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Mediation of Cognitive Absorption between Users' Time Styles and Website Satisfaction

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Abstract

The purpose of the current research is to investigate to what extent website continuance intention is determined by website users' satisfaction. Moreover, we desire to test the mediating impact of cognitive absorption between users' time styles and website satisfaction. Data collection is carried out on a sample of 300 respondents and conducted by an experiment in laboratory, preceded and followed by a survey administration. Results suggest that cognitive absorption mediates the relation between time styles and satisfaction; and that website satisfaction influence positively web site usage continuance intention. Theoretical and practical implications are considered.

Keywords: **Time styles, Cognitive absorption, Website satisfaction, Website continuance intention.**

INTRODUCTION

Understanding technology continuance intention has gained much attention in most of information system research. Continuance behavior is important due to the fact that retaining actual clients is five to seven less expensive than acquiring new ones (Parthasarathy and Bhattacherjee, 1998 ; Khalifa and Liu, 2005). User's intention to continue using a website is considered a major determinant of its success because initial use of the website is the first step toward realizing its success. One can conclude that an eventual website success depends on its continued use or "continuance" after initial use (acceptance). Clearly, understanding the factors influencing the customer's intention to continue using the website is a critical issue for researchers and practitioners. As a consequence, many theories and models have been developed in order to understand the factors underlying the formation of continuance intention. Hence, and according to information system continuance model (Bhattacherjee, 2001), website continuance intention is determined by website satisfaction. Moreover, according to Agarwal and Karhanna (2000), cognitive absorption and other variables (perceived usefulness, ease of use, subjective norms) impact intention. They suggest that the state of cognitive absorption is an important concept explaining users' behavior in computer-mediated environments. They explain the importance of this concept by the fact that it is an important antecedent of two motivational factors of technology usage; perceived usefulness and ease of use. However, and despite the richness of their discussions, they haven't mentioned other antecedents of cognitive absorption other than innovativeness and technology playfulness.

In this research, we are willing not only to test the impact of another antecedent of cognitive absorption; users' time styles, but also to test the mediating impact of cognitive absorption between users' time styles and their website satisfaction. The remainder part of this paper will be structured as follows: Section 2 describes briefly the constructs of this study. Section 3 presents the proposed model and research hypotheses. Section 4 provides the research methodology. Section 5 presents and discusses the results of our empirical analysis. The paper ends with a conclusion and some directions for future research.

THEORETICAL BACKGROUND

Time styles

According to Venkatesan et al., (1992), time styles as « the individual attitude toward time, the way he/she perceives time and the impact of this perspective on behavior». Bouder-Pailler (2003) defines it as the subjective representation of time developed by the individual as regard to his own experience. Time style is a stable psychological trait

that represents the relationship between the individual and time, conceptualized by researchers as a multidimensional concept (Usunier and Valette-Florence, 1994; Valette-Florence, Ferrandi and Usunier, 2001). Its dimensions are:

-Linearity and economicity of time: It refers to the individual orientation toward a rational planning of activities in order to improve the usage of time. As a result, individuals with economic perception of time tend to be sensitive to time loss and hence, they use many time markers such as schedules, clocks and calenders. This dimension encompasses two sub-dimensions, economic time and non-organized time (Durrande-Moreau and Usunier, 1999).

-Temporal orientations: According to Agarwal and Tripathi (1980), temporal orientation « is the individual preference or disposition to visualize one of the three temporal zones: past, present and future. To be past, present or future-oriented depends on the weight the individual gives to the events placed in one zone. Future-oriented individuals, in contrast to those past-oriented, are work-motivated, tenacious, pragmatic and enjoy time planning and fulfilling their goals.

-Obedience to time: It encompasses dimensions of time anxiety and time submissiveness. Time anxiety, as opposed to time submissiveness, is a feeling of discomfort toward time leading to a need to control it. On the behavioral side, anxiety let the individual wait passively the events, reject risky and creative activities and take preventive actions in order to deal with everyday life (Urien, 2000).

-Temporal persistence: It explains the way the user manages his time during the interaction, and encompass two motivational dimensions: tenacity and preference to quick return. Usunier and Valette-Florence (1994) suggest that tenacious people (in contrast to those preferring immediate results) are those capable to conduct activities for which the gains are not rapidly obtained.

Cognitive absorption

Agarwal and Karahanna (2000) define cognitive absorption as « a state of deep involvement and enjoyment with software ». It represents a subjective experience of interaction between the individual and the computer in which the former looses the notion of time and is so intensely involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it. This state is characterized by loss of self-consciousness, by responsiveness to clear goals and a deep sense of enjoyment. It is derived from three theoretical streams of research; absorption as a personality trait, the flow state and the notion of cognitive involvement; and reflects the sensations resulting from the immersion in the virtual environment. Agarwal and Karahanna (2000) identify five dimensions of cognitive absorption: temporal dissociation, focused immersion, heightened enjoyment, control and curiosity. According to Shang, Chen and Shen (2005), the dimensions of cognitive absorption represent different forms of intrinsic motivation.

-Temporal dissociation: It is the individual incapacity to perceive time passage during the interaction. It is qualified by Novak et al (2000) as « time distortion ».

-Focused immersion: the individual attention is entirely devoted and absorbed by the activity where other attentional demands are ignored.

-Heightened Enjoyment: Enjoyment refers to the extent to which the activity of

using a computer system is perceived to be personally enjoyable in its own right aside from the instrumental value of the technology (Ryan and Deci, 2000). The intrinsic pleasure of the activity is the own motivation of the individual.
-Control: This dimension refers to the user's perception of being in charge of the interaction with the commercial website.
-Curiosity: It taps into the extent the experience excites the individual curiosity.

Website satisfaction

The literature review on the concept of satisfaction reveals a lack of consensus regarding the conceptual definition of this concept. Giese and Cote (2000) argue that all the definitions share common elements: the satisfaction is a response (emotional and/or cognitive in nature) toward a particular object (product, site) which is produced after a certain time (after purchase, after consumption,..). Based on Vanhamme (2002), we define satisfaction as the user's cognitive jugement that occurs after the website visit. Satisfaction is an important area of research in the marketing literature as well as in the information system field. The former focused on the satisfaction formation process (Oliver, 1993; 1997), whereas the latter concentrated on the relation between user satisfaction and system characteristics (Bailey and Pearson, 1983; DeLone and McLean, 2002, 2003; Khalifa and Liu, 2003). Satisfaction is treated by many scholars as a unidimensional concept (Oliver, 1980) and by others as multidimensional (Mc Haney et al, 2002). In this paper, website satisfaction is a latent variable with 5 dimensions: site content, accuracy, format, ease of use and timeliness (Abdinnour-Helm et al, 2005; Zviran et al, 2006).

Intention

Fishbein and Ajzen (1975) define intention as a conative component between attitude and behavior. It represents the desire to conduct the behavior. Website users' continuance intention is an extension of their initial usage decision. According to innovation diffusion theory (Rogers, 1995), adopters reevaluate their earlier acceptance decision and decide whether to continue or discontinue using an innovation.

In fact, many theories have attempted to explain behavioral intention: the TRA, theory of reasoned action (Fishbein, 1980); the TPB, theory of planned behavior (Ajzen, 1991); the TAM, technology acceptance model (Davis, 1989) and the UTAUT, unified theory of acceptance and usage of technology (Venkatesh et al, 2003). The TRA argues that behavior is preceded by intentions which are determined by the individual's attitude toward the behavior and subjective norms (i.e social influence). The TPB extends the TRA by introducing perceived control as an additional determinant of both intentions and behavior. It is defined as the individual perception of his/her ability to perform the behavior (Limayem, Khalifa and Frini, 2000). The TAM developed by Davis (1989) predicts user acceptance of a technology based on the influence of two factors: perceived usefulness and ease of use. TAM posits that user perceptions of usefulness and ease of use determine attitudes toward using the technology. The UTAUT posits that use behavior is determined by behavioral intention which is, in turn, determined by performance expectancy, effort expectancy, social influence and facilitating conditions.

THE PROPOSED MODEL AND RESEARCH HYPOTHESES

This study proposes a model for a website continuance (see Fig 1). The proposed model, initially inspired by the proposals of Agarwal and Karahanna (2000), suggests that individual traits affect behavior and intentions within the context of website usage.

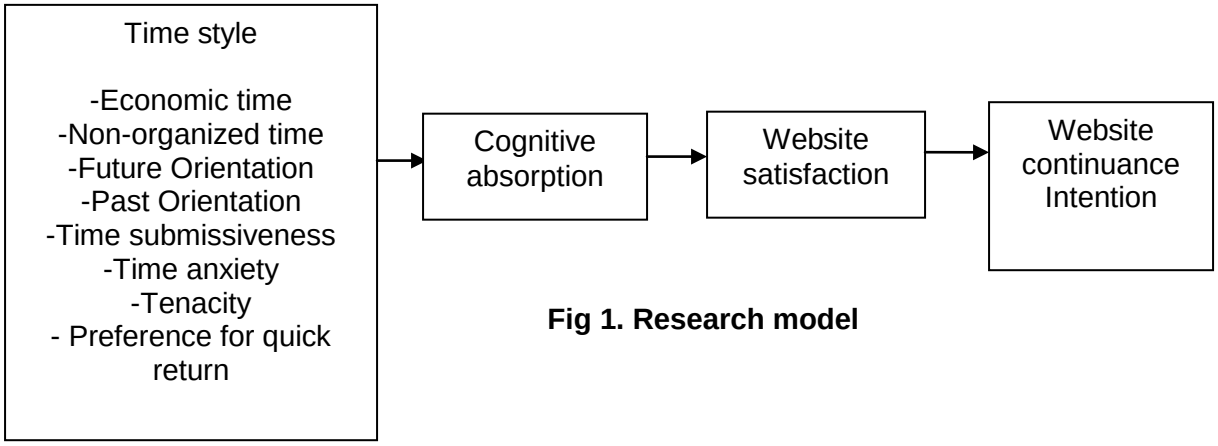

Fig 1. Research model

We propose that Time style, as a personality trait, has an impact on cognitive absorption. In fact, some personality traits has been proposed by researchers as antecedents of cognitive absorption and flow state such as absorption trait, micro-computer playfulness, personal innovativeness (Agarwal et Karahanna, 2000) and cognitive spontaneity (Ghani, 1991). The contribution of this study is to verify the impact of a new antecedent of cognitive absorption, which is Time style. In fact, time styles have proven valuable for depicting attitude and behavior, and significant predictors of human behavior (Bouder-Pailler, 2003; Usunier and Valette-Florence, 2007), it is worthy to pursuit the exploration of its influence on another aspect of this behavior exhibited during interaction with a commercial website, which is cognitive absorption. According to Agarwal and Karahanna (2000), cognitive absorption represents the individual holistic experience during his interaction with a technology (such as website). It is defined as a multidimensional construct similar to flow. This influence is supported by Costa and Mc Crae (1998) who argue that traits are tendencies to exhibit coherent modes of human cognition, affect and behavior, and also by Agarwal and Karahanna (2000) suggesting that personality traits are significant determinants of cognitive absorption.

As for time linearity and economicity (economic time and non-organized time), we suppose that the higher individuals manage efficiently their times; the more likely they will concentrate on task accomplishment, enjoy the interaction and feel they controle the navigation which will amplify their cognitive absorption state.

As regard to temporal orientations (future versus past), it has been suggested that future- oriented people look actively innovation, are more inclined toward action (Bergadaà, 1990) and enjoy using new technologies. In contrast, those past-oriented refuse innovation are less confident and less adventurous (Settle et Alreck, 1991). Therefore, we suppose that when using a technology (such as a website), it is difficult for them to experiment an increased state of cognitive absorption. By synthesizing the above findings, we propose the following hypotheses:

H1.1. Cognitive absorption mediates the relationship between users' time linearity and economicity and website satisfaction.
H1.2. Cognitive absorption mediates the relationship between users' future orientation and website satisfaction.
H1.3. Cognitive absorption mediates the relationship between users' past orientation and website satisfaction.

As for time anxiety (as opposed to time submissiveness), it inhibits the individual to act, let the individual wait passively the events, reject risky and creative activities which may influence negatively his cognitive absorption (Urien, 2000). Finally, individuals that seek quick returns and gratifications (as opposed to tenacious people) and want to accomplish their goals rapidly do not consider website usage as an end in itself but rather a means to fulfill their goals (Ryan and Deci, 2000), which may reduce their cognitive absorption state. Therefore, the following hypotheses are proposed:

H1.4. Cognitive absorption mediates the relationship between users' time submissiveness and website satisfaction.
H1.5. Cognitive absorption mediates the relationship between users' time anxiety and website satisfaction.
H1.6. Cognitive absorption mediates the relationship between users' tenacity and website satisfaction.
H1.7. Cognitive absorption mediates the relationship between users' quick return preference and website satisfaction.

The impact of cognitive absorption on satisfaction is evident since it constitutes a variable related to intrinsic motivation in which the activity is an end in itself and is a source of enjoyment and playfulness (Ryan and Deci, 2000). Woszczynski et al. (2002) developed a theoretical model of playfulness in computer interactions. They suggested that user satisfaction might be a consequence of the playful behavior, and that more-satisfied users will tend to continue to behave more playfully in their computer interactions. Lin et al.(2005), in a study of continued use of a web site, reported a direct relationship between perceived playfulness and satisfaction. Recently, Roca et al. (2006) found that cognitive absorption when using e-learning systems influence positively users' satisfaction.

The impact of user satisfaction on continuance intention is supported by the post-acceptance model of IS continuance proposed by Bhattacherjee (2001) which posits that user satisfaction is a significant predictor of continued usage of a technology. He theorizes that users' website continuance decision is similar to consumers' repurchase decision because both (1) follow an initial (acceptance or purchase) decision, (2) are influenced by the initial use (of technology or product), and (3) can potentially lead to ex post reversal of the initial decision. Many IS researchers have provided empirical support for the relationship between user satisfaction and continuance intention. Cheung and Limayem (2005) and Chiu et al. (2005) found a positive impact of website satisfaction on continuance intention within the context of e-learning. Therefore, we propose:

H2. Users' website satisfaction is positively associated with website continuance intention.

RESEARCH METHODOLOGY

A survey was conducted in this study to test the hypotheses discussed in the previous sections, the data collection method used and the measures of the constructs are presented in the following sections.

Data collection

Data collection is conducted via an experimentation preceded and followed by a survey administration. A pretest of the questionnaire (including all constructs) was carried out to ensure content validity and to improve the wording of several items. The sample consisted of 300 university students (66,7% male and 33,3% female). On average, the respondents were 22 years old and had 3 years of experience in using commercial websites. This study recruited students subjects because they are expected to become the primary customers in online shopping in the near future (Han and Ocker, 2002; Metzger et al, 2003).

Measures

The four measures used in this study were mainly adapted from relevant prior studies. All items were measured using a seven-point Likert scales anchored from 'Stongly disagree' to 'Strongly agree', one exception for those related to website satisfaction which used a five-point Likert scale. Table 1 summarizes the different measurement scales used in this study.

Table 1: Summary of measurement scales

Concepts	Dimensions	Nbre items	alpha	Source
Time style	Economic time	4	0.98	Usunier and Valette-Florence (1994)
	Non-organized time	3	0.96	
	Future Orientation	4	0.99	
	Past Orientation	4	0.98	
	Time submissiveness	4	0.97	
	Anxiety	4	0.83	
	Tenacity	3	0.98	
	Pref. for quick return	3	0.95	
Cognitive absorption	Cognitive absorption	20	0.94	Agarwal and Karahanna (2000)
Website satisfaction	Website satisfaction	12	0.94	Abdinnour-Helm et al.(2005)
Website continuance Intention	Website continuance Intention	3	0.94	Chiu et al (2005)

DATA ANALYSIS AND DISCUSSION

Measurement model

The reliability and validity of the measurement instrument was evaluated using reliability and convergent validity criteria. Reliability of the survey instrument was established by calculating Cronbach's alpha to measure internal consistency. As shown in Table 2, all values were above the recommended level of 0.7, one exception was for the scale of time submissiveness (α=0.3634) which was deleted. Each of the analysis indicates a KMO>0.5 and a significant test of Bartlett. We conducted a confirmatory factor analysis (CFA) to test the convergent validity of cognitive absorption and website satisfaction construct.

Table 2. Constructs factor analysis and reliability

Concepts	Dimensions	Nbre items	KMO	Test of Bartlett	Alpha
Time style	Economicity and linearity of time	7	0.861	$\chi 2$= 1075,567 ; p=0,000	0.8581
	Future Orientation	4	0.815	$\chi 2$= 533,769 ; p=0,000	0.8561
	Past Orientation	4	0.790	$\chi 2$= 512,600 ; p=0,000	0.8469
	Time submissiveness	4	0.540	$\chi 2$= 49,643 ; p=0,000	0.3634
	Anxiety	3	0.619	$\chi 2$= 127,645 ; p=0,000	0.7169
	Tenacity	3	0.707	$\chi 2$= 326,480 ; p=0,000	0.9203
	Pref. for quick return	3	0.5	$\chi 2$= 205,677 ; p=0,000	0.8279
Cognitive absorption	Cognitive absorption	20	0.805	$\chi 2$= 518,312 ; p=0,000	0.91
Website satisfaction	Website satisfaction	12	0.843	$\chi 2$= 765,985 ; p=0,000	0.91
Website continuance Intention	Website continuance Intention	3	0.769	$\chi 2$= 814,370 ; p=0,000	0.94

Model testing results

Mediating impact of cognitive absorption between users' time styles du temps and website satisfaction:

Based on Baron and Kenny (1986), a mediating variable M is a variable that permits to explain the process by which a variable X influences a variable Y; X is the independant variable, Y the dependant variable and M the mediating variable. They precise also that:

- If the influence of X on Y disappears totally by the introduction of M, it is the case of a complete mediation. Baron and Kenny (1986) propose four conditions:
  - If Y= a1 + b1 X + error1, b1 is significant;

- If M= a2 + b2 X + error2, b2 is significant;
- If Y= a3 + b3 X + b4 M + error3, b4 is significant;
- b3 in the third condition is not significant.

- If the influence of X on Y has simply reduced but not disappeared, it is the case of a partial mediation. Hence, only one part of the influence of X on Y is exerted via the mediating variable and the other part is directly exerted on the variable Y.
- If all the conditions are verified excepted the last, we must calculate h as follows:

$$h = \frac{b_2 * b_4}{\sqrt{b_4^2 * s_2^2 + b_2^2 * s_4^2 + s_2^2 * s_4^2}}$$

In this article, and in order to test the mediating impact of cognitive absorption (M) between users' time styles (X) and website satisfaction (Y), regression method is used. The results are the following:

Condition 1: The variable X (time style) must have a significant impact on the variable Y (Satisfaction). Regression analysis reveal that time style explain 22,3% of the website satisfaction variance (R 2= 0,223 ; Adjusted R2 = 0,207) and that the model issued from this regression is significant (F= 13,982 ; P=0,000).

Table 3. Impact of time style on website satisfaction

Y= + X					
variable	**β**	**E std**	**β std**	**T**	**p**
constante	1,053E-16	,051		,000	1,000
Linearity and economicity of time	,159	,052	,159	3,086	,002
Future Orientation	,241	,052	,241	4,670	,000
Past Orientation	,04	,052	,0041	0,789	,431
Tenacity	,256	,052	,256	4,973	,000
Time anxiety	-,269	,052	-,269	-5,214	,000
Quick return preference	,06	,052	,07	0,131	,896

The first condition is verified.

Condition 2:

The variable X (Time style) must have a significant impact on the variable M (Absorption).

Table 4. Impact of time style on cognitive absorption

Y= + M					
variable	**β**	**E std**	**β std**	**T**	**p**
constante	9,282E-04	,052		,018	,986

Linearity and economicity of time	,134	,053	,133	2,544	,011
Future Orientation	,261	,052	,261	4,983	,000
Past Orientation	,095	,052	,095	1,817	,070
Tenacity	,261	,052	,261	4,985	,000
Time Anxiety	-,176	,052	-,176	-3,354	,001
Quick return preference	-,050	,053	-,050	-0,961	,337

The second condition is verified.

Condition 3 et 4 :

Since time style (X) is a multidimensional variable, regression analysis is conducted for each dimension of X:

-As showed in Table 5, with the introduction of cognitive absorption, the impact of Linearity and economicity of time on satisfaction has completely disappeared and becomes non significant (p=0.129). We conclude that cognitive absorption mediates completely the relation between linearity and economicity of time and website satisfaction.

Table5. Mediating impact of CA between time linearity and economicity-Satisfaction

Y= $+X_1$+M (N=300, R2=0,457 ; R2=0,453)					
variable	**β**	**E std**	**β std**	**T**	**p**
constante	-3,80E-03	,043		-,089	,929
Linearity and economicity of time	0,06	,043	,066	1,520	,129
Cognitive absorption	0,663	,043	,664	15,355	,000

-We notice also that with the introduction of cognitive absorption, the impact of future orientation on satisfaction has completely disappeared and becomes non significant (p=0.137). We conclude that cognitive absorption mediates completely the relation between Future orientation and website satisfaction.

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Table6.Mediating impact of CA between future orientation and website satisfaction

Y= $+X_2$+M (N=300, R2=0,456 ; R2=0,453)					
variable	**β**	**E std**	**β std**	**T**	**p**
constante	-3,89E-03	,043		-,091	,928
Future Orientation	0,066	,044	,066	1,492	,137
Cognitive Absorption	0,655	,044	,655	14,760	,000

-Past orientation didn't have an impact on website satisfaction. Hence, and even with the introduction of the variable Absorption as a mediating variable, this impact is still non significant (p=0,556).

Table7. Mediating impact of CA between past orientation and website satisfaction

Y= +X_3+M (N=300, R2=0,453 ; R2=0,449)					
variable	**β**	**E std**	**β std**	**T**	**p**
constante	-4,16E-03	,043		-,097	,923
Past Orientation	-0,025	,043	-,025	-,589	,556
Cognitive Absorption	0,674	,043	,675	15,630	,000

. As for Time anxiety, as seen in Table 8, with the introduction of cognitive absorption cognitive as a mediating variable, the impact of Time anxiety on website satisfaction has been increased (β= -,154 instead of -,176).

Table8. Mediating impact of CA between time anxiety and website satisfaction

Y= +X_5+M (N=300, R2=0,475 ; R2=0,472)					
variable	**β**	**E std**	**β std**	**t**	**p**
constante	-3,90E-03	,042		-,093	,926
Time anxiety	-,154	,043	-,154	-3,609	,000
Cognitive Absorption	0,645	,043	,645	15,095	,000

It is still significant (p=0,000). Hence, we calculate h.
b2 = -,176 ; b4= 0,645, s2 =0,052, s4 =0,043

$$h = \frac{0.176*0.645}{\sqrt{(0.645^2 * 0.052^2) + (0.176^2 * 0.043^2) + (0.052^2 * 0.043^2)}} = 3.29 > 1.96$$

As h = 3.29>1,96, cognitive absorption mediates partially the relation between time anxiety and website satisfaction.

- With the introduction of cognitive absorption as a mediating variable, the impact of Tenacity on website satisfaction has been reduced (β=0,091 instead of 0,256) and is still significant (p=0,040). These results indicate a positive influence of cognitive absorption on satisfaction. Tenacity influences positively website satisfaction.

Table9. Mediating impact of CA between tenacity and website satisfaction

Y= +X_4+M (N=300, R2=0,460 ; R2=0,456)					
variable	**β**	**E std**	**β std**	**T**	**p**
constante	-4,446E-03	,043		-,105	,917
Tenacity	0,091	,044	,091	2,060	,040
Cognitive absorption	0,648	,044	,649	14,648	,000

The conditions 1, 2 and 3 are verified excepted for the fourth condition (p= 0,040), we

must hence calculate h.
b2 = 0,261 ; b4= 0,648, s2 =0,052, s4 =0,044

$$h = \frac{0.261*0.648}{\sqrt{(0.648^2 * 0.052^2) + (0.261^2 * 0.044^2) + (0.052^2 * 0.044^2)}} = 2.08 > 1.96$$

As H=2,08 >1,96, we conclude that cognitive absorption mediates partially the relation tenacity-Website satisfaction.

- Immediate results preference didn't have an impact on website satisfaction. Hence, and even with the introduction of the variable Absorption as a mediating variable, this impact is still non significant (p=0,286).

Table 10. Mediating impact of CA between immediate results preference and website satisfaction

Y= +X_6+M (N=300, R2=0,475 ; R2=0,472)					
variable	**β**	**E std**	**β std**	**t**	**p**
constante	-4,33E-03	,043		-,101	,919
Quick return preference	,045	,043	,046	1,068	,286
Absorption	0,674	,043	,675	15,699	,000

We conclude that only H1.1, H1.2, H1.5, H1.6 are supported and hence, H1 is partially supported.

Impact of website satisfaction on intention:

Regression analysis reveal that website satisfaction explains 37,8% of the website continuance intention variance (R deux= 0,378 ; R deux ajusté= 0,376). The model issued from this regression is significant (F= 181,316; P=0,000) and is presented as follows:

Website continuance intention = 0,615 website satisfaction
(t=13,465 ; p=0,000)

This model indicates that website satisfaction impact on website continuance intention is positive and significant. Hence, H2 is supported. The findings are consistent with prior studies in information system (Chiu et al, 2005; Cheung and Limayem, 2005; Hsu et al, 2006; Tong et al, 2006) and provide strong support for the post-acceptance model of IS continuance (Bhattacherjee, 2001) indicating that website satisfaction is the main determinant of continuance intention. As a result, more the individual is satisfied with the site, more his continuance intention will be.

CONCLUSION AND IMPLICATIONS

The objective of this study is to gain a better understanding of factors influencing website satisfaction and continued usage. This study not only enhances our understanding of consumer behavior on the Web but also enriches the satisfaction literature by supporting the existence of mediating processes between personality traits and behavior in human-computer environments. Our findings showed that cognitive absorption exhibits a strong mediating effect on the relationship between users' time styles and website satisfaction. Cognitive absorption is a full mediator between Linearity and economicity of time, Future Orientation; and website satisfaction; and a partial mediator between tenacity-website satisfaction, time anxiety-website satisfaction.

The findings of the present study have various implications for research as well as practice. Users' Time style was found to be a determinant of website satisfaction. As a result, economic perception of time, future orientation and tenacity are important antecedents of website satisfaction. This result is consistent with Usunier and Valette-Florence (1994) who are in favor of the introduction of time style as a key determinant of Internet users' behavior.

The study also provides several practical implications. First, website satisfaction, which constitutes a challenge for enterprises because of users' little switching cost from one site to another, is an important determinant of website continuance intention. Website designers must develop attracting and stimulating websites and use multimedia in order to increase users' cognitive absorption state and as a result website satisfaction. In fact, Gharbi, Ettis and Ben Mimoun (2002) demonstrated that website atmosphere influences positively the flow state. Finally, practitioners should be aware that time style can affect user satisfaction and hence must develop relational marketing with their actual and even potential clients, evaluate their temporal characteristics using the time style scale on their websites and taking the necessary actions.

Although the findings are encouraging and useful, the present study has certain limitations that necessitate future research. First, whether our findings could be generalized to other systems or eservices or populations and in other cultural contexts is unclear. Further research is necessary to verify the generalizability of our findings. Second, this study only modeled satisfaction as the direct determinant of continuance intention. Further research should add other constructs (subjective norms, self-efficacy) and examine their effects on continuance intention and also moderator variables such as « habit » (cheung and Limayem, 2005) which moderates the relation between website satisfaction and continuance intention.

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