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Title

Web Acceptance and Usage Model:
A Comparison between Goal-directed and Experiential Web Users

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Abstract

In this paper we analyse the Web acceptance and usage between goal-directed users and experiential users, incorporating intrinsic motives to improve the particular and explanatory TAM value –traditionally related to extrinsic motives-. A field study was conducted to validate measures used to operationalize model variables and to test the hypothesised network of relationships. The data analysis method used was Partial Least Squares (PLS). The empirical results provided strong support for the hypotheses, highlighting the roles of flow, ease of use and usefulness in determining the actual use of the Web among experiential and goal-directed users. In contrast with previous research that suggests that flow would be more likely to occur during experiential activities than goal-directed activities, we found clear evidence of flow for goal-directed activities. In particular the study findings indicate that flow might play a powerful role in determining the attitude towards usage, intention to use and, in turn, actual Web use among experiential and goal-directed users.

Keywords: TAM, flow, usefulness, ease of use, enjoyment, experiential behaviour, goal-directed behaviour

INTRODUCTION

Few studies focus directly (1) on Web acceptance and usage adopting a user-centred perspective, and (2) on the motives that affect behaviour. In fact, Novak *et al.* (2000) suggest that among marketing academics and Internet practitioners alike, there is a lack of genuine knowledge about the factors that bring about effective interactions with online customers. More recently, Parasuraman and Zinkhan (2002) point out that there is a considerable knowledge gap between the practice of online marketing and the availability of sound, research-based insights and principles for guiding that practice. In this situation of development, a model based on TAM (Technology Acceptance Model) and flow (essentially defined as an intrinsically enjoyable experience), is proposed to describe the main motives that (1) affect Web acceptance and usage and (2) make using the Web a compelling customer-experience. The purpose of this study is thus to reveal whether there exists the relation between flow and TAM-beliefs on the Web, and how the flow impacts the attitude and intention to use Web under a theoretically-based model.

On the one hand, not everyone has agreed that extrinsic motives (e.g. how useful the technology would be) are sufficient. Over the years, there is a growing significant body of theoretical and empirical research regarding the importance of the role of intrinsic motives (e.g. how enjoyable the technology would be) in understanding facets of behaviour (e.g., Bagozzi *et al.,* 1999; Eastlick and Feinberg, 1999; Holt, 1995; Hopkinson and Pujari, 1999; Sherman and Mathur, 1997). Specifically, there is a significant body of theoretical and empirical evidence regarding the importance of the role of intrinsic motives in IT (Information Technologies) acceptance and use (see Davis *et al.*, 1992; Malone, 1981; Venkatesh and Speier, 1999, 2000; Webster and Martocchio, 1992). There is thus the need for incorporating intrinsic motives and, in turn, focusing on different behaviour-types (i.e. goal-directed and experiential). In fact, TAM-based studies are essentially work related and focused on utilitarian use (i.e. goal-directed use). Even though several papers (e.g. Agarwal and Karahanna, 2000; Davis *et al*., 1992; Igbaria *et al*., 1996) have introduced perceived enjoyment in Web -as intrinsic motivation-, they still focus on a task-oriented perspective.

Therefore, assuming by previous research that perceived enjoyment could occur during goal-directed activities, there may be differences between goal-directed and experiential users in the relative influence of the several determinants of Web usage. Activities can be perceived to be instrumental –i.e. extrinsic- in achieving outcomes that are distinct from the activity itself. Likewise, activities can be performed for no apparent reinforcement other than the process of performing the activity –i.e. intrinsic-. Experiential and goal-directed users would not thus weight extrinsic and intrinsic motives in the same way when on the Web. For instance, as Hoffman *et al.* (2003) suggest, "the general and broad nature of flow measurement to date has precluded a precise investigation of flow during goal-directed versus experiential activities". Furthermore, "one important future research area is specifying and testing conceptual frameworks which differentiate experiential and task-oriented flow. Conceptual models of flow which have been developed and tested to date do not in any way differentiate between experiential and task-oriented flow. The relative importance of antecedents of flow (…) may well differ across rational vs experiential processing modes".

Our objective is thus to evaluate the mediating role of main extrinsic and intrinsic motives explaining goal-directed (i.e. for work and to search for specific information) and experiential (i.e. traditionally associated with recreational surfing) acceptance and Web usage. The results could be used (1) to explain, and (2) to improve the users' experience of being and returning to the Web.

This paper is outlined as follows. First, the original version of the TAM is introduced. The next section starts with a brief outline of the framework and provides 10 hypotheses that can be derived from this framework. We then describe the research method which was adopted to validate the model. Results and analysis follow research design. Finally, we give an interpretation of the findings and discuss the contributions and limitations of our work.

THEORETICAL BACKGROUND: A BRIEF PERSPECTIVE

Research in the HCI (*Human-Computer Interaction*) tradition has long asserted that the research of human factors is a key to the successful design and implementation of technological devices, and should include extrinsic and intrinsic motives. In this context and following *HCI-Research in the*

MIS (Management Information System), individuals have a full range of opportunities to interact with technologies for different motives: extrinsic or intrinsic. Motives have been characterized as intrinsic, emphasizing internal rewards such as pleasure and satisfaction from performing the behaviour, or extrinsic, focusing on external rewards including, for instance, incentives and gratifications. It is thus important to consider different the motives based, respectively, on the TAM and the flow experience to understand the acceptance and Web usage.

Technology Acceptance Model (TAM)

Several researches have demonstrated the validity of TAM across a wide variety of IT, also including E-Mail and Web. Specifically and focusing our study on Web acceptance and usage, TAM suggests that there exists a direct and positive effect between attitude towards Web usage, usage intention and actual usage. Perceived usefulness and ease of use determine the attitudes toward using the Web. In turn, usage intentions are determined by these attitudes and perceived usefulness. Finally, usage intentions lead to actual Web use.

:: Take in Figure 1 ::

Perceived usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989); as we commented above, the perception that users will want to perform an activity “because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions” (Davis *et al.*, 1992). Perceived ease of use is defined as “the degree of which a person believes that using a particular system would be free of effort” (Davis 1989). On the one hand, perceived usefulness influences Web usage indirectly through attitude and directly through intent. On the other hand, as perceived ease of use has an inverse relationship with the perceived complexity of use of the technology, it affects perceived usefulness. TAM thus posits that perceived usefulness is influenced by perceived ease of use. A system that is difficult to use is less likely to be perceived as useful; in other words, between two systems offering identical functionality, a user should find the one that is easier to use more useful. Nevertheless, perceived usefulness is not hypothesized to have an impact on perceived ease of use. Davis

(1993) states that "(…) making a system easier to use, all else held constant, should make the system more useful. The converse does not hold, however". Davis (1989) stated his original TAM model where he found a stronger support of perceived ease of use construct with perceived usefulness rather than with intention to use. "From a causal perspective, the regression results suggest that ease of use may be an antecedent to usefulness, rather than a parallel, direct determinant of usage". Later, Davis (1993) noted that perceived ease of use may actually be a prime causal antecedent of perceived usefulness.

These relationships have been examined and supported by many prior studies (e.g., Davis, 1989, 1993; Davis *et al.*, 1989; Venkatesh and Davis, 1996, 2000). However, as we commented above, there is a significant body of theoretical and empirical evidence regarding the importance of the role of intrinsic motives in Web acceptance and use. Researchers have become increasingly aware of the relevance of the non-extrinsic motives of use such as intrinsically-enjoyable experiences (i.e., flow) in understanding attitudes and behaviours. Following, we evaluate the role of flow (1) affecting the Web-based behaviour as a highly-subjective variable among individuals, and, in turn, (2) explaining and improving the users' experience of being in and returning to the Web.

Flow Model

Flow, defined as "the holistic sensation that people *feel* when they act with total involvement" (Csikszentmihalyi, 1975), has been recommended as a possible metric of the online user experience (Koufaris, 2002). Flow is a positive, highly-enjoyable state of consciousness that occurs when our perceived skills match the perceived challenges we are undertaking. When this occurs an individual derives intrinsic enjoyment from the activity and tends to continue with it. This is known as a state of flow. If the task is too easy the person becomes bored. If the work demands skills beyond the capabilities of the individual, anxiety is created. When our goals are clear, our abilities are up to the challenge and feedback is immediate. We become involved in the activity and intrinsically motivated.

A common measure of flow could be thus the level of perceived enjoyment of an activity, similar to the emotional response of pleasure from environmental psychology (see Koufaris, 2002). In fact, as Davis *et al.* (1989) stated, perceived enjoyment can be conceptualized as "the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated". Flow emphasizes a user's subjective enjoyment of the interaction with the technology, not a perception of the medium per se (Trevino and Webster, 1992). That is to say, the concept of flow is a possible metric of the online user experience, and could be defined as an intrinsically enjoyable experience.

Many extensions to the original TAM have been proposed. Within the IS domain, Davis *et al.* (1992) applied motivational theory to understand new technology adoption and use. These authors proposed a new model, motivational model (MM). One factor was renamed (usefulness → extrinsic motivation) and one additional factor was introduced (perceived enjoyment as intrinsic motivation). As we noted above, extrinsic motivation describes an individual's personal gain associated with the use of a particular technology. On the contrary, intrinsic motivation describes the perceived enjoyment associated to the use of a particular technology itself, different from possible performance outcome of the use (see also Vallerand, 1997, for a recent review). MM and TAM have conceptual and empirical similarities; in fact, usefulness and extrinsic motivation are quite similar. Venkatesh *et al.* (2002) introduced an extending TAM, which integrates the intrinsic motivation factor from the motivational model with the original TAM. The measures of intrinsic motivation included enjoyment with the system, pleasance of systems use, and fun of systems use. Most recently, Koufaris (2002) applied flow theory to online consumer behaviour to examine emotional and cognitive responses when visiting an online store. This author expected engagement with the site would result in intention to return to the store, outlined earlier as e-loyalty. Results proved that product involvement, web skills, value-added search mechanisms, and challenges (to perform to best of user's ability and 'stretching' user capabilities) led to shopping enjoyment, and ultimately to intention to return to the site.

In this sense, intrinsically perceived enjoyment has been identified as an important intrinsic-motivational factor in Web acceptance and usage. For example, Davis *et al.* (1992) theorised that

perceived enjoyment directly influenced computer-usage intention (i.e. a word processing program, *WriteOne*). Also, Igbaria *et al.* (1996) studied the effect of perceived fun-enjoyment. In this study, support was found for a positive relationship between perceived fun-enjoyment and system usage among managers and professionals who either had a microcomputer on their desk or had ease access to one in the daily performance of their job.

Perceived enjoyment associated by an individual with a particular act, could thus have a major impact on an individual's affective response to the Web, its attitudes and behaviours. However, although regarding previous research perceived enjoyment could occur during goal-directed activities, experiential users are specifically moved by an intrinsic motive (e.g. "to feel pleasure and enjoyment from the activity itself"; Bloch *et al.*, 1986), whereas among goal-directed users browsing appears to involve more extrinsic rewards than intrinsic rewards. There might be thus differences between goal-directed and experiential users in the relative influence of the various determinants (e.g. flow state) of Web acceptance and usage.

Experiential users show ritualized orientations exploring the Web in their daily quest for the latest interesting sites. Users search for those opportunities which provoke them to further explore Web sites. Thus, experiential users do not essentially value the Web as a medium that lets them achieve set goals, but they browse orientated towards enjoyable navigational choices. It is an *autotelic* experience, where the experience itself acts as a primary intrinsic reward, even if extensive external rewards are present. On the contrary, when usage is extrinsic, instrumental issues such as perceived usefulness ought to come into one's main decision making criteria for future usage (adapted from Chin *et al.*, 1996). Using the Web for its informational value and purchase utility -such as directly searching for information to complete a task or to reduce purchase uncertainty- are goal-directed behaviours, whereas relatively unstructured recreational use are experiential behaviours (see Hoffman and Novak, 1996).

As Hoffman and Novak (1996) summarized, "goal-directed flow activities in a CME are instrumental and utilitarian in nature, extrinsically motivated, characterized by situational involvement, and result in directed search and learning. In contrast, experiential flow activities are

ritualistic and hedonic, intrinsically motivated, characterized by enduring involvement, and result in non directed search and learning". See Table 1.

:: Take in Table I ::

Therefore, experiential and goal-directed users would not weight extrinsic and intrinsic motives in the same way when on the Web. Experiential users are involved in the activity for the affective responses it provides (desire for enjoyment plus exploration and playfulness) rather than for utilitarian purposes. We could thus find relevant difference in (1) the relation between flow and TAM-beliefs on the Web, and how (2) the flow impacts the attitude and intention to use Web. Specifically, intrinsic motives -such as perceived enjoyment- should influence on attitude towards usage and intention greater among experiential users than among goal-directed users. This positive subjective experience becomes an important reason for acceptance and performance an activity among experiential users even though they considerer the Web as relatively low in perceived usefulness. On the contrary, goal-directed users may be willing to tolerate (i.e. accept and use) an annoying interface in order to access to functionality (as a salient and expected reward) -that is the most important-, while flow will not be able to compensate for a system that doesn't do a useful task. Likewise, according to self-perception theory (see Bem, 1972) and the over-justification effect (see Lepper *et al.* 1973), when people attribute their behaviour to external rewards, they discount *interest* as a cause of their behaviour, and intrinsic motivation will be, therefore, lower. It formalizes the idea emphasized in the psychology literature that the subject finds the task less attractive when offers an *expected and salient reward* for engaging in an otherwise enjoyable task. That is to say, the subject would then infer that behaviour is motivated by the reward itself rather than by intrinsically perceived-enjoyment. This effect will be stronger when external reward is a focus of central attention (i.e. goal-directed users) because the non-distraction increases the tendency for subjects to think about the reward. On the contrary, experiential users usually engage in unstructured recreational that reduces their tendency to think about a possible external reward.

Based on the above comments, we propose the following hypothesis. See Figure 2.

H1: Higher levels of flow (i.e., perceived enjoyment) will be positively related to higher levels of attitude towards usage

H1.a: The relationship between flow and attitude towards usage will be stronger among experiential users than among goal-directed users

H2. Higher levels of flow will be positively related to higher levels of intention to use Web

H2.a: The relationship between flow and intention to use Web will be stronger among experiential users than among goal-directed users

On the contrary, regarding extrinsic motives, we hypothesize a stronger influence of perceived usefulness to (1) attitude towards using and (2) behavioural intention of Web usage in goal-directed than in experiential users. It is possible that when the usage experience is less enjoyable and stimulating and relatively more instrumental, the impact of perceived usefulness on both dimensions will be higher. This phenomenon is also based on a generic cognitive-consistency argument. When usage is emotional, instrumental issues such as perceived usefulness ought not to come into one's main decision-making criteria for future usage (see Chin *et al.*, 1996). The relative influence of usefulness would be thus lower among experiential users. Experiential users could in this way tend to underestimate the usefulness of the Web as a behaviour-driver; they intrinsically enjoy the process and, compared to those who are goal-directed users, extrinsic motivation will be lower.

Based on the above evidences, we propose the following hypothesis. See Figure 2.

H3. Higher levels of perceived usefulness will be positively related to higher levels of intention to use Web

H3.a: The relationship between usefulness and intention to use Web will be stronger among goal-directed users than among experiential users

H4. Higher levels of perceived usefulness will be positively related to higher levels of attitude towards usage

H4.a: The relationship between usefulness and attitude towards usage will be stronger among goal-directed users than among experiential users

However, although the perceived usefulness could affect the intention and the attitude more sensitively among goal-directed users, these individuals will *try* a technology (i.e., the Web) -even if they do not have a positive attitude towards using the same- because it may provide productivity enhancement. Goal-directed users might thus engage in a behaviour that increases rewards without even adjusting their attitudes (see Mathieson *et al.*, 2001). These users need to perceive the system as being useful or they will not attempt to use it. Even though they believe that their behaviours are not a "*good thing to do*" in a subjective sense, they do it anyway in the hope of obtaining rewards from the organization. That is to say, attitude towards usage will be a less relevant mediator between perceptions and intention to use Web. As López and Manson (1997) summarize, "the research provided support for Davis *et al.* (1989) argument that in a real work environment, behavioural intentions are based primarily on performance-related elements, rather than on the individual's attitude towards the behaviour (Taylor and Todd, 1995a)". In fact, attitude was originally included as a mediator between the personal belief-based constructs and the behavioural intention (see Davis *et al.*, 1989), but later was dropped from the model because it was finally found to be a weak mediator -among MBA students that used a word processing program- (see Davis *et al.*, 1992). On the contrary, as Mathwick *et al.* (2002) state, "consumers who approach retail environments to browse (Bloch *et al.*, 1986), or enjoy the experiential aspects of shopping (Bellenger and Korgaonkar, 1980) are motivated by the process rather than by shopping goals or outcomes (Hoffman and Novak, 1996)".

Based on the above evidences, we propose the following hypothesis. See Figure 2.

H5: Higher levels of attitude towards usage will be positively related to higher levels of intention to use Web

H5.a: The relationship between attitude towards usage and intention to use Web will be stronger among experiential users than among goal-directed users

On the other hand, as previously commented, goal-directed users tend to use the Web to the extent they believe it will help them access to usefulness and perform their job better. They wish to find the contents and services in the shortest possible time-span and judge them according to instrumental decision-criteria. “Users may be willing to tolerate a difficult interface in order to access to functionality that is very important, while no amount of ease of use will be able to compensate for a system that doesn’t do a useful task” (Davis *et al.*, 1989). Therefore, perceived ease of use will thus influence attitude via usefulness, and will reduce its direct effect on attitude towards usage.

Users for whom task achievement is most salient would be influenced more significantly by perceived ease of use (via usefulness), lending support to the hypothesis that perceived ease of use is positively associated with usefulness (i.e. *If difficulties of use can not be overcome, then the user may not perceive the usefulness of IS*). Utilitarian browsing is more efficient and focused, while experiential motivations are associated with extended and less confident browsing. That is to say, goal-directed users do not want to be distracted from their tasks. When users engage in goal-directed behaviour, they are motivated to perform their activities in an efficient and timely manner -with a minimum of irritation- (adapted from Babin *et al.*, 1994). Perceived ease of use -as a factor facilitating task performance- is thus likely to be weighted more strongly by goal-directed users. “Users of modern personal computers generally consider graphical user interfaces to be more productive than older text-based interfaces because they are easier to use—although objectively, they may not be more *useful* than the older style interface” (Venkatesh and Morris, 2000).

Therefore, when goal-directed users perceive Web sites as being easier to use, they can more *easily* and *efficiently* obtain the desired performance (via usefulness), leading to time and effort savings. Also, experiential users tend to be less-experienced, while more experienced users tend to view the web in a utilitarian way (related to goal-directed users). Therefore, perceived ease of use would positively and directly influence attitude towards usage among goal-directed users less than experiential users.

Based on the above evidences, we propose the following hypothesis. See Figure 2.

H6. Higher levels of perceived ease of use will be positively related to higher levels of attitude towards usage

H6.a: The relationship between ease of use and attitude towards usage will be stronger among experiential than among goal-directed users

H7. Higher levels of perceived ease of use will be positively related to higher levels of perceived usefulness

H7.a: The relationship between ease of use and usefulness will be stronger among goal-directed users than among experiential users

In this context and following HCI Research in the MIS, research has shown that perceived enjoyment not only has a positive effect on the usefulness (e.g. Agarwal and Karahanna, 2000), but it also correlates with the perceived ease of use (e.g. Csikszentmihalyi, 1975).

On the one hand, when users are in the flow state, their attention is totally focused on their activity. As Ghani and Deshpande (1994) pointed out, the total concentration on an activity and the enjoyment which one derives are the key characteristics of flow. Users in a flow state focus their attention on a limited stimulus field, filtering out irrelevant thoughts and perceptions. Therefore, flow experienced by users will affect their performance positively.

Also, Agarwal and Karahanna (2000) found a multi-dimensional construct called cognitive absorption (similar to flow state) which had a significant influence on usefulness over and above ease of use, lending support to the hypothesis that perceived enjoyment is positively associated with usefulness. As these authors suggest, the relationship between cognitive absorption and perceived usefulness derives from the self-perception theory; individuals will seek to rationalize their actions and thus reduce cognitive dissonance. Users first seek explanations outside themselves for their behaviour, and when they cannot find a suitable extrinsic cause for their behaviour, *they look to intrinsic causes*. That is to say, individuals who often behave in certain ways may infer that they, for instance, enjoy behaving in those ways (see Bem, 1972). Viewed

another way, the user, for instance, rationalizes "*I am voluntarily spending a lot of time on this and enjoying it, therefore, it must be useful*" (see Agarwal and Karahanna, 2000).

Accordingly, the relationship between perceived enjoyment and usefulness could be significantly greater among experiential users, whose behaviours tend to be (1) initially less confident and rational and more impulsive; and (2) more exploratory and playful. Also, experiential behaviours tend to have a significant influence on the extent of Web use. The causal effect among both constructs thus implies that flow has a greater effect on perceived usefulness among users that seek intrinsic rewards -such as pleasure and satisfaction from performing the behaviour- that among goal-directed users. Goal-directed users (1) focus on extrinsic and real rewards including, for instance, incentives and gratifications; and, thus, (2) do not need to intrinsically rationalize their actions (*they are just doing it for the real external-rewards and not for enjoyable experiences*).

Therefore, when usage is intrinsic, compelling issues ought to come into one's main antecedent of perceived usefulness, whereas –as previously commented- when usage is instrumental, other factors -such as perceived ease of use- would come into the most relevant antecedent of perceived usefulness.

Based on the above evidence, we propose the following hypothesis. See Figure 2.

H8. Higher levels of flow (i.e., perceived enjoyment) will be positively related to higher levels of perceived usefulness

> *H8.a: The relationship between flow (i.e., perceived enjoyment) and usefulness will be stronger among experiential users than among goal-directed users*

Finally, Csikszentmihalyi (1975) argued that flow could be enhanced when an individual perceived an activity as being easily executed. That is to say, perceived ease of use can be associated with perceived enjoyment: *the easier the system is to use, the more enjoyable it is*. Empirical research has also found support for this relationship in traditional settings (Igbaria *et al.*, 1996). It is conceivable that a Web site that is easier to use provides better feedback to a visitor's stimuli, and, consequently, could lead to increased perceived enjoyment.

A possible explanation lies in the perceived control by users. In combination with greater web-related skills, greater perceived control could lead to greater flow –via ease of use-. In fact, Csikszentmihalyi (1975) argued that activities that allow for control facilitate perceptions of flow. Moreover, Ghani *et al.* (1991) found flow (1) to significantly correlate with perceived control and (2) to be facilitated (2.1) by the medium adapting to feedback from the individual, and also (2.2) by providing explicit choices among alternatives. Likewise Webster *et al.* (1993) found it significantly correlated with cognitive enjoyment. As Trevino and Webster (1992) suggest, objective technology characteristics (e.g., programmability, malleability, customizability) may be related to flow through their impact on the user's perception of control in the CMC technology interaction. For example, a control belief in the usage of Internet might be "*I have easy access to a high-speed connection*" with a corresponding perceived facilitation of "*a high-speed connection is important to using the Internet*".

Both behaviours (i.e. experiential and goal-directed) involve congruent, above threshold, skills and challenges. Nevertheless, goal-directed users use information to reduce uncertainty and to accomplish tasks, and their approach to communication is often instrumental (see Lefcourt, 1982). Goal-directed activities usually relate more strongly to skill and control. Therefore, we expect that ease of use is thus relevant in reducing time and effort expenditures and increasing perceived control and, in turn, perceived enjoyment. That is to say, goal-directed users are likely to feel more able to perform the activity, and thus show a high comfort level. They would be more inclined to feelings of enjoyment while become involved in the activity

On the other hand, experiential activities usually relate less strongly to skill and control and most strongly to challenge and arousal. These users seek out optimal stimulation and challenging activities to evoke flow states. However, experiential users tend to (1) be less-experienced and (2) see the web in a hedonic, playful way, while more experienced users tend to view the web in a utilitarian way, or a means to accomplish tasks (i.e. goal-directed users).

Therefore, being experiential users less Web-confident, and extending above arguments, perceived ease of use –-as a factor facilitating flow experiences- will be also weighted strongly by

them. As Csikszentmihalyi (1997) summarizes, “when a person is anxious or worried, for example, the step to flow often seems too far, and one retreats to a less challenging situation instead of trying a cope”. Otherwise, too much stimulation will lead experiential users to making errors and feel out of control (i.e., anxiety as a negative affective reaction toward Web use). The more confident and comfortable user *feels* on the Web, the more likely it is that he/she will enjoy it.

Therefore, based on the above evidence, we propose the following hypothesis. See Figure 2.

H9. Higher levels of perceived ease of use will be positively related to higher levels of flow (i.e., perceived enjoyment)

> *H9.a: The relationship between ease of use and flow (i.e., perceived enjoyment) will be similar between experiential users and goal-directed users*

Because TAM is used as the baseline model, we also verify the following TAM hypothesized relationship in the context of Web.

H10. Intention to use positively influences Web usage higher levels of intention to use will be positively related to higher levels of Web usage

:: Take in Figure 2 ::

METHOD

A survey instrument was used to gather data to test the relationships shown in the research model. Data were collected from a sample of online questionnaires filled out by subscribers located in three discussion-mailing lists –administered by RedIris- about different topics (e.g. experimental sciences, social sciences and humanities) in order to increase the diversity of respondents.

On the one hand, our target users should declare using Web frequently to experiential (ranged from 5-7 on EXP1-item, and ranged from 1-3 on GOAL1-item see below) or goal-directed (ranged from 5-7 on GOAL1-item, and ranged 1-3 on EXP1-item) activities, adapting the descriptions proposed by Hoffman *et al.* (2003). The items were measured using a seven-point scale ranging

from “strongly disagree” to “strongly agree”. Respondents are thus clear as to the activity context within which they are responding.

GOAL1. Goal-directed behaviour. *I usually have a distinct or identifiable purpose for my browsing*.

EXPE1. Experiential behaviour. *I usually surf or have no preconceived purpose for my Web experience*.

The exclusion of invalid questionnaires due to duplicate submissions or extensive empty data fields resulted in two final samples: (1) experiential users (221 individuals); plus (2) goal-directed users (119 individuals). Their main demographic-characteristics -age and sex- are similar to an average Internet user (*6th AIMC Internet User Survey, October-December, 2003*). Sample demographics of the subjects are shown in Table II.

:: Take in Table II ::

On the other hand, in developing the survey instrument, we chose both single item and multiple item constructs. Single item questions had to be selected for some constructs (attitude and usage) because the survey was deemed to be too lengthy when every construct had multiple items. For the item constructs we adapted measures used in the reviewed literature (see Davis, 1989; Davis *et al.,* 1989; Ghani and Deshpande, 1994; Novak *et al.* 2000; Olney *et al.*, 1991; Raman and Leckenby, 1998; Van der Heijden, 2001).

Specifically, according to perceived usefulness and ease of use scales, we adapted Davis ‘s (1989) scales. One additional item was introduced and adapted (“Browsing is interesting”, adapted from Van der Heijden, 2001) and one original item (“Browsing in my job would enable me to accomplish tasks more quickly“; adapted from Davis, 1989) was omitted because a previous analysis considered it included in other items related to productivity and efficiency. Adams *et al.* (1992) replicated the work of Davis (1989) to demonstrate the validity and reliability of his instrument and his measurement scales. They also extended it to different settings and, using two

different samples, they demonstrated the internal consistency and replication reliability of the two scales.

On the other hand, Web users' flow experiences are multi-dimensional (Chen *et al.*, 1999). Flow is a complicated construct. In our study, we have estimated flow by measuring enjoyment and concentration (see Ghani and Deshpande, 1994; Olney *et al.*, 1991). The domain of content covered by the measures (i.e. enjoyment and concentration) is clearly specified and the measures constitute a relevant census of the content domain.

As we commented above, perceived enjoyment is related to the psychological concept of “flow” (Csikszentmihalyi, 1975), which is described as an “intrinsically enjoyable experience”. In this sense, we operationalize intrinsic enjoyment as browsing enjoyment. Olney *et al.*’s (1991) four-item indices of hedonism were used to measure the enjoyment experienced while browsing. Also, according to Csikszentmihalyi and Csikszentmihalyi (1988), when one is in flow, “one simply does not have enough attention left to think about anything else”. User involvement is a key driver of user response and higher levels of involvement stimulate users to be more attentive to the information presented to them (see Andrews and Shimp, 1990; Petty *et al.*, 1983). We measure it with a four-item scale adapted from Ghani and Deshpande (1994). However, two items (“I am deeply engrossed in activity”-“I am absorbed intensely in activity”) correlated highly (>0.90, $p < 0.000$) in both samples -once translated into Spanish-; the former was eliminated to avoid a redundancy.

Flow was thus measured as a second-order construct, encompassing two first-order constructs: (1) enjoyment; and (2) concentration. The items for the dimension ‘flow’ were optimally weighted and combined using the PLS algorithm (PLS Version 3.00 Build 1058, Chin, 2003) to create latent variable scores. The resulting score more accurately form or precede the underlying construct than any of the individual items by accounting for the unique factors and error measurements that may also affect each item (adapted from Chin and Gopal, 1995). As a result, the dimensions or first-order factors become the observed indicators of second-order factor. However, the presence of

multicollinearity was also checked and the low variation inflation factor (VIF < 10) indicated that multicollinearity of the research data was not of a concern.

As Williams *et al.* (2003) note, “multidimensional constructs are often conceptualized as composites of their dimensions, such that the paths run from the dimensions to the construct. In such instances, the dimensions of the construct are analogous to formative indicators, (…) as opposed to the reflective indicators. Second, the indicators of a multidimensional construct are not manifest variables (…), but instead are specific latent variables that signify the dimensions of the construct. These latent variables require their own manifest variables as indicators, such that the manifest variables and the multidimensional construct are separated by latent variables that constitute the dimensions of the construct”.

In our research, we have thus decided to propose a molar second-order factor. Flow is (1) viewed as a composite of enjoyment and concentration and (2) modelled as formative[1]. In this sense, “indicators could be viewed as causing rather than being caused by the latent variable measured by the indicators” (see MacCallum and Browne, 1993). In fact, the omission of a formative indicator may alter the construct itself. Formative indicators can thus touch upon different aspects of the composite variable.

According to the Web-usage variable, it was operationalised by a self-reported measure of ‘the average time that an individual spends on a Web session’ adapted by a variable employed by Raman and Leckenby (1998) to measure Web interaction and Novak *et al.* (2000) to measure timeuse. As Gardner and Amoroso (2004) summarize, “though some research suggests that self-reported usage measures are biased (Straub *et al.*, 1995), other research suggests that self-reported usage measures correlate well with actual usage measures (see Taylor and Todd, 1995a; Venkatesh and Davis, 2000)”. However, as the Web behaviour of our interest is neutral and not particularly sensitive (as data about income, ethnicity, financial practices, etc), self-reports tend to be accurate (adapted from Ajzen, 1988).

[1] However, we tested two versions of the model -(1) with all constructs reflective and (2) with flow construct formative- and the results were qualitatively the same: no paths gained or lost statistical significance, and no significant paths changed in sign. Thus, the reader may be confident that the results are not an artifact of the author' modelling decisions.

The questionnaire is included in this paper's Appendix I. We proposed finally 22 items corresponding to 7 constructs -plus a demographic section-. Our study was programmed to list the questions in a random order for each participant, avoiding potential systematic biases in the data. The scales were measured using a seven-point scale ranging from "strongly disagree" to "strongly agree" to unify scale types, excepting the usage construct in which indicator was measured ranging from "very little" to "very much".

Data Analysis

A Structural Equation Modeling (SEM), specifically Partial Least Square (PLS), is proposed to assess the relationships between the constructs together with the predictive power of the research model. PLS was invented by Herman Wold, as an analytical alternative for situations where theory is weak and where the available manifest variables or measures would be likely not to conform to a rigorously-specified measurement model. In recent years, PLS procedure has been gaining interest and use among IS researchers (Aubert *et al.*, 1994; Chin and Gopal, 1995; Compeau and Higgins, 1995; Roldán and Leal, 2003).

We have used the Partial Least Squares (PLS) technique because this tool is primarily intended for predictive analysis in which the explored problems are complex, and theoretical knowledge is scarce. As stated by Wold (1985), "PLS comes to the fore in larger models, when the importance shifts from individual variables and parameters to packages of variables and aggregate parameters. (…) In large, complex models with latent variables PLS is virtually without competition".

Furthermore, flow-construct is measured with formative indicators. PLS is appropriate for analyses of measurement models with both formative and reflective items. Being an emergent construct, they cannot be easily modelled using LISREL and other covariance-based approached since these approaches implicitly assume all indicators to be reflective (Diamantopoulos and Winklhofer, 2001).

Accordingly, Partial Least Squares via PLS-Graph 3.00 Build 1058 (Chin 2003) was used to analyse the data. The stability of the estimates was tested via a bootstrap re-sampling procedure (500 sub-samples).

PLS model is analyzed and interpreted in two stages: (1) the assessment of the reliability and validity of the measurement model, and (2) the assessment of the structural model. This sequence ensures that the constructs' measures are valid and reliable before attempting to draw conclusions regarding relationships among constructs (Barclay *et al.* 1995).

RESULTS

Measurement model

For those constructs with reflective measures (i.e. latent constructs), one examines the loadings, which can be interpreted in the same manner as the loadings in a Principal Component Analysis. For constructs using formative measures (i.e. emergent constructs), the weights provide information as to what the makeup and relative importance are for each indicator in the creation/formation of the component. They are similar to when interpreting a canonical correlation analysis (Sambamurthy and Chin, 1994). Besides, it is necessary to bear in mind that no interdependencies among the formative items can be assumed, since the construct is viewed as an effect rather than a cause of the item responses. Therefore, indicators are not necessarily correlated and, consequently, traditional reliability and validity assessment have been argued as inappropriate and illogical for this type of high order factor (molar) with reference to its dimensions (Bollen, 1989). Thus, in our study, examinations of correlations or internal consistency are irrelevant for emergent constructs (flow-construct).

Individual reflective item reliability is considered adequate when an item has a factor loading that is greater than 0.707 on its respective construct, which implies more shared variance between the construct and its measures (indicators) than error variance (Carmines and Zeller, 1979). All the reflective individual item loadings in our final models are above 0.707, excepting EASE6 (0.6891,

experiential-users model; 0.6680, goal-directed-users' model). The results obtained are thus acceptable considering the exploratory nature of our study. See Tables III and IV below.

Construct reliability analyses the internal consistency for a given block of indicators. This is assessed using the composite reliability (ρ_c) (Werts *et al.*, 1974). We can use the guidelines offered by Nunnally (1978) who suggests 0.7 as a benchmark for a modest reliability applicable in initial stages of research. In our research, all of the latent constructs are reliable. They all have measures of internal consistency that exceed 0.7 (ρ_c). Also, we have checked the significance of the loadings with a re-sampling procedure (500 sub-samples) for obtaining t-statistic values. They all are significant. See Tables III and IV below.

:: Take in Tables III and IV ::

Average variance extracted (AVE) (Fornell and Larcker, 1981) assesses the amount of variance that a construct captures from its indicators relative to the amount due to measurement error. It is recommended that AVE should be greater than 0.50 meaning that 50% or more variance of the indicators should be accounted for. All latent variables of our models exceed this condition. See Tables III and IV above.

Discriminant validity indicates the extent to which a given construct is different from other latent variables. To assess discriminant validity, AVE should be greater than the variance shared between the latent construct and other latent constructs in the model (i.e. the squared correlation between two constructs) (Barclay et al., 1995). All latent variables satisfy this condition. For this reason, we maintain the discriminant validity of the latent constructs of the models. See Tables V and VI below.

:: Take in Tables V and VI ::

Structural model

Tables VII to IX show the hypotheses, path coefficients (β), t-values, and the variance explained (R^2) in the dependent constructs. Figure 2 shows a graphical representation of the path coefficients (β) and the R^2 values (variance accounted for) in the dependent variables, which allows a better understanding of the structural model. Consistent with Chin (1998), bootstrapping (500 resamples) was used to generate standard errors and t-statistics. Support for each general hypothesis on both samples can be determined by examining the sign and statistical significance of the t-values for its corresponding path. See Table VII and Figure 2.

:: Take in Table VII ::
:: Take in Figure 3 ::

Both research models seem to have an appropriate predictive power for most of the dependent variables. The mean of the explained variance of the implied variables is 44.5% and 42.6% for experiential and goal-directed user groups respectively. See Table VIII.

:: Take in Table VIII ::

Moreover, hypotheses on intensity differences between both types of users (Hia) could be tested by statistically comparing corresponding path coefficients in these structural models. This statistical comparison was carried out using the procedure suggested by Chin (2000) to develop a multi-group analysis, which was implemented in Keil *et al.* (2000). According to this procedure, a t-test is calculated following the Equation 1, which follows a t-distribution with m+n-2 degrees of freedom, where Sp (Equation 2) is the pooled estimator for the variance, m and n are the sample of experiential and goal-directed users group respectively, and SE is the standard error of path in the structural model. Results are described in Table IX, presenting a wide support for the hypotheses put forward.

:: Take in Equation 1 and 2:

:: Take in Table VII ::

Finally, since the study is a cross-sectional survey, it is problematic to draw causal inferences, and thus we avoid asserting causality in our comments. Also, according to the approach followed by

the Partial Least Squares technique, i.e. soft modeling, the concept of causation must be replaced by the concept of predictability (Falk and Miller, 1992).

As can be seen from Tables VII and IX, the data supported the model and all hypotheses cannot be rejected on the basis of this empirical data.

Intention. According to H10, intention is expected to have a positive relationship to usage; the relationship was found in both samples (experiential and goal-directed users).

Attitude. H5 hypothesises a positive relationship between attitude and intention to use Web in both samples. The paths support the relationships hypothesised. This implies that attitude towards usage is a relevant mediator between perceptions and intention to use. Also, the relationship was significantly greater among experiential users than among goal-directed users, supporting H1a.

Usefulness. In general, usefulness was expected to have a positive relationship to: attitude towards usage, H4, and intention to use, H3. On the one hand, the relationship usefulness –> attitude was found in both samples and, on the other hand, it was lesser among experiential users than among goal-directed users, thus supporting H4a. The relationship H3 (usefulness → intention to use Web), was not significant among experiential users, thereby partly rejecting H3. A possible explanation for this can be summed up in the following way: experiential users would not engage in an experiential and playful behaviour that also increases extrinsic rewards without previously adjusting their attitudes. Therefore, usefulness influences on intention to use Web among goal-directed users are greater than among experiential users, supporting H3a.

Ease of Use. There were positive discernible relationships between ease of use → attitude (H6), ease of use → flow (H9) and ease of use → usefulness (H7), thus supporting the cited hypotheses in both samples. Specifically, the path coefficients (ease of use → attitude, H6; ease of use → usefulness, H7) were significant and statistically different between experiential users and goal-directed users; also, the relationships support the proposed intensities (H6a and H7a). The intensity of the relationship H9 (ease of use → flow) was similar between experiential users and among goal-directed users, supporting H9a

Flow. H1 hypothesises a positive relationship between flow and attitude towards usage in both samples. The path-coefficient supports the sign. Further, the hypothesised intensity (H1a) was found among goal-directed and experiential users. H2 hypothesises a positive relationship between flow and intention to use Web; the path-coefficients support the relationship hypothesised. H8 posits a positive relationship between flow and usefulness. The relationship was not significant among goal-directed users, thereby rejecting H8. Goal-directed users would be willing to tolerate an *annoyed* interface in order to access functionality that is very important, while no amount of flow will be able to increase perceived usefulness of a system that doesn't do a useful task. Also, H2a and H8a posit greater influences among experiential users than among goal-directed users. Both relationships were significantly greater among experiential users than among goal-directed users, supporting H2a and H8a.

R^2. A number of findings -related to flow- are worth mentioning in particular (see Tables X and XI). The relative impact of flow on the behavioural intention can be examined by comparing the change in its R^2 value when flow is removed from the model (see Table X). The effect size f^2 can be calculated as $((R^2_{full} – R^2_{excluded})÷(1 – R^2_{full}))$. Cohen (1988) suggested 0.02, 0.15, and 0.35 as operational definitions of small, medium and large effect sizes respectively (see Chin, 1998).

Excluding flow from the first model (based on experiential users) resulted in a drop of R^2 to 0.398; in contrast, excluding flow from the second model (based on goal-directed users) resulted in a drop of R^2 to 0.382. The relative impact of flow on the behavioural intention was thus similar between experiential users (f^2 = 0.0524) and goal-directed users (f^2 = 0.0474). Furthermore, according to relative impact of flow on the attitude towards usage (see Table XI), excluding flow from the first model (based on experiential users) resulted in a drop of R^2 to 0.524 (f^2 = 0.1018). However, excluding flow from the second model resulted in a drop of R^2 to 0.555 (f^2 = 0.0470). At a 0.05 level, the f^2 values –above commented- were significant.

:: Take in Table VIII and IX ::

DISCUSSIONS AND LIMITATIONS

The empirical development suggests that there is scope for further extension of TAM to adapt to the Web-based usage and its profitable consequences. Therefore, the paper may help to further the empirical research and to clarify and examine a Web acceptance and usage model. The construct validity is considered acceptable. What's more, analyses of measurement items showed that measures were reliable and that latent constructs had acceptable convergence and discriminant validity.

Several important inferences can be made. In general, differences between experiential and goal-directed in the ways in which they approach and interact with Web are highly relevant to understanding how different motives-based users acceptance and use the Web in all settings. Our results indicate that experiential and goal-directed behaviours moderate the key relationships in the model. Experiential and goal-directed users do not weight extrinsic and intrinsic motives in the same way when on the Web. Given the findings, one could argue that goal-directed are more driven by instrumental factors and focused in their decision-making process while experiential users are more motivated by process.

On the other hand, it is suggested that a user is influenced not only by utilitarian motives, but also by a feeling occurring while active on a medium in itself (i.e., flow). Although the influences of flow on attitudes and intentions are higher among experiential users than among goal-directed users, our results suggest that flow might *play* an influential role in determining the attitude and intention towards usage within the Web-based context. Therefore, in contrast with previous research that suggests that flow would be more likely to occur during recreational activities than goal-directed activities, we found clear evidence of flow for goal-directed activities. Although ease of use and usefulness are clearly important, the flow of the Web is also important and should not be overlooked. Individuals shift from one mode to the other. In fact, it is recognised that involvement may vary -in a singular navigation- between a specific decision (i.e., situational involvement) and a stimulus (i.e., enduring involvement). As Koufaris (2002) discussed, "even though consumers may not expect to be entertained when they shop online, if they do enjoy their experience, they are more likely to return to the Web store".

If these theories apply to the Web, users might thus (1) start surfing a Web site, then (2) shift to looking to see if the information interests them, or vice versa, and finally (3) experience an intrinsically enjoyable state. Moreover, the experience of flow is a highly desirable goal to increase the effectiveness of Web experiences. Increasing the perceived enjoyment of a website could increase the perceived usefulness among experiential users and, in turn, encourage appropriate and value-added usage habits for managers. Also, as we have commented in the above sections, users who enjoy an activity will probably want to maintain or increase their emotional responses. On the other hand, an increase in flow-related experience among goal-directed users allows the interaction and enhancement the relationships with the users, while also seeking goal-directed contents.

Our findings also explain that perceived usefulness have significant positive influences on behavioural intention to use Web among goal-directed users, whereas the influence was not significant among experiential users. Also, perceived usefulness was a less salient factor for experiential users in determining attitudes to using Web. On the contrary, perceived ease of use influences attitudes more among experiential users than goal-directed users. Goal-directed users – more skilful- have overcome concerns about ease of use and focus their attention on perceived usefulness. The link from perceived ease of use to attitude will be thus stronger for experiential users, while the link from perceived usefulness to attitude will be stronger for goal-directed users. When goal-directed users perceive Web sites as being easier to use, they can more *easily* and *efficiently* obtain the desired performance, being the influence of perceived ease of use on usefulness stronger.

Further, perceived ease of use -as a factor facilitating enjoyable experiences- is weighted similarly by goal-directed and experiential users. In fact, confirming the previous theoretical-proposals, empirical results showed less perceived control levels among experiential users than goal-directed users ($F(19.881) = 0.002$; $p<.05$). On the one hand, perceived ease of use must be above a critical threshold before a flow experience becomes possible among less confident experiential-individuals. On the other hand, goal-directed users with a high level of perceived control (1) are

likely to feel more able to perform the activity, and, in turn, (2) show a relevant comfort level and intrinsic enjoyment.

Nevertheless, a Web site might not be simply designed as easy to use. For instance, if the task is *too easy* the user becomes bored. It must be designed (1) to be stimulating to use regarding user's control level; and thus (2) to evoke compelling user experiences (i.e. flow) to increase profitable Web site usage. In fact, when the challenges are lower than the individual's skill-level, boredom could be the consequence. On the contrary, if the challenges are *too low*, users lose interest and tend to use the Web sporadically. As the skills increase, so must the challenges in order to maintain interest. Hence the model shows the time progression as one continues to learn a new skill and progresses up the flow channel.

On the other hand, previous research (e.g., Adams *et al.*, 1992; Davis, 1989) have suggested that the inclusion of attitude was not meaningful. Our research suggests otherwise. We argue that attitude should continue to be used in subsequent extending TAM-research. Attitude is not only captured by ease of use or usefulness, but by an emotional dimension. Attitude therefore goes beyond utilitarian aspects to include intrinsic enjoyable experience. Although the relative influences of attitudes on intention to use Web are higher among experiential users than among goal-directed users, our results suggest that attitudes might *play* an influential role in determining the intention to use between goal-directed and experiential users.

Of course, these findings must be interpreted with caution. First, constructs of enjoyment and concentration are used to define flow, being considered as formative components of flow. However, because of the flow definition's conceptual-vagueness, operationalizing the flow construct has been questioned in the previous empirical works. Thus, future research must study in depth and compare the several measures of flow-construct as a way to understand human interaction with Web. Second, the cross-sectional study is also an important limitation. Since the users' perception and intention can change over time, it is important to measure these quantities at several points of time (Lee *et al.*, 2003). Third, the sample sizes are relatively small. Statistically, PLS can accommodate small samples and, in fact, as we commented, this is one of its primary

strengths. However, statistical conclusion validity can only be achieved with a large sample when "it is reasonable to presume co-variation (between two variables) given a specified alpha level and the obtained variances" (Cook and Campbell, 1979).

Moreover, the model needs to be tested with more objective measures to compare possible divergencies. As Sánchez-Franco and Rodríguez-Bobada (2004) note, there are methodological problems associated with: (1) self-reported measures of Web usage; (2) the possibility of halo effects since Web session length was reported on the same questionnaire used for usefulness, flow and ease of use; (3) the different knowledge of users about the amount of time they spend using the Web; and (4) the possible effects of time distortion leading to possible greater differences in actual Web usage between experiential and goal-directed behaviours. Goal-directed users may have a very good sense of the time they spend using the Web (e.g., for a well-defined set of tasks of known duration), while those experiential usage-patterns might understate their lengths of Web use. Following Venkatesh's (2000) study, "higher levels of computer playfulness will lead to lowered perceptions of effort (i.e., for the same level of actual effort / time invested), perceptions of effort / time will be lower in the case of a more *playful* user when compared to a less *playful* user".

Finally, the model clearly does not include all the relevant variables. The possible inclusion of social norms or other motivational variables to further extend the proposed model should be actively pursued by future research (e.g., personal innovativeness and playfulness). In fact, there has been consistent progress recently toward understanding the effects of individual differences on user acceptance of technology with personal trait constructs such as personal innovativeness (e.g., Agarwal and Prasad, 1998), gender (e.g., Gefen and Straub, 1997), etc. Moreover, to the extent that using a CME depends on non-motivational factors such as "requisite opportunities and resources", the traditional formulation will not accurately predict intentions and subsequent Web usage (Hoffman and Novak, 1996). Future studies should thus test the possible inclusion of other external variables (e.g., certain resources such as time or money) (see Mathieson *et al.,* 2001).

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Figure 1. Technology Acceptance Model

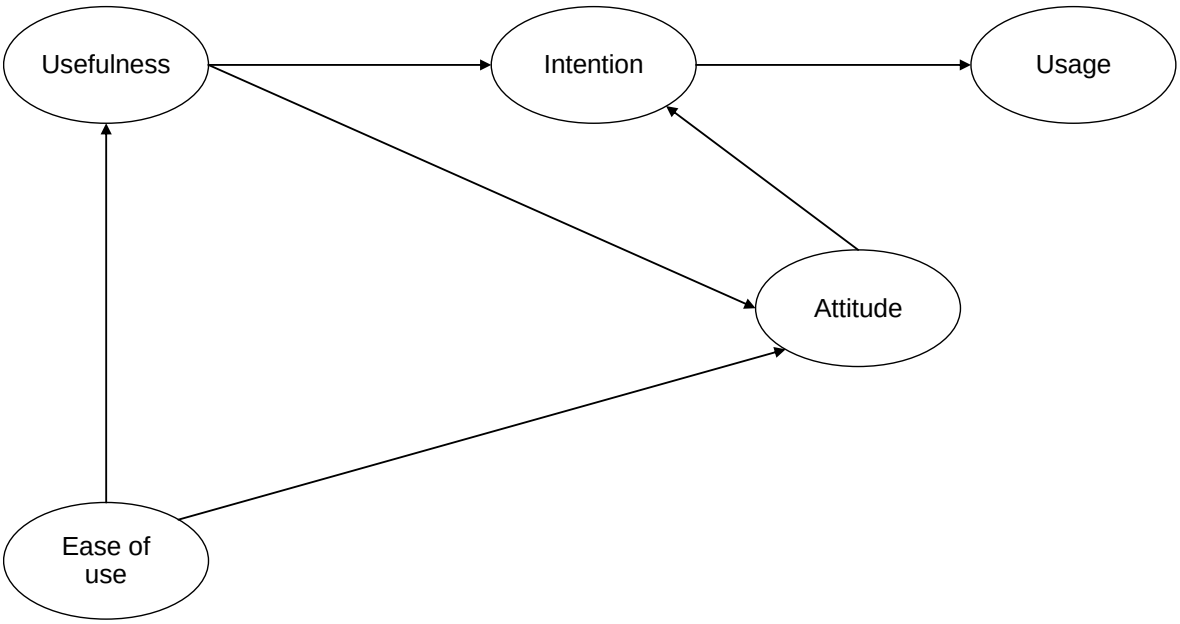


Table I. Distinctions between goal-directed and experiential behaviour

Goal-directed	Experiential
Extrinsic motivation	Intrinsic motivation
Instrumental orientation	Ritualized orientation
Situational involvement	Enduring involvement
Utilitarian benefits/value	Hedonic benefits/value
Directed (prepurchase) search	Nondirected (ongoing) search; browsing
Goal-directed choice	Navigational choice
Cognitive	Affective
Work	Fun
Planned purchases; repurchasing	Compulsive shopping; Impulse buys

Source: Hoffman *et al.* (2003)

Table II. Descriptive statistics of respondents' characteristics

Users	Our study*		*6th AIMC Internet User Survey*
	Experiential	Goal-directed	
Age			
< 20	10.0	12.4	10.9
20-24	27.5	25.5	23.1
25-34	32.2	30.8	38.7
35-44	19.6	15.6	17.2
45-54	10.0	12.3	7.4
55-64	0.7	3.0	2.2
>64	0.0	0.4	0.4
N/A	0.0	0.0	0.2
Sex			
Males	68.0	65.1	71.6
Females	32.0	34.9	28.1

% estimated over samples of experiential and goal-directed users

Figure 1. Hypotheses

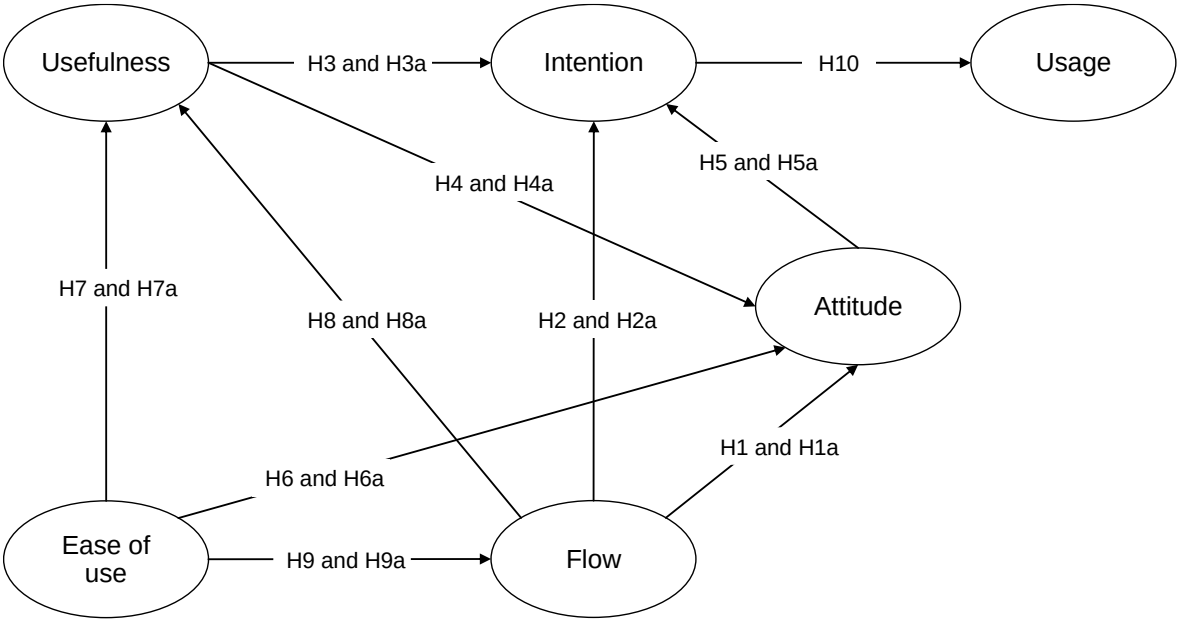


Table III. Experiential users.
Individual item reliability-individual item loadings, construct reliability and convergent validity coefficients

CONSTRUCT/Indicators	Weights	Loading	Composite reliability (ρ_c)	Average variante extracted (AVE)	Standard error	T-statistic
INTENTION			0.897	0.814		
– INTEN1		0.9315***			0.0104	89.6773
– INTEN2		0.8718***			0.0303	28.8033
ATTITUDE			1.000	1.000		
– ATTIT1		1.000			0.0000	
USEFULNESS			0.924	0.707		
– UTILI1		0.7882***			0.0333	23.6619
– UTILI2		0.8763***			0.0194	45.2506
– UTILI3		0.8707***			0.0322	27.0429
– UTILI4		0.8382***			0.0284	29.4928
– UTILI5		0.8292***			0.0284	29.1973
FLOW			n.a	n.a		
– ENJOY	0.7652***				0.0779	9.8271
– CONCEN	0.3703***				0.0858	4.3167
EASE OF USE			0.914	0.641		
– EASE1		0.8356***			0.0314	26.5786
– EASE2		0.8175***			0.0338	24.1928
– EASE3		0.7543***			0.0436	17.289
– EASE4		0.8824***			0.0166	53.2366
– EASE5		0.8108***			0.0287	28.2528
– EASE6		0.6891***			0.0668	10.3097
WEB USAGE			1.000	1.000		
– USAGE1		1.000			0.0000	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (based on $t_{(499)}$, two-tailed test)
$t_{(0.001;\ 499)} = 3.310124157$; $t_{(0.01;\ 499)} = 2.585711627$; $t_{(0.05;\ 499)} = 1.964726835$
n.a.: non applicable

Table IV. Goal-directed users.
Individual item reliability-individual item loadings. construct reliability and convergent validity coefficients

CONSTRUCT/Indicators	Weights	Loading	Composite reliability (ρ_c)	Average variante extracted (AVE)	Standard error	T-statistic
INTENTION			0.950	0.906		
– INTEN1		0.9638***			0.0060	161.8942
– INTEN2		0.9393***			0.0192	49.0328
ATTITUDE			1.000	1.000		
– ATTIT1		1.000			0.0000	
USEFULNESS			0.947	0.783		
– UTILI1		0.8668***			0.0334	25.9165
– UTILI2		0.8535***			0.0383	22.2943
– UTILI3		0.9198***			0.0213	43.1164
– UTILI4		0.9014***			0.0251	35.8542
– UTILI5		0.8801***			0.0234	37.6426
FLOW			n.a	n.a		
– ENJOY	0.6454***				0.1685	3.8303
– CONCEN	0.9298***				0.0819	11.3566
EASE OF USE			0.899	0.599		
– EASE1		0.79480***			0.0398	19.9544
– EASE2		0.80770***			0.0265	30.5103
– EASE3		0.78300***			0.0450	17.3834
– EASE4		0.81040***			0.0662	12.2382
– EASE5		0.77050***			0.0629	12.2432
– EASE6		0.66800***			0.0798	8.3702
WEB USAGE			1.000	1.000		
– USAGE1		1.000			0.0000	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (based on $t_{(499)}$, two-tailed test)
$t_{(0.001;\ 499)} = 3.310124157$; $t_{(0.01;\ 499)} = 2.585711627$; $t_{(0.05;\ 499)} = 1.964726835$
n.a.: non applicable

Table V. Experiential users. Discriminant validity coefficients

	Intention	Attitude	Usefulness	Flow	Ease of Use	Usage
Intention	**0.902**					
Attitude	0.619	**1.000**				
Usefulness	0.474	0.617	**0.840**			
Flow	0.544	0.625	0.554	-.-		
Ease of use	0.320	0.632	0.494	0.548	**0.800**	
Usage	0.757	0.630	0.582	0.557	0.432	**1.000**

Note: Diagonal elements (bold) are the square root of average variance extracted (AVE) between the constructs and their measures. Off-diagonal elements are correlations between constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements in the same row and column. n.a.: non applicable

Table VI. Goal-directed users. Discriminant validity coefficients

	Intention	Attitude	Usefulness	Flow	Ease of Use	Usage
Intention	**0.951**					
Attitude	0.595	**1.000**				
Usefulness	0.551	0.731	**0.884**			
Flow	0.464	0.501	0.473	-.-		
Ease of use	0.432	0.603	0.673	0.535	**0.773**	
Usage	0.624	0.602	0.599	0.359	0.401	**1.000**

Note: Diagonal elements (bold) are the square root of average variance extracted (AVE) between the constructs and their measures. Off-diagonal elements are correlations between constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements in the same row and column. n.a.: non applicable

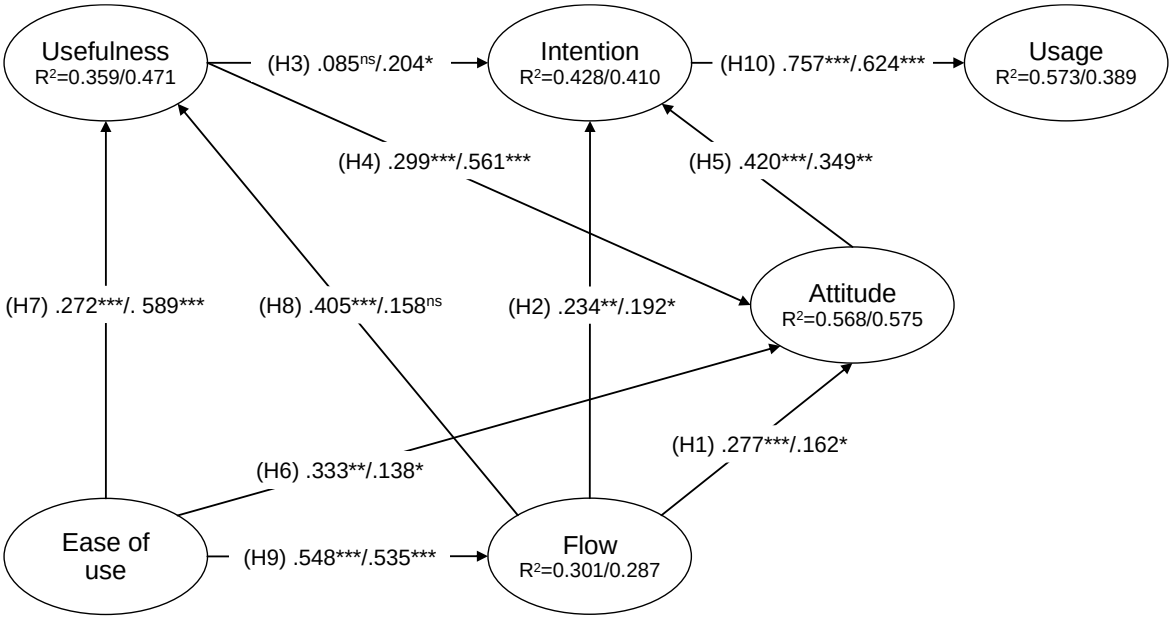
Table VII. Structural model results for experiential and goal-directed samples

H_0		Experiential users		Goal-directed users		Supported H_0
		β	t-statistic (bootstrap)	β	t-statistic (bootstrap)	
F → A	H1	0.277***	3.3576	0.162*	2.2620	Supported
F → I	H2	0.234**	3.0896	0.192*	2.5846	Supported
U → I	H3	0.085 ^{ns}	1.1976	0.204*	2.4986	Partly supported
U → A	H4	0.299***	3.7118	0.561***	6.4741	Supported
A → I	H5	0.420***	4.8960	0.349**	3.0757	Supported
EOU → A	H6	0.333**	3.1488	0.138*	2.2126	Supported
EOU → U	H7	0.272***	3.3532	0.589***	7.3800	Supported
F → U	H8	0.405***	5.1164	0.158 ^{ns}	1.6583	Partly supported
EOU → F	H9	0.548***	9.4319	0.535***	6.5599	Supported
I → USE	H10	0.757***	23.3170	0.624***	9.7878	Supported

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ^{ns} = not significant (based on $t_{(499)}$, two-tailed test)

$t_{(0.001;\ 499)} = 3.310124157$; $t_{(0.01;\ 499)} = 2.585711627$; $t_{(0.05;\ 499)} = 1.964726835$

Figure 3. Structural models results for experiential and goal-directed samples



*** p < 0.001, ** p < 0.01, * p < 0.05 (based on $t_{(499)}$, two-tailed test)

Table VIII. Variance explained (R^2) for experiential and goal-directed structural models

Indicators	Experiential users	Goal-directed users
Intention	0.428	0.410
Attitude	0.568	0.575
Usefulness	0.359	0.471
Flow	0.301	0.287
Ease of Use	-.-	-.-
Web Usage	0.573	0.389

Equation 1. T-statistic with m+n–2 degrees of freedom

$$t = \frac{\beta_{Experiential} - \beta_{Goal-directed}}{Sp \times \sqrt{\frac{1}{m} + \frac{1}{n}}}$$

Equation 2. Pooled estimator for the variance

$$Sp = \sqrt{\frac{(m-1)}{(m+n-2)} \times SE^2_{Experiential} + \frac{(n-1)}{(m+n-2)} \times SE^2_{Goal-directed}}$$

Table IX. T-tests for multi-group analysis

H_0			Standard errors (SE)		Sp	$\beta_E - \beta_{GD}$	T-value	Supported H_0
			Experiential	Goal-directed				
F → A	H1a	E>GD	0.0825	0.0716	0.0789	0.1150	12.824***	Supported
F → I	H2a	E>GD	0.0757	0.0743	0.0752	0.0420	4.911***	Supported
U → I	H3a	GD>E	0.0710	0.0816	0.0749	-0.1190	-13.979***	Supported
U → A	H4a	GD>E	0.0806	0.0867	0.0828	-0.2620	-27.836***	Supported
A → I	H5a	E>GD	0.0325	0.1135	0.0720	0.0710	8.672***	Supported
EOU → A	H6a	E>GD	0.1058	0.0624	0.0930	0.1950	18.445***	Supported
EOU → U	H7a	GD>E	0.0811	0.0798	0.0806	-0.3170	-34.569***	Supported
F → U	H8a	E>GD	0.0792	0.0953	0.0852	0.2470	25.507***	Supported
EOU → F	H9a	E=GD	0.0581	0.0816	0.0672	0.0130	1.700^{ns}	Supported

*** p < 0.001, ** p < 0.01, * p < 0.05, ^{ns} = not significant (based on $t_{(338)}$, two-tailed test)

$t_{(0.001;\ 338)} = 3.319543035$; $t_{(0.01;\ 338)} = 2.590452926$; $t_{(0.05;\ 338)} = 1.967007242$

Table X. Impact of independent variables on intention to use

Independent variables	Samples	R^2 full	R^2 excluded	f^2	F
Attitude	Experiential	0.428	0.340	0.1538**	Significant
	Goal-directed	0.410	0.353	0.0966*	Significant
Usefulness	Experiential	0.428	0.421	0.0122 ns	Not significant
	Goal-directed	0.410	0.391	0.0322*	Not significant
Flow	Experiential	0.428	0.398	0.0524*	Significant
	Goal-directed	0.410	0.382	0.0475*	Significant

*Small: 0.02; **medium: 0.15; ***large effect: 0.35; ns: not significant

Table XI. Impact of independent variables on attitude towards use

Independent variables	Samples	R^2 full	R^2 excluded	f^2	F
Ease of Use	Experiential	0.568	0.495	0.1690**	Significant
	Goal-directed	0.575	0.566	0.0212*	Not significant
Usefulness	Experiential	0.568	0.512	0.1296*	Significant
	Goal-directed	0.575	0.407	0.3953***	Significant
Flow	Experiential	0.568	0.524	0.1019*	Significant
	Goal-directed	0.575	0.555	0.0471*	Significant

*Small: 0.02; **medium: 0.15; ***large effect: 0.35; ^{ns}: not significant

Appendix I. Scales*

CONSTRUCT/Indicators	
INTENTION**	
– INTEN1	Given that I have access to the Web, I intend to use it
– INTEN2	Given that I have access to the Web, I predict that I would use it
ATTITUDE**	
– ATTIT1	I have a positive attitude towards using the Web
USEFULNESS	
– UTILI1	Browsing improves my performance
– UTILI2	Browsing increases my productivity
– UTILI3	Browsing enhances my effectiveness
– UTILI4	Browsing is interesting
– UTILI5	Browsing is useful
ENJOYMENT	
– ENJOY1	Browsing Web is pleasant
– ENJOY2	Browsing Web is fun
– ENJOY3	Browsing Web is entertaining
– ENJOY4	Browsing Web is enjoyable
CONCENTRATION	
– CONCEN1	When I browse, I am absorbed intensely in browsing
– CONCEN2	When I browse, I concentrate fully on browsing
– CONCEN3	When I browse, my attention is focused on browsing
EASE OF USE	
– EASE1	Learning to browse is easy for me
– EASE2	I find it easy to get Web to do what I want it to do
– EASE3	My interaction with Web is clear and understandable
– EASE4	I find Web to be flexible to interact with
– EASE5	It is easy for me to become skillful at using Web
– EASE6	I find easy to browse
USAGE	
– USAGE1	On average, how much time would you estimate that you personally spend on each Web session?

* Fulfilled in Spanish and then translated into English

** In our proposal 'Browsing' is employed as using-synonymous.