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Motivational Duality in Online Consumer Behaviour: Website Usability and Flow State as Moderating Factors

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Abstract

The present study explores the influence of website usability (utilitarian motivation) and user flow state (hedonic motivation) on online purchasing behaviour in the context of a site promoting a tourist destination. A 2x2 (high vs. low website usability and high vs. low flow state) experimental design was chosen. The sample comprised 227 Spanish individuals. The results underline the importance of utilitarian aspects for the effectiveness of the purchasing process and the formation of perceived risk online. The findings also demonstrate the influence of hedonic aspects on attitudes and loyalty towards the tourist destination, and affirm that message involvement plays an important role in reducing perceived risk and augmenting attitudes and loyalty. It is recommended that websites should reflect the different types of motivation so as to make browsing both appealing and useful for the online consumer.

Key words: website usability; flow state; website attitude; tourist destination loyalty

JEL classification: M30; M15; M390

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1. Introduction

The development of information and communications technologies (ICT) has led to greater diversity in the contexts within which relationships based on exchange may evolve. The passivity shown by consumers in traditional markets may largely be attributed to the impossibility of interacting with firms, rather than to their lack of interest in doing so (Pels, 1999).

The tourism sector has widely adopted information technology (IT) to reduce costs, enhance operational efficiency, and improve communications (Law et al., 2009; Woodside et al., 2011). A firm's website represents its image in the digital environment, as an interactive window through which it can attract clients and display its online product catalogue, and website design is a key factor in the tourism sector as it can offer an advantage for firms and act as an effective marketing tool (Zafiropoulos and Vrana, 2006). However, having an online presence alone, with no Web-based communication strategy in place provides no guarantee of success (Liang and Law, 2003). As such, the usability of a firm's website design is a key success factor.

The World Tourism Organization (WTO) has declared that the key to success on the internet as a source of tourism information is to swiftly identify consumers' needs and establish direct contact with tourists. Furthermore, the WTO has asserted that websites should offer tourists information that is comprehensive, personalized, and up-to-date (Vich-I-Martorell, 2004). The internet is one of the main sources of information used by tourists when making travel plans (Buhalis and Law, 2008; Wu et al., 2008). This behaviour can be considered habitual and commonplace throughout the great majority of countries and cultures, hence the decision to use this sector for the purposes of the present study.

Recent data on e-commerce in the Spanish tourism sector (the geographical sphere of study for the present research) demonstrate the growing importance of the internet as an information source and a medium for carrying out commercial transactions. According to data from the Spanish National Statistics Institute (INE, 2014) of the total number of Spaniards who purchased online in 2013, 92.5% of purchases were related to the tourism sector. According to the Spanish National Observatory for Telecommunications and the Information Society (SEGITTUR, 2014), there are certain activities involved in making travel plans in which the internet has become the principal medium. More specifically, the internet was used by 96.6% of Spanish tourists for the purposes of selecting a tourism destination in 2013 and by 53.4% for booking accommodation. These data reflect the importance of investment in website design among firms operating in the tourism sphere.

Meanwhile, Ramey (2000) highlights the importance of personal motivation in the user's development and skill-acquisition in the digital environment. Motivations can be classified as utilitarian (extrinsic) or hedonic (intrinsic) (Childers et al., 2001; Wolfinbarger and Gilly, 2001, 2003). To date, consumer behaviour studies has focused—arguably in excess—on rational, utilitarian, and cognitive factors (that is, utilitarian motivations) at the expense of aspects associated with leisure, sensorial pleasure, and emotional responses (hedonic motivations) (Martínez et al., 2005;

Sánchez-Franco and Roldán, 2005). Online consumer behaviour requires a much broader perspective, which should not be restricted to the purchase itself, although it is understandable that research has largely focused on explaining this aspect. The inherent characteristics of the internet help to create a setting that is conducive to more hedonic behaviours (Childers et al., 2001) and for this reason a holistic take on the consumer experience is required.

This duality between hedonic and utilitarian motivations does not imply that one is response of the other; the two can co-exist or form a relationship of dependence or exchange, although one or the other typically predominates (López and Ruiz, 2008). Among the key aspects of utilitarian benefits are comfort, ease of access to products and services, time-saving during purchase, and price level—all of which are related to the usability dimension of the website design and to attributes such as functionality, perceived usefulness, and ease of use. Meanwhile, hedonic factors are related to positive sensations, including surprise, excitement and uniqueness, social benefits, the search for online bargains, and involvement with a product or service category correspond to information available on the website, its presentation, and the flow state achieved by the user while browsing.

The present work seeks to examine, on the one hand, the effect of website design (utilitarian motivation) on perceived risk online and on site effectiveness during the browsing process—the latter being measured in terms of the number of errors committed by the user while selecting an online purchase together with the length of time spent browsing to complete the selection. On the other hand, the work analyses the effect of the user's flow state (hedonic motivation) on their online behaviour, this being measured in terms of attitude and loyalty towards the service promoted on the site (tourist destination).

2. Literature Review

2.1 The Effect of Website Design on Site Effectiveness and Perceived Risk Online

Usability refers to the speed and ease with which users are able to carry out their tasks via a given website (ISO, 1998). A website with good usability is one that: is well organized (Nielsen, 2005), shows and explains the products and services clearly and concisely (Greiner, 2007), makes the registration process as simple as possible (Nielsen and Norman, 2000), downloads quickly (Nielsen and Coyne, 2001), is easy to use (Nielsen and Coyne, 2001), and fosters positive experiences for the user (Nielsen and Norman, 2000).

Achieving usability therefore involves focusing on the potential users of a site so as to structure it around their needs and organizing the navigation such that it facilitates the information-search process. The work of Shackel (1991), which is particularly notable for its focus on the user, proposes that the practical acceptance of a system is determined by four factors: (1) effectiveness, in terms of achieving tasks during the interaction, as measured by processing time and errors committed;

(2) learnability, which refers to the time required by the novice to learn to use the system properly; (3) flexibility, in terms of adaptability of tasks to specific requirements (different sectors or target users, for instance); and (4) attitude, referring to acceptable levels of human costs, such as tiredness, unease, frustration, and personal effort.

Focusing more on websites in particular, Nielsen and Loranger (2002) also explored what is considered by some to be a key factor in usability, namely website effectiveness when carrying out tasks online, which is directly related to the speed with which users can learn to navigate the website (time invested) and its use (number of errors committed by the user during the purchasing process).

In light of these works, the following hypotheses are proposed.

H_1: Website effectiveness is positively related to website usability.

H_{1a}: Website effectiveness, measured in terms of user browsing time during the purchasing process, is positively related to website usability.

H_{1b}: Website effectiveness, measured in terms of the number of errors committed by the user during the purchasing process, is positively related to website usability.

Usability and appearance are two of the indicators that represent the utilitarian aspects of a website. Those websites with high usability of design enable users to carry out their tasks coherently and achieve the results they expect (Palmer, 2000). The sensation of control during browsing is inversely related to the sense of insecurity and vulnerability experienced by the user (Roth et al., 2005). A high level of usability thus reduces the perceived risk during browsing (Pavlou, 2003). Perceived risk online, defined as the sensation of insecurity and vulnerability while browsing, is a key element in the initial interaction between user and website for those who have no prior experience on which to base their assessment of the site (Belanche et al., 2012). It is also a critical factor that exerts a significant influence on the user's decisions when visiting or revisiting a site (Herrero and Rodriguez, 2010).

In view of these assertions, the following hypothesis is proposed.

H_2: Perceived risk online is negatively related to website usability.

2.2 The Effect of the User's Flow State on Their Attitude and Loyalty towards the Service Offered via the Website

"Flow state" was defined by Csikszentmihalyi (1975) as the feeling of wholeness people experience when completely absorbed in a task—for example, when involved in physical activity or interaction with symbolic systems such as mathematics or computer languages. When a person is in a flow state, they are entirely engrossed in an activity and ignore all irrelevant perceptions. Csikszentmihalyi (1975) referred to the flow state as being based on an individual's

perception of the challenges posed by a given activity and their skills to overcome those challenges.

There are a number of studies to date that have focused on this variable in the sphere of ICT and the internet. Trevino and Webster (1992) described four dimensions of flow state in the context of ICT: (1) perceived control, (2) attention paid in the interaction, (3) curiosity, and (4) intrinsic interest in the activity. Just a year later, Webster et al. (1993) revised this model down to three dimensions: (1) perceived control, (2) concentration, and (3) enjoyment. Ghani and Deshpande (1994) placed greater emphasis on perceived control and challenge, the latter referring to the relationship between the user's skill level and the challenge they are dealing with. Sánchez-Franco (2005) examined the main antecedents of flow state and arrived at some interesting conclusions. First, concentration, affective responses, telepresence, and a distorted sense of time constitute factors that predict and explain this state in relation to a given website. Second, the speed of interaction is related to perceived control via constructs such as ease of use, usefulness, or resources. The consequences of the flow state are, according to Sánchez-Franco (2005): positive affect towards the system; improved learning of the activities being undertaken; greater perceived control; and a distorted sense of time, to the extent that the flow state reduces the feeling of time pressure while the time actually spent on the activity increases.

Elsewhere, the literature has demonstrated the positive effect on brands of consumers entering a flow state while browsing a given website. A flow state is positively associated with exploratory behaviour among consumers (Ghani and Deshpande, 1994), intention to revisit a website (Agarwal and Karahanna, 2000; Koufaris, 2002), and effectiveness of communication initiatives (Trevino and Webster, 1992). Those users who have experienced a flow state are more prone to have a positive attitude towards online purchasing and are more likely to feel greater loyalty and a more positive attitude towards the service presented online (Pilke, 2004). Meanwhile, Sánchez-Franco et al. (2007) demonstrated the positive and significant relationships between flow state and attitude towards the website and purchase intention. Therefore, if, while browsing a given site, the user experiences a flow state, which will naturally be accompanied by enjoyment, it is highly probable that this will positively affect their intention to revisit and their loyalty.

In light of the literature review, the following hypotheses are proposed.

H_3: Users who present a higher flow state have greater attitude towards the service offered via the website.

H_4: Users who present a higher flow state have greater loyalty towards the service offered via the website.

3. Research Methodology

3.1 Experimental Design and Sample

In order to achieve the research objectives and test the proposed hypotheses, a 2x2 (high vs. low website usability and high vs. low flow state) experimental design was chosen. Flow state was not controlled between subjects but rather was processed using the responses given by the subjects to the measurements of this variable as outlined in the section on Measures.

With regard to the site design, in order to manipulate this, the recommendations and works of Moss (2004) and Nielsen (2004, 2009) were followed as a guide (see Table 1), with two treatments being established: (1) website design with high usability (V1) and (2) website design with low usability (V2).

Table 1. Design Factors for the Website

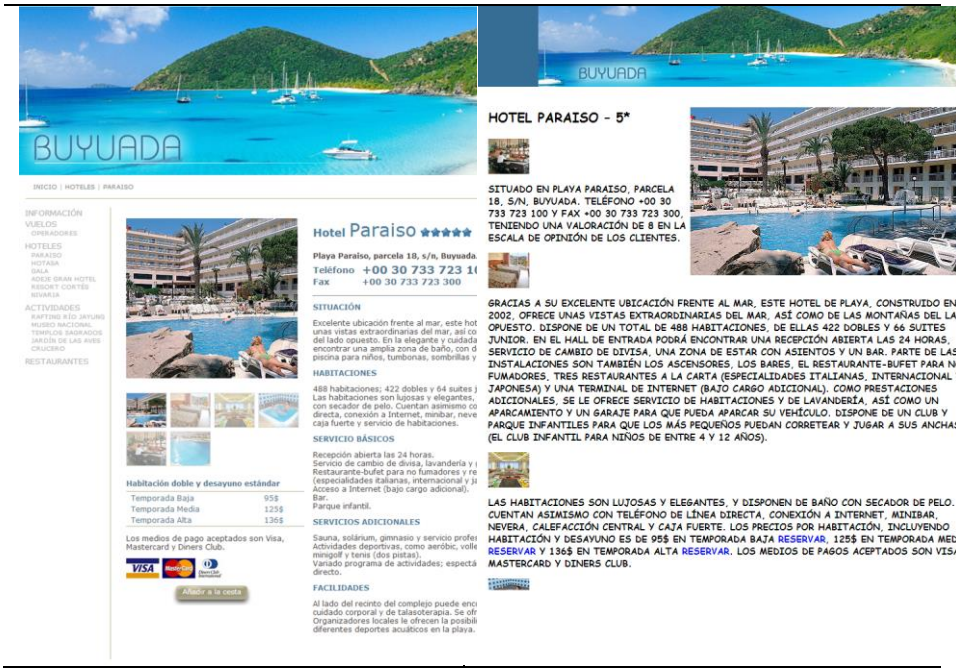
Factor	V1: Website with high usability	V2: Website with low usability
Inconsistent browsing	The information conveyed to users via icons, links, and images will be easy to use.	Icons will not be recognized as commonly used on the internet, and the menu may appear to the right of the screen rather than the left, or divided in two, horizontally and vertically.
Menu option style	The main options, icons, and symbols will be those commonly found on the internet.	
Page length excessive	The length of each page will be normal.	The length of each page will be excessive, especially in terms of image and font size.
Pop-ups	There will be no pop-ups on the site.	The site will carry pop-ups.
Product information	The product information will be organized in tabular form.	The product information will be presented in unbroken narrative text.
Scroll bar	The pages will be separated by category and adjusted so as to avoid the user having to use the scroll bar.	The different pages will be designed in such a way that the user has to browse using the scroll bar, either horizontally, because the images are too big, or vertically.
Design of the structure	Recommended guidelines for designing the site will be applied, with information structured around where the user finds themselves. The site will be divided into categories but not overly so.	The site will be badly structured, with poorly designated categories, and it will be more extensive than V1 in terms of number of pages, but they will be of no use to the user.

Source: Author elaboration based on Moss (2004) and Nielsen (2004, 2009).

A website for a fictitious tourist destination called Buyuada was used as the framework for the experiment. A fictitious location was devised with a view to avoiding a scenario in which subjects' previous awareness of, or attitudes towards, the destination might affect the results. In this same regard, Dahlén et al. (2009) used fictitious brands to minimise the possibility of differences between subjects, as using real brands could have meant that some individuals had preconceived representations and associations. Similarly, Nelson et al. (2006) recommend using fictitious brands as this gives the researcher greater control over the possible effects of subjects' past experiences. These authors particularly recommend this approach when comparing users from different countries (as is the case in the present research) as a given brand may have very different connotations from one country to another.

The experiment itself required a professional website to be purpose-built, with its own domain name, providing information on the fictitious tourist destination (www.buyuada.org). The site was hosted via a domain pertaining to the researchers, enabling them to simulate natural browsing conditions at all times for the subjects. Figure 1 shows the two aforementioned versions of the site created: V1 (site with high usability) and V2 (site with low usability).

Figure 1. Site with High Usability (V1) (Left) and Low Usability (V2) (Right)



All individuals in the sample were from Spain. The subjects were selected by an external company commissioned to establish an online survey panel for the experiment. The company made email contact with each panel member, following the gender and age quotas that had been pre-established. The subjects were sent a link to the appropriate version of the website (V1 or V2) together with instructions (see Table 2).

The users were required to browse through the website and put together their own tourism package based on an outward flight, a return flight, hotel accommodation, a restaurant, and an excursion from the multiple options on offer. Once they had completed the task and browsing was complete, subjects were redirected to a questionnaire.

The final sample size was 227 Spanish users: 110 browsing V1 and 117 browsing V2. Overall, the subjects were highly experienced in the internet medium, with 66.08% spending over 10 hours a week online. The minimum age was 18 and the maximum was 78, giving an average age of 38.66 years (see Table 3).

Table 2. Instructions Given to the User

Buyuada:
Next, you will visit a website relating to a tourist destination – namely, the island of Buyuada in the Mediterranean. The visit will last a minimum of 2 minutes.
Buyuada is becoming increasingly popular as a tourist destination.
Your task is to imagine a situation in which you are thinking of going on holiday in the next few months, during mid-season. To this end, you need to design a tourist package on Buyuada that includes the following:

- An outward flight
- A return flight
- A hotel for your stay
- A restaurant
- An excursion

To book these services you must select the options of your choice, press the button 'add to basket' and confirm your bookings using the shopping trolley icon.
Please bear in mind that, among all the alternatives you will find, there is one option that is superior to the others in terms of quality/price.
All those participating in the study who have responded to the questionnaire and who have chosen the best option in terms of quality/price will be entered into a draw to win an iPod-Touch. If you wish your name to be entered, please provide your email address at the end of the questionnaire.
Thank you very much for your collaboration.
Enter the website

Table 3. Distribution by Website Version, Gender, and Age

	V1			V2			TOTAL		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
18–24	2.64% (6)	0.44% (1)	3.08% (7)	2.20% (5)	1.32% (3)	3.52% (8)	4.85% (11)	1.76% (4)	6.61% (15)
25–34	18.94% (43)	11.01% (25)	29.96% (68)	21.59% (49)	7.49% (17)	29.07% (66)	40.53% (92)	18.50% (42)	59.03% (134)
35+	10.13 % (23)	5.29% (12)	15.42% (35)	12.33% (28)	6.61% (15)	18.94% (43)	22.47% (51)	11.89% (27)	34.36% (78)
TOTAL	31.72% (72)	16.74% (38)	48.46% (110)	36.12% (82)	15.42% (35)	51.54% (117)	67.84% (154)	32.16% (73)	100% (227)

As regards educational level, the sample was divided into three sub-groups: primary-education only, secondary-education qualifications, and university-level qualifications. The highest percentage was for higher education (56.01% of the sample), followed by secondary-education qualifications (40.73%), and no qualifications (3.26%). Over 95% of users had secondary-level qualifications or a university education (AIMC, 2013).

3.2 Measures

Browsing time was measured in terms of the number of seconds it took subjects to browse the experimental website and complete the task assigned to them.

As regards capturing the number of errors committed by users during the purchasing process when selecting their tourism package, for each of the four components (flights, accommodation, restaurant, and excursion) there was always one option that was preferable to the rest in terms of the relationship between quality

and price. In line with the recommendations of several authors (Muñoz-Leiva et al., 2010), subjects were offered an incentive to achieve the optimum result for the task and complete the subsequent questionnaire, in the form of a free prize draw to win an iPod Touch.

The perceived risk online was measured using a Likert scale comprising 3 items and 7 points proposed by Wakefield and Whitten (2006), on which 1 equalled "totally disagree" and 7 equalled "totally agree": *While I was browsing this website, and due to its characteristics I felt that: (1) there is a high risk of loss if I make a reservation via this site (RISK1); (2) there is a major risk involved in making a reservation via this site (RISK2); (3) making tourism reservations via this site is risky (RISK3).*

To measure attitude towards the tourist destination, the classic scale used in seminal works, such as Petty et al. (1983), was used. Some of the items have been used in the tourism sphere by authors such as Beerli and Martín (2004) and Lee et al. (2005). The final scale comprised 4 items measured using a 7-point semantic differential: *The image of the tourist destination generated by this website is … (1) Bad–Good (ATDEST1); (2) Negative–Positive (ATDEST2); (3) Unfavourable–Favourable (ATDEST3); and (4) I don´t like it–I like it (ATDEST4).*

Behaviour was measured based on loyalty towards the tourist destination, using the 7-point Likert scale developed by Zeithaml et al. (1996), on which 1 equalled "totally disagree" and 7 equalled "totally agree": *After coming across the tourist destination on the website, it is likely that ... (1) I will say positive things about the destination to other people (LOYALT1); (2) I will recommend the location to anyone who asks for my advice (LOYALT2); (3) I will encourage my friends and family to visit this location (LOYALT3); and (4) I will visit this destination for a future holiday (LOYALT4).*

To test the hypothesis relating to the moderating effect of flow state on loyalty towards the destination, this was measured indirectly via the variables "enjoyment during browsing" and "perceived control during browsing," in accordance with the conceptualization of authors such as Ghani and Deshpande (1994), Koufaris (2002), Pace (2004), Sánchez-Franco (2005), Sánchez-Franco et al. (2007), and Trevino and Webster (1992). For the purpose of measuring these variables, the scales proposed by Koufaris (2002) were used. Enjoyment during browsing was measured by means of a 4-item, 7-point Likert-type scale (on which 1 equalled "totally disagree" and 7 equalled "totally agree"): *While I was browsing the website … (1) I found my visit interesting (ENJOY1); (2) I found my visit pleasant (ENJOY2); (3) I found my visit exciting (ENJOY3); and (4) I found my visit fun (ENJOY4)*. Similarly, perceived control during browsing was also measured using a 4-item, 7-point Likert-type scale (on which 1 equalled "totally disagree" and 7 equalled "totally agree"): *During my online search for information on making a booking at the tourist destination … (1) I felt relaxed (CONTROL1); and (2) I felt that I was in control (CONTROL2).*

Perceived usability of the site was also measured, with a view to subsequently checking to ensure correct manipulation of the response variable "website design." This control variable was measured from the user's perspective by applying the

scale used by Flavián et al. (2006a, 2006b). This was a 7-item, 7-point Likert-type scale (on which 1 equalled "totally disagree" and 7 equalled "totally agree"): *Please assess the website you have just browsed … (1) Everything on this website is easy to understand (USAB1); (2) This website is simple to use even for the first time (USAB2); (3) Finding the information I need on this website is simple (USAB3); (4) The content structure on this website is easy to understand (USAB4); (5) It's easy to find your way around this website (USAB5); (6) The way in which the content on this site is organized enables me to know where I am when I browse through the different pages (USAB6); and (7) When I am browsing this site I feel in control of what I can do (USAB7)*.

Finally, the researchers also decided to include message involvement as a covariate in the present analysis. The rationale for this was that the literature on psychology and marketing finds that message involvement is a major moderator of information-processing (Muncy and Hunt, 1984). This connection is even more prevalent when the information contained in the marketing stimulus, in this case the website, is personally relevant (Zaichkowsky, 1985). Involvement, measured simply in terms of the importance of the website to the consumer, also has a major effect on the antecedents of flow state (Novak et al., 2000). Customers who are more involved in the product report a more positive purchasing experience due to their heightened interest. To measure message involvement, the researchers chose a 7-point semantic differential scale adapted from previous works (Schmitt et al., 2009; Zaichkowsky, 1985) based on the following statement: *When I was browsing the website I felt that the information it contained was ... (1) of little importance–very important (INVOLV1); (2) of little relevance–very relevant (INVOLV2); (3) of little value–very valuable (INVOLV3); (4) of little use–very useful (INVOLV4); (5) of little interest–very interesting (INVOLV5)*.

Other variables were also measured to classify the subjects: gender, age in years, and level of online experience, based on the number of hours spent each week on the internet.

4. Results

4.1 Analysis of the Psychometric Properties of the Scales

Prior to testing the hypotheses it was necessary to examine the reliability and validity of the multi-items scales used in the present study. For this purpose a multi-group confirmatory factorial analysis (CFA) was used according to website design (V1 vs. V2), which demonstrated that the different scales all presented sound psychometric properties as all the standardized coefficients were significant and very close to one, while the individual reliability of each indicator was above the recommended limit of 0.50 (see Table 4). The goodness-of-fit indicators and the composite reliability (CR) and average variance extracted (AVE) indices were also, in all cases, well over the recommended values (Kline, 2011).

Table 4. Analysis of the Psychometric Properties of the Scales (Non-Standardized Parameters)

Items	V1				V2			
	Parameter (t-value)	R^2	CR	AVE	Parameter (t-value)	R^2	CR	AVE
ATDEST1	1.00 (ref.)	0.90	0.96	0.97	1.00 (ref.)	0.92	0.87	0.87
ATDEST2	0.98 (19.20)	0.89			1.00 (42.57)	0.93		
ATDEST3	1.05 (19.47)	0.88			1.00 (31.31)	0.91		
ATDEST4	1.00 (19.15)	0.84			1.03 (28.50)	0.83		
CONTROL1	1.00 (ref.)	0.80	0.88	0.81	1.00 (ref.)	0.69	0.78	0.64
CONTROL2	1.03 (19.71)	0.83			1.07 (11.75)	0.76		
ENJOY1	1.00 (ref.)	0.87	0.93	0.71	1.00 (ref.)	0.80	0.95	0.79
ENJOY2	0.93 (27.10)	0.89			1.16 (27.31)	0.87		
ENJOY3	1.00 (22.07)	0.66			1.20 (22.24)	0.81		
ENJOY4	1.04 (23.22)	0.73			1.24 (24.26)	0.86		
INVOLV1	1.00 (ref.)	0.88	0.97	0.84	1.00 (ref.)	0.86	0.96	0.82
INVOLV 2	0.96 (30.38)	0.85			1.07 (30.92)	0.86		
INVOLV 3	0.96 (28.93)	0.86			1.06 (28.13)	0.88		
INVOLV 4	0.92 (28.19)	0.88			1.08 (25.22)	0.88		
INVOLV 5	0.99 (28.19)	0.88			1.09 (18.86)	0.77		
LOYALT1	1.00 (ref.)	0.75	0.95	0.84	1.00 (ref.)	0.79	0.97	0.84
LOYALT2	0.95 (25.04)	0.80			1.03 (26.10)	0.88		
LOYALT3	1.03(24.63)	0.89			1.07 (30.23)	0.95		
LOYALT4	1.13 (32.02)	0.90			1.07 (29.43)	0.90		
RISK1	1.00 (ref.)	0.81	0.94	0.85	1.00 (ref.)	0.82	0.94	0.85
RISK2	1.06 (29.15)	0.88			1.02 (28.66)	0.88		
RISK3	1.05 (25.84)	0.87			1.07 (30.40)	0.88		
USAB1	1.00 (ref.)	0.75	0.97	0.79	1.00 (ref.)	0.75	0.96	0.82
USAB2	0.91 (22.33)	0.79			1.16 (23.22)	0.82		
USAB3	0.92 (19.50)	0.79			1.10 (19.81)	0.80		
USAB4	0.98 (23.45)	0.91			1.08 (18.40)	0.79		
USAB5	0.94 (21.37)	0.88			1.15 (19.15)	0.80		
USAB6	0.97 (18.95)	0.86			1.13 (18.31)	0.77		
USAB7	0.95 (19.84)	0.81			1.08 (18.52)	0.83		

4.2 Manipulation Check

As the CFA had demonstrated that the scale of perceived usability presented good psychometric properties, an index variable was constructed as the sum of the items on the scale. To check the correct manipulation of the "website design" response variable, a t-test was carried out for the difference in averages of this index variable for each of the two experimental conditions (V1 and V2). The results showed that the perceived usability was significantly greater for V1 than for V2 ($p<0.005$), which endorses the correct manipulation of the response variable between-subjects (see Table 5).

Table 5. Test for Differences in Perceived Usability by Website Design Type

Variable	Treatments	Means	t-value	*p*-value
Perceived usability	V1	40.52	−4.58	<0.005
	V2	34.52		

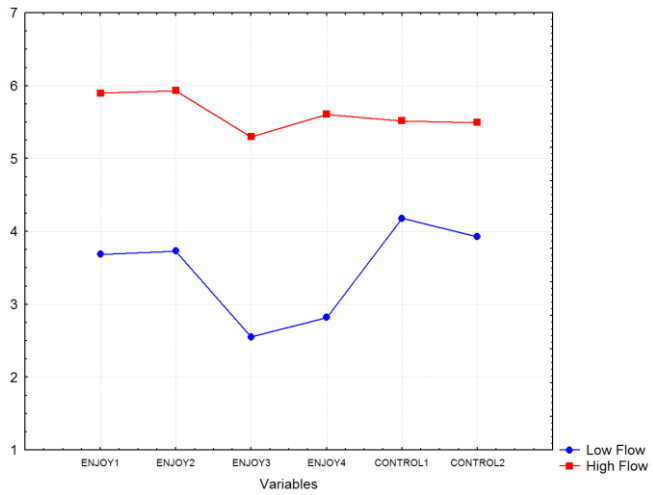
4.3 Construction of the Flow State Variable and Classification of Users

Testing Hypothesis 3 required the subjects to be classified into two groups, depending on the extent of flow state achieved while browsing. To this end, using the variables "enjoyment during browsing" and "perceived control," the researchers carried out a hierarchical cluster analysis (using Ward's method) followed by a K-means analysis. Two groups of Spanish users were thus identified, one that comprised 156 individuals who experienced a high flow state and the other that comprised 71 individuals who experienced a low flow state. Analysis of the variance demonstrated that there were significant differences between the groups for all of the items of both variables (see Table 6 and Figure 2).

Table 6. Analysis of Variance between Groups: Flow State

Items	DF	F	*p*-value	Items	DF	F	*p*-value	Items	DF	F	*p*-value
ENJOY1	489	590.02	<0.005	ENJOY3	489	558.59	<0.005	CONTROL1	489	228.47	<0.005
ENJOY2	489	619.87	<0.005	ENJOY4	489	655.93	<0.005	CONTROL2	489	265.25	<0.005

Figure 2. Difference in Averages between the Two "Flow State" Groups



4.4 Testing the Hypotheses

To test the hypotheses, a number of covariance analyses (ANCOVA) were carried out, using the following response variables: browsing time, number of errors performed during the online purchasing process, perceived risk online, and attitude and loyalty towards the tourist destination. The experimental factors, website design (V1 vs. V2) and flow state (High vs. Low), were the predictor variables. Finally the covariate was message involvement. As the scales presented good psychometric properties, prior to testing the hypotheses, an indicator for each response variable was calculated as the sum of the items from the original scales.

In this paper, for the purposes of data analysis and discussion of the results, we will now first examine the main effect of the predictor variable in question on the hypothesized response variable, with a view to concluding whether each of the hypotheses is confirmed. Second, despite not being theoretically hypothesized, we will examine the moderating effect of the covariate "message involvement" and the interaction effect of the predictor variables on the response variables.

H_1 proposed that website effectiveness, measured in terms of user browsing time ($H1_a$) and number of errors committed by the user ($H1_b$) during the purchasing process, is positively related to the website usability. After testing to ensure that all the assumptions of the ANCOVA were fulfilled (normality, homoscedasticity, and equality of coefficients for the covariate between-groups), the data analysis demonstrated that the website design had a significant main effect on browsing time (F=20.33; p<0.005) such that when users browsed V1 of the site they took less time to put together their tourism package ($Time_{V1}$=368.71 seconds) than when they browsed V2 ($Time_{V2}$=619.62 seconds). Therefore H_{1a} cannot be rejected (see Table 7 and Figure 3). These findings echo those of other authors (Nielsen and Loranger, 2002; Shackel, 1991).

The covariate "message involvement" was found not to be significant (F=1.2; p=0.27). Although theoretical hypotheses were not proposed, the ANCOVA revealed that flow state did not have any significant main effect (p=0.56), nor did it have any significant interaction effect with website design (p=0.67) on browsing time.

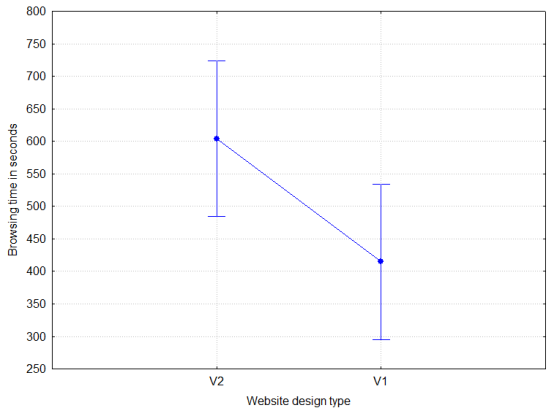
Table 7. Effect of Website Design and Flow State on Browsing Time (ANCOVA)

Variable	Treatment		Average	F	*p*-value
Website design	V1		367.71	20.33	<0.005
	V2		619.62		
Flow state	High		495.43	0.34	0.56
	Low		491.90		
Website design × Flow state	High	V1	368.25	0.01	0.92
		V2	622.61		
	Low	V1	367.17		
		V2	616.63		

Covariate	Beta	Average	F	*p*-value
Message involvement	0.06	31.90	1.20	0.27

Normality No major deviations observed Homoscedasticity Levene's test: p<0.05	Homogeneity of coefficients between groups (parallelism test) Website design × message involvement: p=0.67 Flow state × message involvement: p=0.17 Website design × flow state × message involvement: p=0.18

Figure 3. Average Browsing Time by Website Design Type

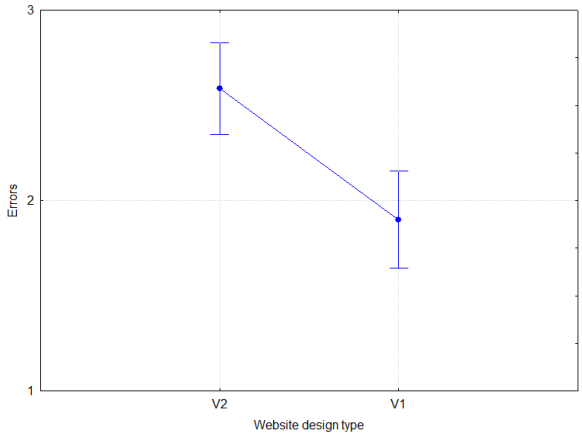


To test H_{1b}, once again an ANCOVA was carried out. The results demonstrated that when browsing V1 of the website, users registered significantly fewer errors (No. $Errors_{V1}$=1.90) than when browsing V2 (No. $Errors_{V2}$=2.59) (F=17.73; p<0.005). Together, these findings confirm H_{1b} (see Table 8 and Figure 4). Nor was message involvement significant (F=1.67; p=0.20).

Table 8. Effect of Website Design and Flow State on Number of Errors Committed (ANCOVA)

Variable	Treatment		Average	F	*p*-value
Website design	V1		1.90	17.73	<0.005
	V2		2.59		
Flow state	High		2.11	0.72	0.40
	Low		2.32		
Website design × Flow state	High	V1	2.01	0.57	0.45
		V2	1.54		
	Low	V1	2.68		
		V2	2.44		
Covariate		Beta	Average	F	*p*-value
Message involvement		0.10	31.9	1.67	0.20
Normality No major deviations observed Homoscedasticity Levene's test: $p \geq 0.10$		Homogeneity of coefficients between groups (parallelism test) Website design × message involvement: p=0.80 Flow state × message involvement: p=0.73 Website design × flow state × message involvement: p=0.36			

Figure 4. Number of Errors by Website Design Type



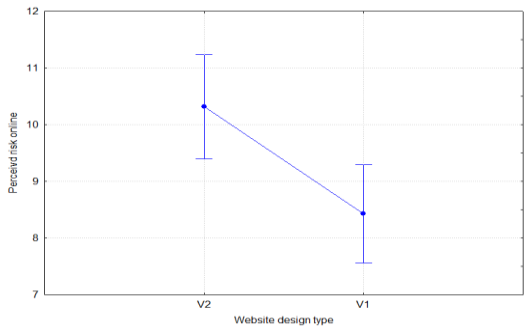
A further ANCOVA was performed to test H_2 and establish whether perceived risk online was moderated by website design type. In this case, the result of the parallelism test was significant as a marked interaction effect was observed between the covariate "message involvement" and the predictor variable "website design type" ($p<0.05$). One of the assumptions of the ANCOVA was therefore not fulfilled. Under these conditions, the results of the ANCOVA may be compromised (Hendrix et al., 1982). The appropriate design for modelling the influences of the predictors in this scenario is known as *separate slope design* (Rutherford, 2000). This is an overparameterized model that is similar to ANOVA, in which the main effects of the covariates on the predictor variables are omitted. Therefore, in this case, a linear model was used with different coefficients between groups, which demonstrated that website design type exerted a significant main effect on perceived risk online, in the expected direction ($F=8.36$; $p<0.01$). Users exposed to the more usable version of the website generated a lower perceived risk online ($Risk_{V1}=9.87$) than those browsing the less usable version ($Risk_{V2}=11.43$), meaning that H_2 can be confirmed.

Although it was not hypothesized, a significant interaction effect between website design type and message involvement on perceived risk was also observed ($F=5.96$; $p<0.005$), while the main effect of flow state on the response variable was found not to be significant ($F=0.23$; $p=0.63$). Analysis of the coefficients of the model leads to the conclusion that when a user accesses a website that has low usability, message involvement appears to reduce the level of perceived risk online to a lesser extent ($Beta_{low_usability}=-0.35$) than when they access a site with higher usability ($Beta_{high_usability}=-0.59$). In other words, the user's message involvement reduces perceived risk online, although this moderating effect is greater when they perceive the site to be more usable. By contrast, the covariate does not reduce perceived risk online in its interaction with flow state (see Table 9 and Figure 5).

Table 9. Effect of Website Design Type and Flow State on Perceived Risk Online (Separate Slope Design)

			SS	DF	MS	F	*p*-value
Intercept			3296.48	1	3296.48	137.98	<0.005
Website design × Flow State × Message Involvement			569.48	4	142.37	5.96	<0.005
Website design			206.72	1	206.72	8.65	<0.005
Flow State			5.41	1	5.41	0.23	0.63
Website design × Flow State			21.18	1	21.18	0.89	0.35
Error			11515.18	482	23.89		
Means	Website design			V1	8.43		
				V2	10.31		
	Flow State			High	9.50		
				Low	11.50		
	Website design × Flow State	V1		High	9.00		
				Low	10.74		
		V2		High	10.00		
				Low	12.82		
			Level of effect		t	*p*-value	Beta
Intercept					4.74	<0.005	
Website design × Flow State × Message Involvement			V1		−3.16	<0.005	−0.59
Website design × Flow State × Message Involvement			V2		−3.46	<0.005	−0.37
Website design × Flow State × Message Involvement			High flow state		−1.12	0.26	−0.26
Website design × Flow State × Message Involvement			Low flow state		0.78	0.44	0.14

Figure 5. Average Perceived Risk Online by Website Design Type



The ANCOVA results indicate that both the effectiveness of website performance (measured in terms of user browsing time and number of errors) and perceived risk online should be considered utilitarian variables. In none of the hypotheses tested so far was flow state or its interaction with the website design

found to be significant, with the latter being the only explanatory factor in the differences found for these predictor variables.

Meanwhile hypothesis H_3 proposes that attitude towards the tourist destination will be significantly greater among those users who experience a high flow state while browsing than among those who experience a low flow state. In this case, the results of the parallelism test—relating the covariate "message involvement" with the response variable "flow state"—were significant ($p<0.05$). Hence, a *separate slope design* model was proposed, in the same fashion as for the previous hypothesis.

The results demonstrated that flow state exerted a significant main effect (in the expected direction) on attitude towards the tourist destination ($F=9.44$; $p<0.005$), enabling H_3 to be confirmed.

However, no evidence was found of there being a significant main effect of website design ($F=0.35$; $p=0.55$) or of site design interacting with flow state ($F=0.07$; $p=0.78$) (see Table 10). That said, the interaction between the covariate "message involvement" and the two factors (site design and flow state) *was* found to be significant ($F=115.51$; $p<0.005$) (see Table 10 and Figure 6). These findings show that the moderating effect of message involvement is greater among those users experiencing a high flow state (Beta=1.32) who are browsing the more usable version of the site (Beta=1.29) than among those who are not; and there is a very similar effect between those who browse V2 of the website, regardless of their level of flow state (Beta=0.88) and those who experience a low flow state, regardless of the version they are browsing (Beta=0.82). However, for all cases it can be affirmed that as message involvement increases, so too does the user's positive attitude towards the tourist destination promoted on the site.

Finally, the ANCOVA that was carried out to test H_4 showed that there were significant differences between the two experimental groups for loyalty towards the tourist destination, depending on the flow state ($F=38.44$; $p<0.005$). The latter was significantly higher among users who experienced a high flow state ($Loy_{High_Flow}=18.72$) than among those experiencing a low state ($Loy_{Low_Flow}=15.17$). H_4 can therefore be confirmed.

On the other hand, both the main effect of website design ($F<0.005$; $p=1.00$) and also the interaction between the two factors on the scores for loyalty were found to be not significant ($F=1.03$; $p=0.31$). The covariate "message involvement" was also found to be not significant ($F=190.06$; $p<0.005$). Thus, the more the information on the website is perceived by the user to be of interest, the greater the effect of their flow state on their loyalty towards the tourist destination (Beta=0.55) (see Table 11 and Figure 7).

Table 10. Effect of Website Design and Flow State on Attitude towards the Tourist Destination (Separate Slope Design)

			SS	DF	MS	F	*p*-value
Intercept			15.12	1	15.12	17.14	<0.005
Website design × Flow State × Message Involvement			407.71	4	101.93	115.51	<0.005
Website Design			0.31	1	0.31	0.35	0.55
Flow State			8.33	1	8.33	9.44	<0.005
Website design × Flow State			0.07	1	0.07	0.07	0.78
Error			425.31	482	0.88		
Means	Website design			V1	5.37		
				V2	4.71		
	Flow State			High	6.01		
				Low	4.07		
	Website design × Flow State	V1		High	6.09		
				Low	4.64		
		V2		High	5.94		
				Low	3.49		
			Level of effect		t	*p*-value	Beta
Intercept					3.50	<0.005	
Website design × Flow State × Message Involvement			V1		11.43	<0.005	1.29
Website design × Flow State × Message Involvement			V2		13.62	<0.005	0.88
Website design × Flow State × Message Involvement			High flow state		9.39	<0.005	1.33
Website design × Flow State × Message Involvement			Low flow state		7.58	<0.005	0.82

Figure 6. Average Attitude towards the Tourist Destination by Flow State

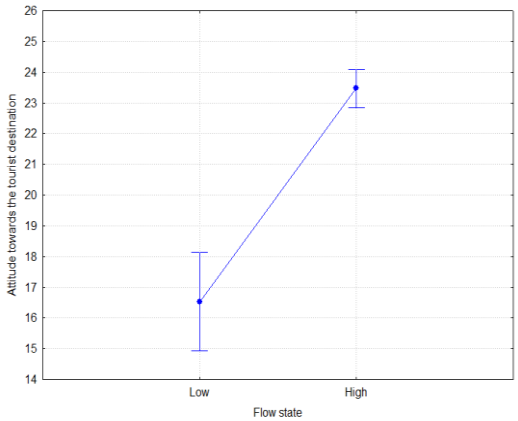
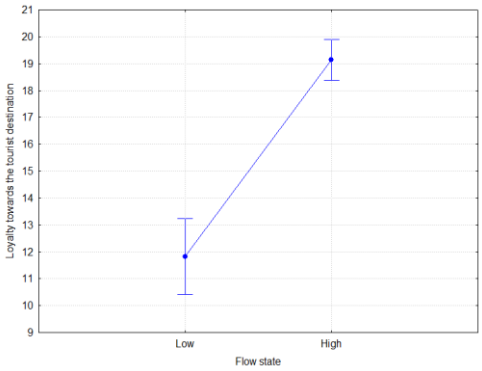


Table 11. Effect of Website Design and Flow State on Loyalty towards Tourist Destination (ANCOVA)

Variable	Treatment			Average	F	*p*-value
Website design	V1			16.5	<0.005	1.00
	V2			16.94		
Flow state	High			18.72	38.44	<0.005
	Low			15.17		
Website design × Flow State	High	V1		18.48	1.03	0.31
		V2		18.96		
	Low	V1		15.42		
		V2		14.93		
Covariate			Beta	Average	F	*p*-value
Message involvement			0.55	31.9	190.06	<0.005
Normality No major deviations observed Homoscedasticity Levene's test: $p \geq 0.10$			Homogeneity of coefficients between groups (parallelism test) Website design × message involvement: p=0.46 Flow state × message involvement: p=0.07 Website design × flow state × message involvement: p=0.51			

Figure 7. Average Loyalty towards the Tourist Destination by Flow State



Finally, Table 12 offers a summary of the hypothesis testing undertaken.

Table 12. Summary of Hypothesis Testing

Hypothesis	Outcome
H_{1a}: Website effectiveness, measured in terms of user browsing time during the purchasing process, is positively related to website usability.	Confirmed
H_{1b}: Website effectiveness, measured in terms of the number of errors committed by the user during the purchasing process, is positively related to website usability.	Confirmed
H_2: Perceived risk online is negatively related to website usability.	Confirmed
H_3: Users who present a higher flow state have a greater attitude towards the service offered via the website.	Confirmed
H_4: Users who present higher flow state have greater loyalty towards the service offered via the website.	Confirmed

5. Conclusions

The present work has examined the extent to which the functional design of the website and the flow state of the user (representing utilitarian and hedonic motivations, respectively) affect their purchasing behaviour and how they process information when browsing the site.

One key contribution of the work lies in its original use of professional design in creating two parallel websites hosted under one single domain name (buyuada.org), each with different objectives in terms of usability. This approach is in line with the recommendations of Moss (2004) and Nielsen (2004, 2009). To date, the majority of studies examining the role of website design on online user behaviour have used subjective measurements of usability (Belanche et al., 2012; Casaló et al., 2008a, 2008b; Flavián et al., 2006a, 2006b). The present methodology thus represents an important advancement in understanding the moderating effect of website design on online information-processing and, more specifically, on the effectiveness of the site's performance when the user is carrying out tasks while browsing. Data analysis demonstrated that a website with good usability will significantly reduce the subject's browsing time and the number of errors they commit during the purchasing process, and will also lower the perceived risk online.

A further contribution of the present work concerns how user flow state is measured. The work takes an indirect approach, focusing less on the final result achieved by the user and more on the dimensions of which the flow state is composed, according to earlier academic literature (Ghani and Deshpande, 1994; Koufaris, 2002; Sanchez-Franco and Roldán, 2005; Trevino and Webster, 1992). Specifically, the study focuses on perceived control and enjoyment during browsing.

The results show that a flow state positively affects attitudes and loyalty towards the tourist destination promoted via the website. Those users who experienced a high flow state presented attitudes towards the destination that were significantly more positive than did those who experienced a low flow state, and this relationship was also true for loyalty towards the destination. This finding supports those of other marketing studies on the relationship between hedonic motivations and loyalty-formation (Casaló et al., 2008a, 2008b).

Among the other contributions of the present work are its findings with regard to user message involvement, demonstrating its important moderating role in the online consumer response. As users' message involvement increases, so too do their attitudinal and conative responses grow. These findings echo those of other researchers in the offline context (Chen and Tsai, 2008), who have demonstrated that the emotional consequences of a high level of message involvement lead to more positive attitudes towards the product.

The overall conclusion is that when a firm is aiming to maximise the browsing time of users and thus reduce bounce rate, or to significantly reduce the number of user errors when performing associated tasks on the website, it should place greater emphasis on the utilitarian aspects of the site design than on the hedonic aspects. By contrast, when the aim is not so much to improve the site's effectiveness when the user is performing tasks during browsing but rather to generate positive attitudinal

and conative responses towards the brand promoted on the site, the firm should endeavour to increase the user's sense of enjoyment and control, which will lead them into a stronger flow state.

6. Practical and Managerial Implications

A number of interesting implications for management arise from the present work. First, investing in a good website design is shown to be a prerequisite for improving the level of message involvement and interest shown by users during browsing, which will, in turn, reduce the bounce rate and increase the length of time spent on processing the website information. This issue needs to be taken into account in particular by those firms and institutions offering e-commerce (particularly those operating in the tourism-related field, such as hotels, tour operators, travel agencies, and public bodies), since consumers report important functional and utilitarian benefits when browsing a site they perceive to have high usability compared to one they consider to have low usability. Such benefits include greater effectiveness in performance and a lower perceived risk online. As also demonstrated by Wood (2004), it is important to remember that a website design is not an end in itself but is rather a means of facilitating purchase and information-search on the part of the user. A good site design is the very basis of the online marketing strategies developed by firms.

In this regard, when designing a website it is not sufficient to follow the recommendations of Nielsen (2004, 2009) by simply drawing on heuristic lists of features for usability. It is also essential to base the site design on the user, for example by seeking their views on its usability via different questionnaires. For this purpose, the present study employed the WAMMI questionnaire (Kirakowski et al., 1998).

Another invaluable technique that is widely employed by firms to ensure the site design is centred on the user is card sorting. In a card sorting session, participants organize topics from a website into categories that make sense to them. Participants may also help to label these groups. Card sorting may involve physical cards or pieces of paper, or it may be accomplished with one of several online card-sorting software tools. It can help firms ascertain their users' expectations and understanding of topics central to the firm. Knowing how users group information can also help the firm to build the structure for its website, decide what to put on the homepage, or label categories and navigation effectively. The firm's choice of approach will depend on factors such as the available budget, the type and size of the organization, and the complexity of their website. There are numerous examples of firms that have improved profits by investing in user-centred website design. For example, in the late 1990s IBM increased its e-commerce sales by 400% thanks to improving the usability of ibm.com (Tedeschi, 1999), while Dell achieved an increase of 33 million dollars in its daily online sales following an initiative to enhance the usability of dell.com (Black, 2002).

Nowadays it is also essential that firms generate positive affect towards their brands, as a route to achieving a conative response among consumers, and to do so firms must achieve a transfer of affect from the website to the brand itself. The present work reveals that those users who enjoyed their time browsing the buyuada.org website and entered a flow state generated positive transfer of affect towards the Buyuada brand, and this, in turn, converted into intention to visit and recommend this fictitious tourist destination. It is important, therefore, to build elements into the site design that help lead users into a flow state. In this regard, the requirements of usability can give clues as to how to make the browsing experience even more pleasurable, such as the use of simpler menus, bullet points, bold and italic fonts, text in different sizes and colours, hypertext, images, and search tools.

Meanwhile, social networks are changing how users and consumers share the information they derive from the internet and how they interact with others. To improve the user's experience, it is essential to foster interactivity by including features such as widgets, buttons, and plug-ins from the main social networks (that is, Twitter, Facebook, Google+, Linkedin, and so on). Other means, such as contact and complaint forms, forums, chat rooms, and handy tools such as personal calculators (e.g., for weight, heart rate/risk, intelligence, emotional state), or virtual assistants, can be of enormous use in achieving a greater level of enjoyment for the user. This approach will undoubtedly lead to an enhanced brand image and reputation.

The results of the present study, in terms of message involvement, indicate the need to examine in more depth the suitability of messages vis-à-vis the cultural demands of site visitors. Looking to cultural paradox theory (De Mooij, 2003), although the user's cultural values may influence the design of a website, the benefits they seek are quite another matter. In this regard, Okazaki and Muller (2008, 2011) found that Japanese adolescents belonging to a collectivist culture were attracted to messages offering the kind of benefits more typically associated with individualist cultures. As regards the functional design, Alcántara-Pilar et al. (2013) recommend that cultural values be taken into account when designing the site. In their cross-cultural analysis, they demonstrated that cultures with a long-term orientation construct their attitudes towards a website on the basis of the perceived usefulness of that site (that is, the degree to which it helps users to improve the efficiency or quality of their work or task); while users who have more of a short-term orientation base their attitudes on perceived ease of use. The former group looks to long-term use of a website, which lends itself to future loyalty, while the latter group seeks a quick search and purchase of the online product. For this reason, it is recommended that firms take into account the cultural values and socio-demographic characteristics of users, such as age or gender, when designing their websites. Further research is therefore needed to investigate whether the culture to which the user belongs moderates the results of the present study.

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