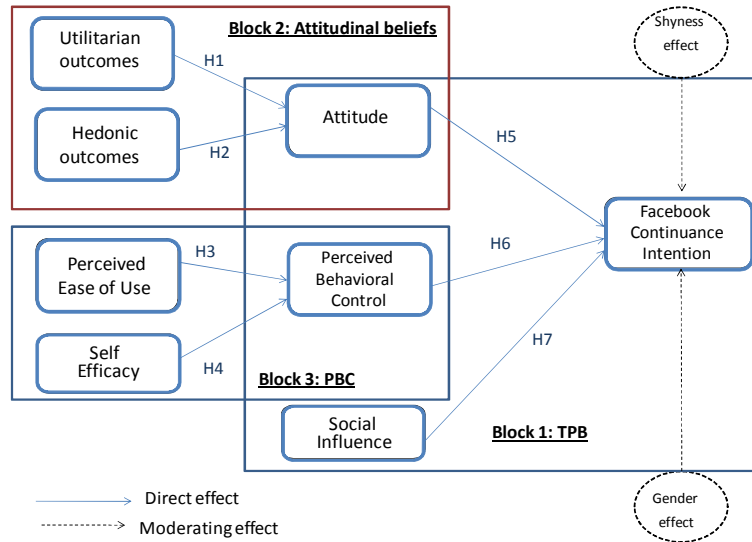
Figure1. The Research Model

Attitude

Attitude is considered as a key variable in the IS acceptance process (Ajzen, 1991; Ajzen and Madden, 1986; Venkatesh and Brown, 2001). Davis et al. (1992) identified two attitudinal beliefs: perceived utilitarian outcomes and perceived hedonic outcomes. Consistent with earlier researches (Venkatesh and Brown, 2001, Hsieh et al., 2008), we consider that utilitarian and hedonic outcomes have an impact on the IS post-adoption intention. Indeed, they help the individual to build a positive or a negative attitude towards an IS. Since the SNS is considered as a hedonic IS (Finin et al., 2005), one can ask whether the role played by hedonic outcomes on attitude towards the SNS will be more significant than the role played by utilitarian ones.

H1: Utilitarian outcomes influence the individual's attitude towards Facebook.

H2: Hedonic outcomes influence the individual's attitude towards Facebook.

Perceived behavioral control

Perceived behavioral control (PBC) was developed by Ajzen (1991) in order to highlight the important role played by the intellectual and contextual constraints on technology adoption. In the literature, this construct reflects three main factors: perceived self-efficacy (Taylor and Todd, 1995, Compeau and Higgins, 1995), perceived ease of use (Ajzen, 1991; Mathieson, 1991, Davis, 1989) and availability of the IS (Lenhart, 2002). A high level of perceived behavioral control means that there are many opportunities that facilitate and help the individual to behave in a given way. For example, if an individual feels that he owns the required capacity and resources to use a SNS, this will strengthen his or her intention to use this tool. In our research, we will focus on two antecedents of PBC: perceived self efficacy and perceived ease of use.

H3: Perceived ease of use has a positive influence on the PBC.

H4: Perceived self-efficacy has a positive influence on the PBC.

Social Influence

This construct is related to the social identity theory (Tajfel, 1972) since it stipulates that the willingness to belong to a social group may lead an individual to act according to the group's standards. Several researches in the IS area considered that subjective norms or social influence play(s) an important role in the IS usage intention (Ajzen and Fishbein 1980, Ajzen, 1985, 1991, Taylor and Todd, 1995, Venkatesh et al., 2003).

Consistent with several previous researches, we believe that the first adoption stage may be influenced by social influence but this influence may decrease across time, along with the confirmation (or not) of the IS usefulness.

Usage continuance intention

Several researches consider that the behavioral intention towards an IS plays an important role in the process of effectively adopting a given behavior toward this IS. In other words, the intention leads to the behavior (Ajzen and Fishbein, 1980, Davis et al. 1989; Venkatesh and Brown, 2001). Consistently with previous Post adaptation–based researches, we consider

the continuance of usage intention as the ultimate dependent variable of our model. This construct is determined by the attitude, the personal behavioral control and the social influence. We therefore formulate our final research hypotheses as follows:

H5: Attitude has a positive influence on the continuance of usage intention of Facebook.

H6: PBC has a positive influence on the continuance of usage intention of Facebook.

H7: Social influence has a positive influence on the continuance of usage intention of Facebook.

RESEARCH STRATEGY

Instrument Development and Survey Administration

We have developed a survey instrument to collect the quantitative data we need in order to test our research model. All our constructs and measures are based on items validated by existing instruments (appendix 1). The perceived ease of use was adapted from Davis (1989). Perceived self-efficacy was measured by the scale adopted by Compeau and Higgins (1995). Perceived behavioral control, subjective norms and attitude were measured by items suggested by Ajzen (1991). Items measuring hedonic outcomes and utilitarian outcomes are derived from Davis et al. (1989)'s work. Shyness was measured by the scale reviewed by Cheek (2005) and originally developed by Cheek and Buss (1981). Finally, the usage continuance intention was measured by the items developed by Venkatesh (2000). Our items are evaluated using Likert-type scales (1: strongly disagree, 5 strongly agree).

According to the literature, all our constructs are reflective (Jarvis et al., 2003), only shyness is formative (Cheek, 2005). In order to differentiate shy individuals from non - shy ones, we have calculated a score based on the 13 items of shyness. If the individual gets a score which exceeds 36 then he is considered shy, if not, the person is considered to be non-shy.

We asked 20 academic researchers to pre-test our questionnaire. They have suggested minor modifications which were added to the final version of our questionnaire, prior to its full-scale administration following an e-survey method (available in three languages: French, English and Spanish). Our survey has been available online for 5 months. We have until now collected 639 responses from people using different SNS (Facebook, Myspace, Linkedin) and living in Europe.

In this paper, we report the data analyses performed on our data setting coming from French people using Facebook. This because we think that Facebook and Linkedin for example have different specificities and are not supposed to meet the same needs, their usage continuance mechanisms may therefore differ and have not to be included in the same data analysis. Moreover, because we do not intend to investigate the cultural differences within this mechanism we only included data from France. Our whole data setting will be exploited in our future publications.

After excluding cases of inadequate data, 293 complete surveys were retained for the analyses. Our sample is composed of 125 men and 168 women.

Data Analyses

Data analyses have been processed using a Partial Least Squares (PLS) based tool; SmartPLS developed by Ringle et al. (2005). PLS has been preferred because it is able to model latent variables without requiring strict normal distributions of data (Fornell and Cha, 1994). It is also less constraining concerning small samples (Chin and Gopal, 1995). A two-stage analytical procedure is followed: a confirmatory phase to assess the measurement model, then the structural model is examined. We first examine the baseline model (related to the whole sample). Then, we divide our sample into four subpopulations with regard to their gender and perceived shyness degree.

We calculate a score of "perceived shyness degree" using the arithmetic mean of the 13 items of shyness developed by Cheek and Buss (1981). We have previously verified the internal validity of this construct by calculating its Cronbach's alpha which is equal to 0.843. This condition is required by Rozeboom (1979) to split a sample of data into several ones using an index based on an arithmetic mean of items. Since SmartPLS does not take into account moderating variables when they have a formative structure, we could not incorporate the shyness construct as a moderator in our model. Our research hypotheses will be examined in the baseline model and for each of the four subpopulations considered here.

Measurement Model

Three types of validity have to be assessed: content validity, convergent validity and discriminant validity. Content validity was adequately assessed through extensive literature review and conceptual validation. Convergent validity was assessed by examining composite reliability (CR), item loadings and average variance extracted (AVE) from the measures (Hair et al.,

2005). Internal reliability can also be assessed by using Cronbach's alpha. However, because it tends to provide a severe underestimation of internal consistent reliability of latent variables in PLS path models, it is less informative than composite reliability (Henseler et al., 2009). Table 1 presents the required values for each of these indicators.

Measurement validity indicators		
CR : Composite Reliability	>0.7	Nunnally & Bernstein (1994)
AVE: Average Variance Extracted	>0.5	Fornell & Larker (1981)
Cronbach's alpha	>0.7	Nunnally & Bernstein (1994)
T-value	>1.96	Hensler et al. (2009)
Structural Validity indicators		
R squared of endogenous latent variables	>0.67 substantial >0.33 moderate >0.19 weak	Chin (1998)

Table 1: Required values for measurement and structural validity

As shown in table 2, all the CR obtained are higher than 0,8. The AVE relative to each of our constructs exceed the required value of 0,5. All the loadings and T-values are very satisfactory. The convergent validity of our model is therefore validated.

Construct	Item	Loading	t-value
Utilitarian benefices (Reflective)			
CR = 0,873448 Cronbach's a = 0,781790 AVE = 0,697466	Q10 Q11 Q12	0,873 0,783 0,847	54,765 24,427 40,455
Hedonic benefices (Reflective)			
CR = 0,83771 Cronbach's a = 0,735074 AVE = 0,638128	Q13 Q14 Q15	0,870 0,883 0,613	40,001 51,383 7,655
Perceived ease of use(Reflective)			
CR = 0,9016 Cronbach's a = 0,7830 AVE = 0,8209	Q19 Q20 Q22 Q23 Q24 Q26	0,766 0,801 0,781 0,585 0,817 0,774	28,540 31,138 27,497 12,192 38,874 24,500
Self efficacy (Reflective)			
CR = 0,889170 Cronbach's Alpha = 0,849867 AVE = 0,574697	Q17 Q18	0,744 0,927	13,424 59,324
Attitude (Reflective)			
CR = 0,897976 Cronbach's Alpha = 0,829468 AVE = 0,745882	Q7 Q8 Q9	0,889 0,852 0,849	49,734 41,484 35,445
Perceived behavioral control (Reflective)			
CR = 0,816924 Cronbach's Alpha = 0,552416 AVE = 0,690568	Q21 Q25	0,817 0,845	29,754 38,029
Social influence (Reflective)			
CR = 0,932551 Cronbach's a = 0,864479 AVE = 0,873762	Q27 Q28	0,901 0,967	16,717 77,445
Continuance intention (Reflective)			
CR = 0,927119 Cronbach's a = 0,842783 AVE = 0,864141	Q33 Q34	0,930 0,929	72,797 63,528

Table 2. Convergent Validity Measurements

Discriminant validity is assessed by examining whether the square root of the AVE for each construct is higher than the correlations between the construct and the other ones, as recommended by Fornell and Larker (1981). Table 3 shows that this condition is supported.

	Attitude	Ease of use	Continuance of usage intention	Hedonic outcomes	PBC	Self efficacy	Social influence	Utilitarian out.
Attitude	**0,863645**							
Ease of use	0,298227	**0,758087**						
Continuance	0,522271	0,331839	**0,929592**					
Hedonic out.	0,547733	0,317483	0,525854	**0,798829**				
PBC	0,272189	0,767531	0,279905	0,229211	**0,831004**			
Self efficacy	0,271258	0,691363	0,333824	0,393106	0,542034	**0,840255**		
Social influence	0,284488	0,197134	0,219351	0,361889	0,159553	0,211792	**0,934752**	
Utilitarian out.	0,534477	0,327926	0,436395	0,573529	0,241857	0,325394	0,398334	**0,835144**

Table 3. Correlations between constructs (diagonal elements are Square Roots of the AVE)

Following Chin (1998), we also proceeded to a cross-loading analysis (table 4) and notice that each construct shares larger variance with its own measures than with others. The discriminant validity of our model is then verified.

	Attitude	Ease of use	Facebook continuance usage	Hedonic outcomes	PBC	Self efficacy	Social influence	Utilitarian outcomes
Q7	**0,889072**	0,240980	0,509794	0,470441	0,256229	0,244548	0,210180	0,449347
Q8	**0,851916**	0,225088	0,431695	0,417742	0,192435	0,191444	0,295730	0,522564
Q9	**0,849372**	0,308716	0,407971	0,532563	0,255784	0,266901	0,233705	0,413761
Q19	0,115590	**0,766084**	0,191093	0,207705	0,567120	0,738087	0,111994	0,174940
Q20	0,189055	**0,801375**	0,290381	0,300515	0,583672	0,632781	0,212439	0,282527
Q22	0,310254	**0,780923**	0,249201	0,260547	0,659489	0,455043	0,107182	0,298760
Q23	0,283905	**0,585054**	0,334771	0,246508	0,387469	0,260249	0,111452	0,327078
Q24	0,253982	**0,817249**	0,226703	0,232753	0,656231	0,532645	0,170109	0,246395
Q26	0,218903	**0,773995**	0,261599	0,209737	0,586186	0,482097	0,181213	0,194747
Q33	0,491731	0,311505	**0,930171**	0,465481	0,253657	0,290389	0,190341	0,411426
Q34	0,479219	0,305422	**0,929012**	0,512366	0,266791	0,330412	0,217582	0,399867
Q13	0,450178	0,284162	0,414406	**0,870492**	0,171567	0,365390	0,314369	0,486504
Q14	0,555614	0,267140	0,537123	**0,883481**	0,238128	0,327714	0,303283	0,537429
Q15	0,186712	0,215633	0,211129	**0,613261**	0,101966	0,243444	0,272426	0,291024
Q21	0,199551	0,618990	0,215177	0,126944	**0,816995**	0,350937	0,052313	0,204401
Q25	0,251122	0,655893	0,248989	0,249608	**0,844781**	0,543183	0,207208	0,198001
Q17	0,378710	0,422521	0,475193	0,510399	0,311225	**0,743710**	0,236949	0,405606
Q18	0,151979	0,692244	0,181902	0,241834	0,553980	**0,926797**	0,151661	0,209659
Q27	0,235808	0,147220	0,143429	0,289568	0,103780	0,169708	**0,901305**	0,360406
Q28	0,287222	0,208539	0,244023	0,371478	0,177821	0,217262	**0,967043**	0,384391
Q10	0,463238	0,268938	0,355521	0,430694	0,206217	0,258897	0,287680	**0,873149**
Q11	0,429187	0,299348	0,383100	0,519656	0,230726	0,316818	0,402082	**0,782672**
Q12	0,445824	0,254731	0,356151	0,490477	0,170124	0,241996	0,312921	**0,847016**

Table 4. Correlations between Items and Latent Variables

Structural Model

Since we obtained satisfactory psychometric characteristics, we can now estimate our structural model. To do so, we conduct a Bootstrapping analysis for the baseline model, then for each sub-population: shy and non-shy people, male *versus* female. To assess our hypotheses among all these samples, we analyze the strengths and directions of the relationships among the variables (we assess beta, T-statistics and p-value of each path). Then we examine the R square of dependent variables.

A summary of these findings is presented in table 5 (the whole population), table 6 (male *versus* female users) and table 7 (the four sub-populations: shy men; non shy men; shy women; non shy women). Due to space limitations, we highlight our findings in the figures 2 and 3 only for the two subpopulations of shy men and shy women.

Hypotheses	Path description	Standardized beta	T-Statistics	Supported	R 2
H1	UTIL out. → ATT	0,328***	5,063	YES	
H2	Hed out. → ATT	0,359 ***	5,601	YES	0,372
H3	EAU → PBC	0,752***	16,550	YES	
H4	P S Eff→ PBC	0,022	0,433	NO	0,589
H5	ATT → CONT	0,465***	7,980	YES	
H6	PBC → CONT	0,145 **	2,307	YES	0,297
H7	So Inf → CONT	0,064	1,318	NO	

* p< .10 ; **p< .05 ; *** p< .01
Table 5. Total population results

Male					
Hypotheses	Path description	Standardized beta	T-Statistics	Supported	R 2
H1	UTIL OUT. → ATT	0,444***	4,222	YES	
H2	HED OUT.→ ATT	0,221 **	1,972	YES	0,361
H3	EAU → PBC	0,768***	12,139	YES	
H4	P S Eff→ PBC	-0,009	0,132	NO	0,581
H5	ATT → CONT	0,466***	4,356	YES	
H6	PBC → CONT	0,122	1,391	NO	0,294
H7	So Inf → CONT	0,080	1,049	NO	
Female					
H1	UTIL OUT. → ATT	0,251***	3,152	YES	
H2	HED OUT → ATT	0,460 ***	6,196	YES	0,372
H3	EAU → PBC	0,735***	9,708	YES	
H4	P S Eff→ PBC	0,058	0,696	NO	0,589
H5	ATT → CONT	0,481***	8,196	YES	
H6	PBC→ CONT	0,175 **	2,089	YES	0,297
H7	So Inf → CONT	0,031	0,464	NO	

* p< .10 ; **p< .05 ; *** p< .01
Table 6. Gender Effect Results

Hypotheses	Male (Shy)				Female (shy)			
	Sd beta	T-stats	Supported	R2	Sd beta	T-stats	Supported	R2
H1	0,178	0,797	NO	0,194	0,152	0,938	NO	0,452
H2	0,306*	1,662	*Marginally*		0,560***	3,750	YES	
H3	0,697***	8,505	YES	0,705	0,814***	6,877	YES	0,596
H4	0,237***	2,715	YES		-0,053	0,390	NO	
H5	0,134	0,842	NO	0,278	0,415***	3,388	YES	0,374
H6	0,384**	2,405	YES		0,395***	2,601	YES	
H7	0,198	1,273	NO		0,089	0,455	NO	
	Male (Non- shy)				Female (non- shy)			
H1	0,474***	4,563	YES	0,408	0,306***	3,506	YES	0,409
H2	0,236**	2,133	YES		0,417***	5,055	YES	
H3	0,762***	9,456	YES	0,571	0,716***	6,200	YES	0,627
H4	-0,011	0,129	NO		0,102	0,953	NO	
H5	0,511***	4,200	YES	0,327	0,519***	7,385	YES	0,337
H6	0,097	0,945	NO		0,081	0,892	NO	
H7	0,077	0,926	NO		0,073	0,823	NO	

* p< .10 ; **p< .05 ; *** p< .01
Table 7. Shyness and Gender effects Results

DISCUSSION

The objective of this study is to explore the determinants of the continuance intention to use Facebook. Building upon the TPB theory and previous Post adoption-based empirical studies, we propose a model to test the explanatory power of attitude, perceived behavioral control and social influence on Facebook continuance of usage, for male and female users and also according to their self-perceived shyness degree.

As a preliminary result, we can see that when we look at the whole population (table5), Facebook continuance of usage intention is determined by attitude and perceived behavioral control. Overall, both hedonic and utilitarian outcomes are considered as important to shape the attitude of users towards Facebook. Whereas, perceived behavioral control seems to be determined by ease of use rather than by perceived self efficacy. This finding is probably related to our sample (more than 70% of our respondents are graduates and are less than 45 years old) which means that a majority of them feel overall very comfortable using SNS and more generally using IT based communication tools.

When we investigate the gender effect (table 6), we can see that there are slight differences between male and female in their Facebook continuance intention. The only difference concerns the hypothesis H6. In fact, perceived behavioral control seems to play a more important role in explaining Facebook continuance of usage intention for women than it does for men. This result is coherent with previous research findings (Venkatesh and Morris, 2000). No other differences could be mentioned.

Now, when we jointly consider shyness and gender effects, significant divergences appear; while non-shy people behave the same whether they are male or female (table7), shy men and shy women adopt different attitudes. For shy men, only the behavioral control determines intention (attitude and social influence are not significant). While, shy women are more sensitive to attitude and especially to SNS hedonic outcomes and also consider that their perceived behavioral control is important to shape their intention to continue using Facebook. Both for shy men and shy women, the utilitarian outcomes are not important. Facebook seems to be for shy people first of all a hedonic system which provides pleasure and enjoyment rather than utilities.

Social influence is not significant for any of the users' categories considered here. This result is coherent with previous works (George, 2004; Hsieh et al., 2008), which stipulate that subjective norms and social influence have a determinant effect in the early stages of IS acceptation and are less significant when we investigate the post-adoption stage.

We finally notice that our model explains the variance of continuance intention (measured by the R2 related to this construct), at an average of 30% which is equivalent to previous studies on IS continuance (Limayem et al. 2007).
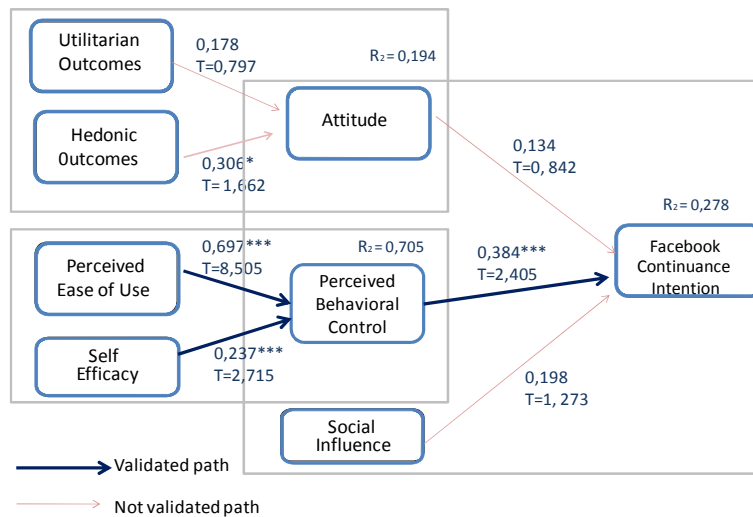

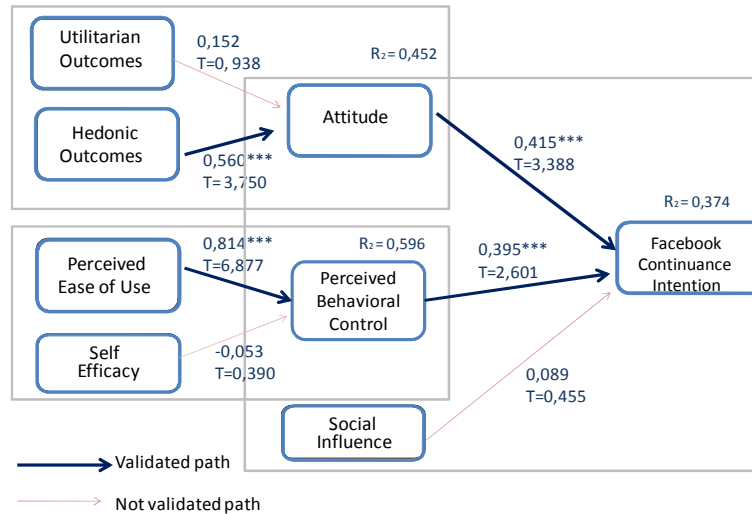**Figure 2. Facebook Continuance of usage Intention for shy men**

Figure 3. Facebook Continuance of usage Intention for shy women

CONCLUSION

In this article, we have developed a TPB-based research model on the usage continuance intention of Facebook which takes into consideration users' gender and their perceived degree of shyness. Our results show that the gender effect has a more powerful determinant power on the intention to continue using Facebook for shy people than it is for non-shy ones.

It would be interesting to elaborate in-depth interviews with several categories of SNS users in order to deepen our understanding of these differences and to interpret our results based on more thorough investigations.

This research has several limitations. Some of them are due to the theoretical construction of our model. More determinant variables could be included, like those related to users' habits and users' social exposure. Another limitation may be related to our sample's structure composed mainly by young and well-educated people, which may result in difficulties in generalizing our results.

Several research avenues are interesting to be investigated in this topic. If we consider SNS as "online sociability platforms that allow the construction of social masks" (Vonach, 2004, p.91), shy people who are trying to overcome their inhibitions and are involved in these platforms may be more vulnerable to disappointments and/or to problems of invasion in their privacy than non-shy individuals. The decrease of their discomfort felt in real life, can lead them to quickly trust other people in virtual spaces and thus to be a target of Internet "misuse". This leads us to believe that elements such as assertiveness, peer- to-peer trust, reputation, etc. may be interesting to study in the context of these web-based tools usage.

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APPENDIX: ITEMS OF THE QUESTIONNAIRE

Constructs	Items	Measurement scale	Authors
Shyness	- I feel tense when I'm with people I don't know. (Q35) - I am socially somewhat awkward.(Q36) - I do not find it difficult to ask other people for information.(Q37) - I am often uncomfortable at parties and other social functions.(Q38) - When in group of people, I have trouble thinking of the right things to talk about. (Q39) - It does not take me long to overcome my shyness in new situations.(Q40) - It is hard for me to act natural when I am meeting new people. (Q41) - I feel nervous when speaking to someone in authority. (Q42) - I have no doubts about my social competence. (Q43) - I have trouble looking someone right in the eye. (Q44) - I feel inhibited in social situations. (Q45) - I am shyer with members of the opposite sex. (Q46) - I do not find it hard to talk to strangers. (Q47)	Likert Scale	Cheek (2005)
Attitude	- Using the system is a bad / good idea. (Q7) - Using the system is a foolish / wise idea. (Q8) - Using the system is unpleasant / pleasant. (Q9)	Likert Scale	Ajzen (1991)

Utilitarian Outcome	- Using Social Networking Sites :
	  * improves my performance in terms of socialization (Q10)
	  * enhances my effectiveness for communication & information search. (Q11)
	   * is useful for my social life. (Q12)
		Likert Scale	Davis et al. (1989)

Hedonic Outcome	- Using Social Networking Sites is: * Enjoyable (Q13) * Interesting (Q14) * Funny (Q15)	Likert Scale	Davis et al. (1989)
Perceived Behavioral Control	- Using the SNS is entirely within my control. (Q21) - I have the resources, knowledge, and ability to use the SNS. (Q25)	Likert Scale	Ajzen (1991)
Continuance of usage	- I intend to use this SNS over the next 6 months. (Q33) - I intend to use this SNS frequently over the next 6 months. (Q34)	Likert Scale	Venkatesh (2000)
Perceived Ease of Use	- Learning to operate the SNS would be easy for me. (Q19) - I would find it easy to get the SNS to do what I want it to do. (Q20) - My interaction with the SNS would be clear and understandable. (Q22) - I would find the SNS to be flexible to interact with. (Q23) - It would be easy for me to become skillful at using the SNS. (Q24) - I would find the SNS easy to use. (Q26)	Likert Scale	Davis (1989)
Social Influence	- People who influence my behavior think that I should use the system. (Q27) - People who are important to me think that I should use the system. (Q28)	Likert Scale	Compeau and Higgins (1995)
Self efficacy	- I feel comfortable using SNS on my own (Q17) - I can easily operate SNS on my own. (Q18)	Likert scale	Compeau and Higgins (1995)