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"The influence of cultural Differences on the perception of a web site :a comparision between México and U.S "

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ABSTRACT

Research on cultural differences has been based on disciplines such as anthropology, business or communication, focusing on cultural differences and the perception of the site, but always with a technical scheme. The cultural background in the development of the Website is important to avoid mistakes that may cause bad image to the customer. Nantel and Glaser (2008) have found that language, a major cultural factor, is less important when the quality of the offered products is attractive to the buyers. To see how the website is perceived by two different cultures a Website was made by Spanish speaking country (Mexico), but designed in English, trying to remove traces of the cultural background from the Mexican company that designed and implemented the website. The Website was designed and developed specifically for this research, using usability principles, trying to access to a multicultural buyers market, and simulating a real selling music site.

Keywords: Usability, cultural differences, cross-cultural studies, e-marketing

RESUMEN

La investigación sobre las diferencias culturales se ha basado en disciplinas como la antropología, los negocios o las comunicaciones, centrándose en las diferencias culturales y la percepción del sitio, pero siempre desde un punto de vista técnico. El contexto cultural en el desarrollo del sitio web es importante para evitar errores que pueden causar una mala imagen para el cliente. Nantel y Glaser (2008) han encontrado que el lenguaje, un factor cultural importante, es menos importante cuando la calidad de los productos que se ofrecen son atractivo para los compradores.

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Para ver cómo un sitio web es percibido por dos culturas diferentes, se diseño una página Web por una compañía mexicana, pero diseñado en inglés específicamente para esta investigación, tratando de eliminar los restos de los antecedentes culturales de la empresa que lo diseñó e implementó. Se utilizaron principios de usabilidad, tratando de acceder a un mercado de compradores multiculturales, y la simulación de un sitio de venta de música real.
Palabras Clave: Usabilidad, diferencias culturales, estudios multiculturales , e-marketing

INTRODUCTION

The first studies about the implementation of a Web site used to focus on the development and the technical aspects of the site, which has led most research on web site design to analyze technical aspects of it. Thus, it has generated a large number of design elements that will apparently make a web site to be successful: usability, use of images, aesthetics, navigation and search, site interactivity, elements such as brand power and the degree of site customization (A°berg y Shahmenhri, 2000).

The purpose of this research is to analyze whether users perceive the existing cultural background in the development of a Web site when it is showed to people from cultures with different values, even though the site has been developed using design elements based on the principles of usability, even including other design elements recommended to minimize cultural shock. In order to accomplish this purpose, the cultural model that has been most developed in the academic literature on marketing is explored -Hosftede values - to determine if users with similar values prefer the same type of information, or if countries more influence by the English language, idiom chosen to develop and implement the Web site based on the idea of minimizing the cultural background, have a preference for certain type of information.

According to Falk et al. (2007), not only the technical design of a Web site is the key to success. Also it should be considered other important factors such as the culture of the users that the site is focused on. It is not about adapting the company sites to attract customers from different regions, something that many companies do just by switching the language (Lynch et al, 2001).

STATE OF THE ART

Reviewing the literature, it has been found significant cultural issues to be taken into account in the design of a site. Companies that offer their products in different markets are willing to improve the usability of their sites to attract more visitors. Examples of some pieces of work are those of Ferreira (2002), that examines topics related to language besides to the metaphors used, the attitudes and preferences that weigh in the cultures to which the site aims to reach or Nantel and Glaser (2004), which also focus on the use of language to improve the usability of a site and thus attract more visitors, offering create sites

oriented to each culture rather than a universal one. In sum, most of these works are based on understanding the cultural differences and from there designing a specific site.

The models proposed so far come from computer science. However, we believe that you cannot leave out the cultural and organizational factors affecting the development of the site (Ogbonna and Harris, 2007). Thus, cultural issues and dynamics faced by organizations are a very important factor that impacts the design, development and implementation of a site. What if the site is oriented at a different market to the cultural background of the designer? Nantel and Glaser (2008) have found that a cultural factor as relevant a priori, as is the language, it is less important when the quality of what is offered is attractive to the prospective buyer. Hence, sometimes the native language of the site seems to have no impact on the perception of usability and in the purchasing decision taken by the user. While there are various models for analyzing the cultures from different perspectives, some of the dimensions and their interpretations of how a culture behaves under those values is equivalent between the different authors. Models, regardless of whether they are related to areas such as politics or business agree mostly in two dimensions: Individualism vs. Collectivism and risk aversion. Many of the studies that have been made about culture and the Internet are related to the reduction of uncertainty or risk at the time of a commercial transaction, or tried to model sites that may be perceived the same way by different cultural groups (Hofstede (2010), Trompenaars and Hampden-Turner (1998), Chaney and Martin (2005), House et al., (2002).

Marcus and Gould (2000) made an analysis of several Internet portals where they assess and classify different groups defined according to the dimensions of Hofstede and found that different cultures affect the design of their sites. Their conclusion is that culture, expressed through the dimensions of Hofstede affects the design of Web pages. In the study by Matei and Ball-Rokeach (2001) it was found that among the ethnic communities living in Los Angeles the groups of the most collectivist societies (in this case Korea and China), make from three to two times more on-line friends than the groups of European origin (while Hispanics were the ones with the lowest percentage at the time to make friends on-line). Kim and Yun (2007) attribute this to that in collectivist societies is easier for users to express their emotions in an environment where it would be impossible to communicate face to face, as is the case of Korea. In the work of Miura and Yamashita (2007) we observe that the same applies to Japanese users of blogs. They are more sensitive to the negative responses on their sites, concluding that this is due to the collectivist mentality of Japan, where they perceive less risk to say something negative when it is not say face to face. The work of Nath and Murthy (2004) shows that issues such as community, income level, the country's innovation, risk aversion and masculinity of a culture have a significant impact on Internet penetration. As far as differences regarding gender, countries with a high level of masculinity value productivity and try to

be the best (Alberts-Miller and Gelb, 1996), and advertising shows how effectiveness of a product emphasizing on all the capabilities of site performance.

Studies have found that much of the risk perception is influenced by the culture of a country, since this is one way of interpreting the world (Ueltschy et al, 2004). Traditionally it has been perceived as a higher risk purchasing services than goods, due to the intangible nature of the former. Regarding on-line sales is practically saying that all sold products are intangible, so that the perceived risk increases among consumers and users (Ueltschy et al, 2004). The same applies for the Internet adoption in economically undeveloped countries, where users represent less than 1% of the population like in countries such as Bangladesh, Nigeria, Vietnam and Zimbabwe (Nath and Murthy, 2004). Yeniryut and Townsend (2003) found that the lower acceptance of new products can be supported with power distance and risk aversion, finding that technological innovations are high in countries with small power distance, low risk aversion and higher individualism. While Linjun et al. (2003) show that power distance is a key element in the e-mail acceptance in China. The use of color can also reduce ambiguity for cultures with high levels of risk aversion, or it can be used to maximize information without redundancy, for cultures with low levels of risk aversion (Zahir et al, 2002).

PROPOSED MODEL AND SAMPLE CHARACTERISTICS

For this research, we have been worked on a site previously designed with usability principles developed by Nielsen (2002), relating these to indices of Hofstede's cultural values. Thus, the hypotheses have been developed for each cultural value related to Web design as it is indicated below (TABLE 1).

TABLE 1. Summary of the Formulated Hypotheses

Hofstede´s values	Relationship of usability	Hypotheses	Element of usability
Riskaversion	H1a: (-)	The higher the risk aversion index from a country, the lower the perception of Web site security.	Security
	H1b: (-)	The higher the risk aversion index, the lower the perception of navigation easiness of the site.	NavigationEfficiency
	H1c: (-)	The higher the risk aversion index, the lower the perception of control on the site.	Control
	H1d: (+)	The higher the risk aversion index, the greater the importance of the site content	Content

Hofstede´svalues	Relationship of usability	Hypotheses	Element of usability
Collectivism	H2a: (+)	The higher the index of collectivism, the lower the perception of control on the site.	Control
	H2b: (-)	The higher the index of collectivism, the lower the perception of freedom of navigation on the site.	NavigationEfficiency
	H2c: (-)	The higher the index of collectivism, the lower the interest in the site.	Emotion
	H2d: (-)	The higher the degree of collectivism, the lower the perception of a site as safe.	Security
	H2e: (-)	The lower the index of collectivism, the greater the importance of the site content.	Content
Masculinity	H3a: (+)	The higher the masculinity index, the greater the importance in the performance of the site and its products (easiness of use.)	Easiness of use
	H3b: (+)	The higher the masculinity index, the greater the importance of taking control of the Web site.	Control
	H3c: (+)	The higher the masculinity index, the greater the importance of the navigation easiness of the Web site.	NavigationEfficiency
Powerdistance	H4a: (+)	The higher the power distance, the greater the perceived need for security features on a site.	Security
	H4b: (+)	The higher the power distance index, the greater the importance in the site content.	Content
	H4c: (+)	The higher the power distance index, the greater the importance in the language used on the site.	Language

Source: Own Elaboration

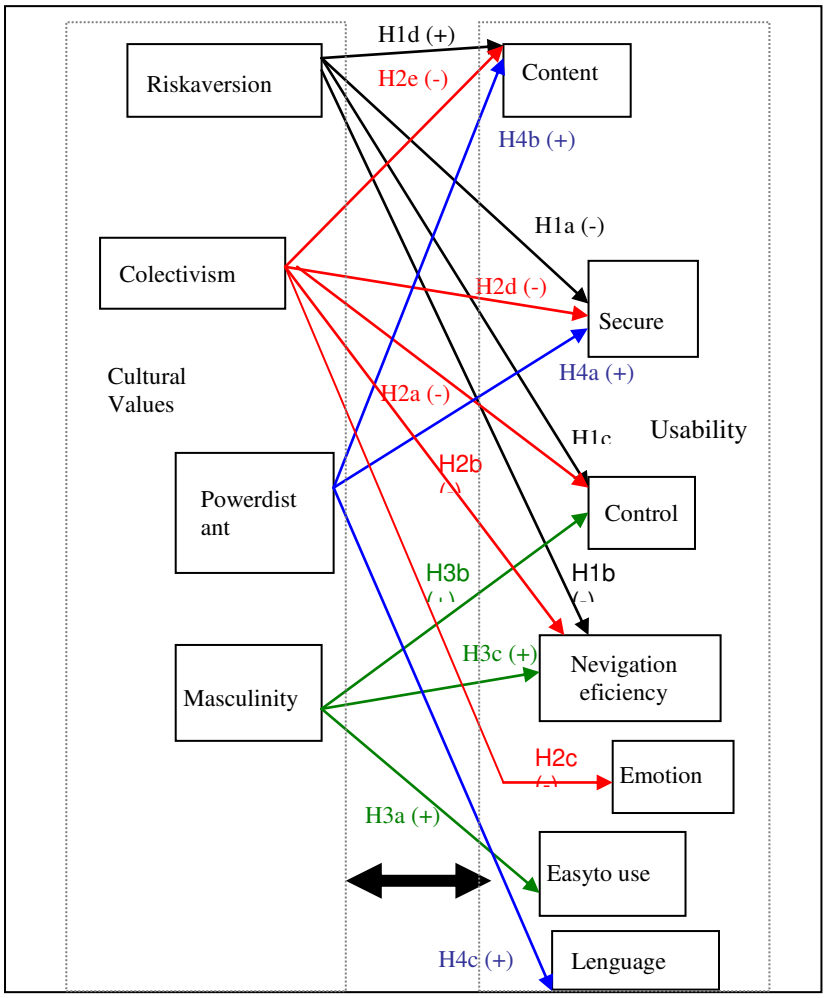
Taken into account the principles of usability of Nielsen (2002) for the design of Table 1, in the case of this variable there are reduce the number of actions that the user must do in order to avoid losing it, being necessary to convey a sense of security and credibility on the site. FIGURE 1 shows the proposed full model with the entire hypothesis listed.

For the sample college students were selected at the discretion or convenience from Mexico and U.S. The reasons for choosing these countries were mainly two: 1) They represent a wide difference between them regarding the range for risk avoidance, power distance, and individualism / collectivism, being the dimension of masculinity / femininity the one that presented a narrower range of difference between the representatives of the participating countries and 2) language, having the largest number of speakers of English (U.S), the most populous Spanish speaking country (Mexico).

Data collection was performed during the period from April to June 2010, so it has been possible to achieve an appropriate size for the test statistics. For technical reasons, the survey had to be answered in one session; therefore it could not be interrupted. 352 participants answered in Mexico, of which only 332 did correctly. The U.S. sub-sample of participants was the smallest, due to the more difficult to obtain answers. In order to approximate the sizes of the various subsamples, 206 questionnaires were taken from Mexico and 190 from the U.S. To obtain the test results and all statistical models SPSS version 18 and AMOS 18 were used.

The site and its user interface are based on a model of e-commerce distribution and sale of music in order it matches with the four elements that Postava-Davignon et al. (2004) mentioned: a feeling of confidence, sense of security, sense of interest in the site and desire to return to the site. It was decided that the criteria of usability of Nielsen (2002) was the main basis to design the site and also were taken into account the categories of usability from the Microsoft guide described by Keeker (2004), including those areas identified by Agarwal and Venkatesh (2002) and Postava-Davignon et al. (2004). The site is in English and is geared to selling independent music, as a consequence the language does not have a representative impact on the perception of usability as the quality of what is offered is attractive to the consumer (Nantel and Glaser, 2008). While CD sales have declined, it is still a major source of online sales. Independent music labels have survived through the sale of formats that are believed missing -such as vinyl- and a target market consisting of an informed public, which continues to consume music in traditional formats (Hidalgo, 2009). Using a portal designed in English will also help to find whether the application of usability elements in site design effectively reduces the cultural impact of it, fulfilling a major premise that a Web site allows: it serves as a knowledge distribution channel for both providers and users of a site (Fang and Holsapple, 2007).

FIGURE 1. Model of the Relations Between Usability and Cultural Values and Their Hypothesis



Source: Own Elaboration

THE METHOD OF ANALYSIS

The online design and implementation was carried out by a Mexican company that has experience in Web sites, even at a governmental level. The Web site design was the most "culturally neutral" as possible, considering that there are users whose cultural values are opposite. The model is based on the Visibility Graph Usability Center at Georgia Tech (Fang and Holsapple, 2007), that suggests raising a series of instructions for the participants in order to explore and then execute a series of tasks, which are: seeking for information or for a particular object. Part of the demographic information and prior experience, appears in most of the usability studies and perception of a site, as well in analysis on Internet usage and

satisfaction (Roy et al., 2001, Palmer, 2002; Ferreira, 2002, Agarwal and Venkatesh, 2002; AMIPCI, 2004). The culture dimensions are shown in TABLE 2.

TABLE 2. Description of the Dimensions of Culture

Dimension	Item	Description
Risk aversion RISK	RISK1	Safety is an important concern in my life
	RISK2	Life is so uncertain that I must be in constantly alert to not be in disadvantaged
	RISK3	It is important to consider different points of view when I take personal and social decisions
Collectivism / Individualism COLECTIVISM	INDIVIDU1	I like to share little things with my neighbors
	INDIVIDU2	Being an unique person is important to me
	INDIVIDU3	The decisions achieved in group are better than those achieved individually
	INDIVIDU4	Usually I sacrifice my own interest for the benefit of my group
	INDIVIDU5	I prefer to rely on others
	INDIVIDU6	It is important for me to be useful for others
Power distance POWER	POWER1	My manager is a person like any other
	POWER2	Managers are always inaccessible and distant
	POWER3	The way to change society is to make everyone equally powerful
	POWER4	Other people are a threat to my power of one and I cannot trust them
Masculinity/ Femininity MASCULIN	MASCUL1	Having a career is more important for men than for women
	MASCUL2	Men usually solve problems with logical analysis, women generally are more visceral
	MASCUL3	Solving difficult problems usually require a strong and active approach, which is typical of men
	MASCUL4	There are some jobs that a man can always do better than a woman

Source: Own Elaboration

Several authors use the site navigation to evaluate perceptions of usability (Nielsen, 1994, Agarwal and Venkatesh, 2002; Palmer, 2002, Hall et al., 2004). The effects on the usability dimensions are restricted to site navigation tasks such as selecting an item, obtain personal data and product selection of a music sales company. The dimensions of culture are shown in Table 3.

TABLE 3. Usability Dimensions Description

Dimension	Item	Description
Security SECUR	SECUR1	The site is secure
	SECUR2	I trust in the site
	SECUR3	I relied more on the site as it has social networking (myspace, twitter, facebook)
Navigation Efficiency	EFICIENCY	The site is simple to navigate
Control CONTROL	CONTROL1	It is easy to do what I want to do
	CONTROL2	The performance of the site was easy
Content CONTENT	CONTENT1	The site provides good information about products
	CONTENT2	The image quality is good
	CONTENT3	The site produces purchase wishes
	CONTENT4	I identify with the images of the site
Emotion EMOCION	EMOCION1	The site is interesting
	EMOCION2	The site is fun
Easiness of use	EASY	Obtaining information is easy
Language	LENGUAGE	I identify with the language used on the site

Source: Own Elaboration

Covariance Structure Model (CSM)

In order to formulate the covariance structure model there were carried out two stages proposed by Anderson and Gerbing (1988): 1) To analyze the goodness of the psychometric properties of the measuring instrument used, performing a confirmatory factor analysis (CFA). 2) After the goodness acceptance of the measuring instrument, this is modified including the theoretically proposed structural relationships that are analyzed by a Structural Equations or Covariance Structure Model (CSM).

Before using these tools, prior analysis was required, such as inspecting the homogeneity of the standard deviations and doing multicollinearity and normality testing of variables. Subsequently it was conducted an exploratory factor analysis that allowed to observe the structure of relationships among variables.

Preliminary Analysis: Homogeneity, Multicollinearity and Normality

First, it was found that there is consistency among the variables due to the observance of averages and standard deviations. Thus, we ensure a good adjustment goodness in later models, it is advisable that there are no variables in the model with a lot of variability and others with few. The multicollinearity test of the tolerance statistical values are above 0.1 and the inflation variance factor (IVF) is below 10, therefore it is not perceived a possible problem of multicollinearity for any variable. Thus, the variables of the model met the requirements for their use.

Exploratory Factor Analysis

To preliminarily assess the unidimensionality of the latent concept, this is, if the factor structure underlying the data is acceptable, we performed an exploratory factor analysis. The extraction procedure has been the Principal Component Analysis (PCA) for the dimensions of cultural values and usability. Regarding the results of the usability dimensions, the measure of sampling adequacy Kaiser-Meyer-Olkin (KMO) has a value of 0.873, higher than the acceptable value of 0.7, while the Bartlett's sphericity test has a p-value inferior than the significance level (0.05) to reject the null hypothesis that the correlation matrix is an identity one; therefore it is concluded that the factor is adequate. Concerning the test for the variables of culture, the measure of sampling adequacy Kaiser-Meyer-Olkin (KMO) has a value of 0.720, higher than the acceptable value of 0.7 and the Barlett´sphericity test has a p-value lower than the limit of level of significance (0.05) to reject the null hypothesis that the correlation matrix is an identity matrix, so we conclude that the factorial is adequate.

Model Applied to the U.S.

The U.S. model (Figure 2) consists of seven latent variables: all are constructs of culture, where only the dimension of "risk aversion" is missing within the dimensions of Hofstede. To complete the seven latent variables, four variables of usability, security, content control, and emotion are considered.

For the U.S. also are taken into consideration three observable variables related to usability, navigation efficiency, ease of use and language. Table 6.20 shows the significant p-values for the model and the relations between them. The first column shows the influence of some elements of usability regarding cultural variables. In the fourth column are located the correlation coefficients obtained through a

weighted regression and in the last column the estimated values acquired by a standard weighted regression. In the penultimate column are shown significant p-values, represented by *** for 1%. Significant values for 5 and 10% are illustrated with their numbers. In the table are also pointed up the values of the reflex variables, written in italics. Table 4 shows the results of structural equations.

TABLE 4. Results of Structural equations for the U.S.

Relation between variables			Estimates	Correlation coefficients	P	Estimate
CONTENT	<---	COLLECTIVISM	10,843	3,683	***	,981
SECURITY	<---	COLLECTIVISM	6,913	3,447	***	,607
CONTROL	<---	COLLECTIVISM	11,439	3,735	***	,999
EMOTION	<---	COLLECTIVISM	10,250	3,583	***	,909
SECURITY	<---	POWER	,393	3,385	***	,271
CONTENT	<---	POWER	,353	3,638	***	,251
INDIVIDU1	<---	COLLECTIVISM	1,000			,055
POWER1	<---	POWER	1,000			,398
POWER3	<---	POWER	,688	3,444	***	,252
MASCUL1	<---	MASCULIN	1,000			,631
MASCUL2	<---	MASCULIN	,942	6,808	***	,631
MASCUL3	<---	MASCULIN	,914	7,143	***	,843
MASCUL4	<---	MASCULIN	,644	4,723	***	,389
SEGUR1	<---	SECURITY	1,000			,810
SEGUR2	<---	SECURITY	1,172	11,595	***	,896
CONTENT1	<---	CONTENT	1,000			,682
CONTENT2	<---	CONTENT	,852	9,328	***	,720
CONTENT3	<---	CONTENT	,574	4,453	***	,341
CONTENIDO4	<---	CONTENT	,838	6,188	***	,506
CONTROL1	<---	CONTROL	1,000			,732
CONTROL2	<---	CONTROL	,948	9,721	***	,693
SEGUR3	<---	SECURITY	,485	2,992	,003	,249

Relation between variables			Estimates	Correlation coefficients	P	Estimate
EMOTION1	<---	EMOTION	1,000			,705
EMOTION2	<---	EMOTION	,813	7,317	***	,580
EFFICIENCY	<---	COLLECTIVISM	12,132	3,696	***	,737
LANGUAGE	<---	POWER	,380	2,548	,011	,162
EASINESS	<---	MASCULIN	,164	3,539	***	,151

Source: Own Elaboration

It is noted that the U.S. index of collectivism affects four usability variables (security ($\lambda = 3.444$), content ($\lambda = 3.683$), control ($\lambda = 3.735$) and emotion ($\lambda = 3.583$)), being control the variable most significant, followed by content. In addition, collectivism also influences an observable variable (navigation efficiency ($\lambda = 3.693$)). The significant level in all of them is 1%. Collectivism dimension is therefore an important factor to explain the differences in perception of a Web site.

The power distance dimension has effects in the three usability variables, two of them as latent and one as observable. In addition, security ($\lambda = 3.385$) and content ($\lambda = 3.638$) impact language ($\lambda = 2.548$).

With regard to sex ratio, it only influences the observable variable "easiness of use" ($\lambda = 3.539$). No relationships were found that could indicate the influence of risk aversion in the perception of the site. The formulated hypothesis and results are showed in Table 5.

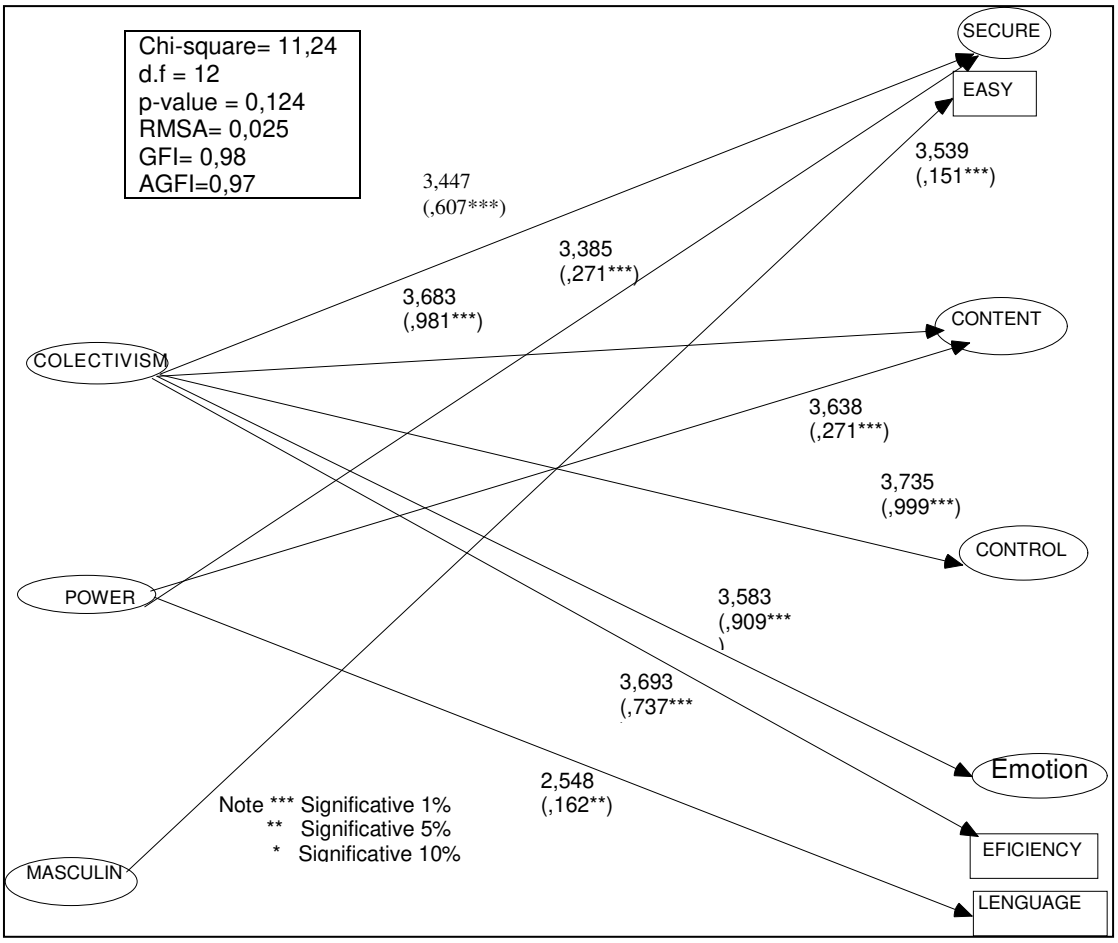
TABLE 5. Verification of the formulated hypothesis for the U.S.

Constructs/ Variables	HIP.	Formulation	Verification
Collectivism	H2a: (-)	The control over the processes of a Web site has a negative correlation regarding the index of collectivism. The higher the index of collectivism, the lower the perception of control on the site.	Yes, the sign changes because individualism was measure
	H2b: (-)	The degree of openness and freedom concerning navigating a system has a negative relationship with the collectivist culture. The higher the index of collectivism, the lower the perception of navigation freedom on the site.	Yes, the sign changes because individualism was measure

Constructs/ Variables	HIP.	Formulation	Verification
	H2c: (-)	The interest (emotion) that produces a site has a negative correlation with the degree of collectivism. The higher the index of collectivism, the lower the interest in the site.	Yes, the sign changes because individualism was measure
	H2d: (-)	There is a negative relationship among the security of a site and the degree of collectivism. The higher the degree of collectivism, the lower the perception of a site as safe.	Yes, the sign changes because individualism was measure
	H2e: (-)	There is a negative relationship among the index of collectivism and the content of a site. The lower the index of collectivism, the greater the importance of the site content.	YES
Masculinity	H3a: (+)	There is a positive relationship among sex ratio and the performance of a product (ease of use.) The higher the sex ratio, the greater the importance in the performance of the site and its products.	YES
Power distance	H4a: (+)	Perceived safety at a site has a positive relationship concerning the power distance. The higher the power distance, the greater the perceived need for security features on a site.	YES
	H4b: (+)	There is positive relationship among the index of power distance and site content. The higher the power distance index, the more importance the content has in the site.	YES
	H4c: (+)	There is a positive relationship between an index of power distance and language used in a site. The higher the power distance index, the greater the importance of the language used on the site.	YES

Source: Own Elaboration

FIGURE 2. Structural Equation Model for U.S.



Source: Own Elaboration

Model Applied to Mexico

The model for Mexico only comprises two cultural variables: Sex ratio vs. femininity and collectivism. The two appear as latent variables and all enclose their reflex variables (Fig. 3). In terms of usability variables, four of them are exposed as latent variables and two as observable variables.

The observable variables are efficiency and easiness of use, which are influenced by the masculinity variable $\lambda = \lambda = -2.929$ and -3.224 respectively. It can be noticed that values have negative signs. There is a latent variable that influences also masculinity, control ($\lambda = -2.016$). The three variables have a different weight, being the ones with the greatest influence easiness of navigation followed by the navigation efficiency. The three variables are significant at 1%. The estimators for the collectivism variable are: efficiency of navigation, which is an observable variable with $\lambda = -2.968$. The other four appear as latent

variables, being content the one with most significance (λ = 3.166), followed by excitement (λ = 3.110), control (λ = 3.045) and finally safety (λ = 2.693), all with positive signs.

The weight of the significant variables and their influence can be noticed in TABLE 6, marked in italics are each of the reflection variables.

TABLE 6. Results of Structural Equations for Mexico

Relation among variables			Estimates	Correlation coefficients	P	Estimates
CONTENIDO	<---	COLLECTIVISM	2,332	3,166	,002	,999
SEGURIDAD	<---	COLLECTIVISM	1,574	2,963	,003	,586
CONTROL	<---	COLLECTIVISM	1,968	3,045	,002	,999
EMOTION	<---	COLLECTIVISM	2,256	3,110	,002	,786
CONTROL	<---	MASCULIN	-,094	-2,016	,044	-,171
INDIVIDU1	<---	COLLECTIVISM	1,000			,245
INDIVIDU2	<---	COLLECTIVISM	,869	2,400	,016	,252
INDIVIDU3	<---	COLLECTIVISM	,941	2,303	,021	,227
INDIVIDU4	<---	COLLECTIVISM	,823	2,273	,023	,225
INDIVIDU5	<---	COLLECTIVISM	,987	2,464	,014	,277
INDIVIDU6	<---	COLLECTIVISM	,885	2,740	,006	,275
MASCUL1	<---	MASCULIN	1,000			,710
MASCUL2	<---	MASCULIN	1,147	8,995	***	,779
MASCUL3	<---	MASCULIN	1,060	8,870	***	,764
MASCUL4	<---	MASCULIN	,764	6,532	***	,520
SEGUR1	<---	SECURITY	1,000			,806
SEGUR2	<---	SECURITY	1,056	8,635	***	,857
CONTENT1	<---	CONTENT	1,000			,575
CONTENT2	<---	CONTENT	,930	9,707	***	,530
CONTENT3	<---	CONTENT	,943	6,067	***	,453
CONTENT4	<---	CONTENT	,856	5,241	***	,376
CONTROL1	<---	CONTROL	1,000			,550

Relation among variables			Estimates	Correlation coefficients	P	Estimates
CONTROL2	<---	CONTROL	1,258	6,924	***	,636
SEGUR3	<---	SECURITY	,338	2,737	,006	,209
EMOTION1	<---	EMOTION	1,000			,758
EMOTION2	<---	EMOTION	,974	7,447	***	,696
EFICCIENCY	<---	COLLECTIVISM	1,678	2,968	,003	,495
EFICCIENTY	<---	MASCULIN	-,216	-2,929	,003	-,207
FACILITY	<---	MASCULIN	-,190	-3,224	,001	-,206

Source: Own Elaboration

Again, it is collectivism the cultural dimension that best represents cultural differences. These values are consistent with what has already been shown in other studies (Yano and Seo (2003), Zandapour and Harich (1996), Matsumoto et al., (1998)) on these dimensions, which also explains the behavior and characteristics of many countries and are also key parts to deduce the origins of cultural differences that cause problems to achieve success with a website. Table 7 shows the assumptions that have been demonstrated for each cultural dimension regarding the variables of usability and, as well, those that could not be verified.

TABLE 7. Verification of the hypothesis set out for Mexico

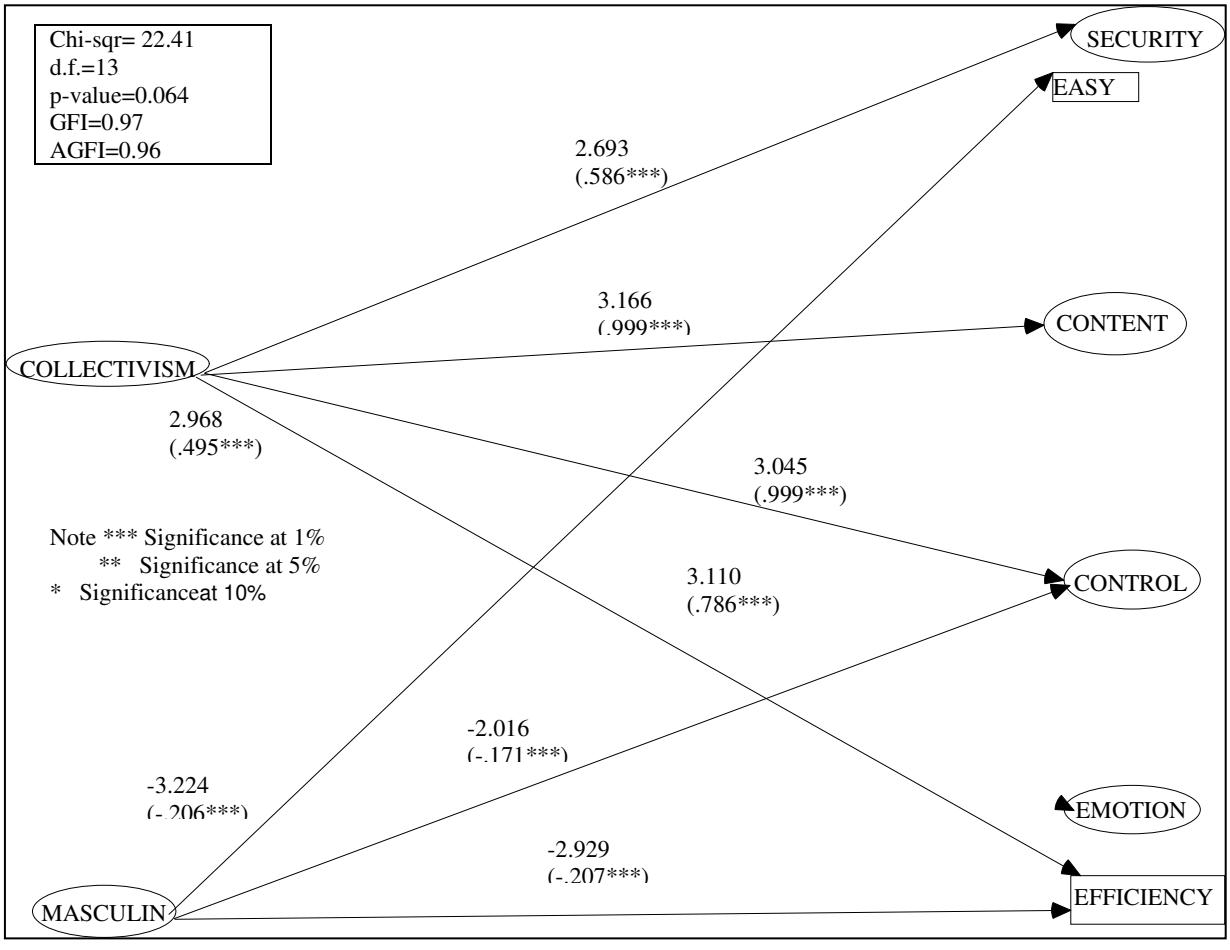
Variables	HIP.	Verification
Risk aversion	H1a: (-)	NO
	H1b: (-)	NO
	H1c: (-)	NO
	H1d: (+)	NO
Collectivism	H2a: (-)	YES. The measured variable is individualism
	H2b: (-)	YES. The measured variable is individualism
	H2c: (-)	YES. The measured variable is individualism
	H2d: (-)	YES. The measured variable is individualism
	H2e: (-)	YES. The measured variable is individualism
Masculinity	H3a: (+)	YES
	H3b: (+)	YES
	H3c: (+)	YES

Variables	HIP.	Verification
Power distance	H4a: (+)	NO
	H4b: (+)	NO
	H4c: (+)	NO

Source: Own Elaboration

No relationships were found between control, efficiency of navigation and masculinity / femininity. Also, it should be noted that the assumptions for risk aversion could not be verified, since this construct does not appear in the model derived from the structural equations.

FIGURE 3. Structural Equation Model for Mexico



Source: Own Elaboration

RESULTS AND CONCLUSIONS

This paper has sought to extend the study of the relationship between cultural differences and electronic commerce, and to observe, interpret and understand the perceptions of participants, separated by cultures and nationalities about Web design.

Issues related to security were taken into account to increase control on the site, while the designer had to consider about the site content as well as the freedom limit of navigation. This issue was perceived positively by a collectivist culture like Mexico, but it was also effective for the U.S. In our study it is confirm that this cultural dimension has the greatest weight concerning the design of Web sites. Masculinity has also proven to be a cultural dimension that appears in the two countries. Mexico has the highest score in the measurement of masculinity, according to Hofstede.

For the U.S. also the three formulated hypotheses regarding the cultural dimension of power distance were accepted, which has a positive influence on language, site content and perceived safety on the site. We must remember that this nation has a higher value on power distance than the U.S., having this last country more equitable relations between the structures of power. Mexico has no relations between power distance and risk aversion for the model. And most important, this is the country where elements of culture have less influence on design. For U.S, there are more design elements influenced by a greater number of cultural elements; thus it was demonstrated that participants in this study have noted that the site was developed by a different culture to them, while Mexicans accepted a better design.

As it was expected, the resulting models were different for each country; meaning that users from USA perceived differently the site designed by Mexicans. As the site has been designed in English, but considering the collectivist culture (Mexico), issues related to security had to take into account to increase the control on the site, prioritizing the site content as well as limiting the freedom of navigation. This is consistent with authors such as Barber and Badre (1998), who stated that there are elements prevailing in the interface design within a given culture, such as cultural markers.

Despite the facts that a site can be written in a language such as English and can be directed to an international market, it must have a design that emphasizes the quality of the offering, to create interest in the prospective buyer. Nevertheless, many companies create multicultural designs or different versions for distinct markets but with an ethnocentric view, which is detrimental to the success that the site may have (Becker and Mottay, 2001). Again, is the consideration of cultural issues a key to the successful design of a site and avoid that if it will be translated, it is transformed with mistranslations and grammatical inconsistencies that are not appropriate to the culture.

The issue of designing influences the reduction of uncertainty in a site, when it allows confidence and enables the navigation to be more accessible. The usability-engineering design of a site helps to make it

more efficient and reduce any potential fears, but this is not enough. Once more it is emphasized that cultural differences should be considered (Nielsen, 2002; Quesenbery, 2001, Agarwal and Venkatesh, 2002, Gray and Salzman, 1998). It is precisely in the study of culture that has been confirmed that designing forms vary according to cultural values of a country (Marcus and Gould, 2000), in this case, using Hofstede's cultural dimensions to test the hypothesis it was proved that there are indeed different appreciations on a site, according to the culture that visits. This study indicates that not only is necessary to make use of usability, but also to considerate cultural issues. It is especially important to note that one of the cultural dimensions that represent a weighty role in cultural issues is individualism / collectivism (Ferreira, 2002).

LIMITATIONS OF WORK AND FUTURE RESEARCH

The most important limitation of this work comes from its exploratory nature and foremost from the source of data collection. The survey was based on a sample of convenience that cannot be regarded as homogenous. Firstly, because although it has been distributed mainly among university students in Mexico and U.S, other users have had access the Web and therefore have produced biases related to age or educational level, mainly. Therefore, in subsequent studies it will be considered conclusive this limitation by designing a sample that, although it could be convenience, has the same amount for sociodemographic variables that may produce a higher bias in relation to the cultural dimensions or the principles of usability.

Second, the participants are not necessarily music buyers and collectors of records, consequently the user characteristics of collectors are not reflected in the site preferences. For further studies, we believe mandatory to use samples that truly represent the people who visit such sites. Another limitation regarding the chosen sample is that although the web is the model actually used by several companies, it does not represent one of the major industrial markets. Although sales of vinyl records in formats have increased, it is a fact that the music industry is in crisis and buyers of such products are a very definite segment with their own characteristics in the industry. The Mexican sample is basically formed by students from Guadalajara, making it fairly homogeneous, while the American sample has been more dispersed and for that reason more heterogeneity.

Given that the U.S. is a country where many people live from different national origins, also it could even be perform a segmentation in which the Hispanic market is compared with other segments.

Structural limitations from Mexico must be considered, such as the technological infrastructure and economic development that may affect the development of the site performance. The lower the country's economic development is, slower some of the site´s features and higher the users perception of risk and

low security items (Jungles and Watson, 2004). This study represents a starting point that corresponds to a clear contribution in the field of electronic commerce. Future studies will incorporate cultures that do not have a Western origin, including emerging markets like China and India. Other countries where Internet is already well established and developed but they belong to cultures other than the Western world can be also incorporated, such as Korea and Japan. In addition, Brazil also will be contemplated since it is an emerging country and Latin America, but also has a historical background and current development different from its Latin American neighbors, and Argentina, the other big player in Latin America growing Internet market.

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