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E-service quality as antecedent to e-satisfaction

E-service quality

The moderating effect of culture

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Abstract

Purpose – The purpose of this paper is to analyse the influence of culture on the relationship between each of the dimensions of e-service quality and satisfaction with a web site involving purchase of a tourism service.

Design/methodology/approach – A questionnaire was administered to 300 international tourists (150 British and 150 Spanish) who had purchased a tourism product via the internet. The study employs a structural equation model to analyse the effect of cultural dimensions on the relationship between e-service quality and online tourist satisfaction. The original data were standardised in order to allow comparison.

Findings – The results show that the influence of the dimensions of service quality on the tourists' satisfaction with their online purchases is moderated by cultural dimensions, namely uncertainty avoidance and individualism/collectivism.

Research limitations/implications – In this study only two cultures are used to analyse the moderating effect of cultural dimensions on the relationship between quality and satisfaction and only two cultural dimensions are analysed.

Practical implications – The key practical implications of the work lie in illuminating the variations in tourist satisfaction when making an online purchase, and understanding the role played by cultural dimensions in interactions with web-based businesses.

Originality/value – This paper makes progress in the study of the dimensions of the e-service quality. Furthermore it is a cross-cultural study which pays attention to the moderating effect of the cultural dimensions on the relationship of each dimension of e-service quality with satisfaction with the web site.

Keywords Consumer behaviour, Tourism, Internet, Web sites, Customer satisfaction, E-service quality, E-satisfaction, National cultures, Tourist behaviour

Paper type Research paper

Introduction

The use of the internet has enhanced the way consumers relate to one another, how they search for information and how they purchase (Ranaweera *et al.*, 2008). Online consumer behaviour is well covered by the literature (Gong, 2009), particularly in the theories of planned behaviour and reasoned action, and the technology acceptance model; however few works analyse other related factors such as the influence of culture on consumer behaviour online (Cheung *et al.*, 2005). Prior studies reveal that if cultures



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and consumer behaviours differ, then marketing strategies should adapt accordingly to such differences (Cheung *et al.*, 2005).

The internet has opened up new avenues for national and international tourism services. Increasingly consumers are using the internet to obtain information, peruse commercial as well as non-commercial web sites, and search for and purchase products (Buhalis, 1998). Hence, in order to satisfy tourism demand and survive over the long term, one option is to use information technologies and the internet together with traditional channels.

The importance of the internet in purchasing tourism services has given rise to the need to research service quality in this medium, together with the influence of quality on satisfaction with tourism web sites. In the last 20 years much research has been conducted into traditional service quality, taking consumer satisfaction to be a key outcome of service quality and a determining factor in the long-term success of an organization (Parasuraman *et al.*, 1994). By contrast there are very few studies looking directly at how consumers value e-service quality, and its antecedents and consequences (Parasuraman *et al.*, 2005).

In this context it is important to consider the defining role of national culture in shaping human interaction in all its forms, including that of electronic commercialization. Despite different cultures and their impact on several aspects of human behaviour being well documented (Hofstede, 2001; Reisinger and Turner, 2002), only a few works look at tourist behaviour in light of cultural differences, and none of them in the new context of the internet.

In light of the previous, then, the aim of the present research is to analyse the influence of culture on the relationships between each of the dimensions of e-service quality and satisfaction with the web site in question, in the purchase of a tourism service.

This work thus aims to contribute to cross-cultural research. Such research is particularly relevant within the tourism industry, for several reasons. First the industry has undergone significant international growth in recent years. Second cultural characteristics are of vital importance to the actual appeal of a product (Pizam and Fleischer, 2005).

This study makes three specific contributions to current knowledge:

- (1) The relationship between quality dimensions and satisfaction in purchasing services online is analysed.
- (2) The moderating effect of culture in the influence of the dimensions of quality on satisfaction with the web site used to purchase a tourism service is proven.
- (3) A measurement for e-service quality in purchasing a tourism service is proposed.

Literature review and hypotheses

Web site service quality as antecedent of satisfaction

E-service is becoming an important determinant not only in relation to success or failure in e-commerce but also in terms of providing consumers with an online experience that surpasses mere information flow (Santos, 2003). E-service therefore represents added value above and beyond the exchange of information made possible by the internet.

This upsurge in the importance of e-service is reflected in the breadth of literature now devoted to e-service quality which, according to Santos (2003), has become a key factor for consumers.

In a review of the literature numerous definitions of service quality are to be found. However the most commonly used approach to conceptualising and measuring service quality is that developed by Parasuraman *et al.* (1988). According to the authors, service quality is: “an attitude related, but not equivalent, to satisfaction, and results from a comparison of expectations with perceptions of performance” (p. 5).

The evaluation of service quality differs depending on the context, hence scales need to be adapted accordingly (Rayport and Sviokla, 1996). With regard to e-service in particular, various researchers have attempted to model e-service quality (e.g. Zeithaml *et al.*, 2000, 2002; Wolfenbarger and Gilly, 2002; Yang *et al.*, 2003; Gounaris and Dimitriadis, 2003; Parasuraman *et al.*, 2005; Bauer *et al.*, 2006). Nonetheless scales developed by Zeithaml *et al.* (2002), E-SERVQUAL, and Parasuraman *et al.* (2005), E-S-QUAL, have the strongest empirical backing.

E-S-QUAL is made up of four dimensions relating to the following definitions: efficiency (defined as the ease and speed of access and use of the web site); fulfilment (the degree to which the web site fulfils what is promised to the customer); system availability (appropriate technical functioning of the web site); and privacy (the extent to which the web site is secure and protects consumer information).

However previous studies reveal that one of the internet’s most defining characteristics is its potential for offering the tourist vast quantities of information. This can lead the tourism provider to be tempted to include all possible information on the service they offer, including irrelevant details – a fact which complicates the decision-making process for the tourist. It is for this reason that a further dimension is used throughout the literature that complements those outlined by Parasuraman *et al.* (2005). This additional dimension refers to relevant information, understood as the quality of information content offered by a web site (Bergeron, 2001; Heim and Sinha, 2001).

In the present study, given the relevance of the research undertaken by Parasuraman *et al.* (2005), and the importance of including “relevance of information” in the study of the internet, five dimensions of e-service quality are measured.

In light of the literature review it is established that satisfaction with the electronic medium itself will be determined by the perceived quality of the e-service. Previous studies assert that ease of use is a tool for measuring online satisfaction of the end-user (Abdinnour-Helm *et al.*, 2005). As regards the availability dimension, although the previous literature confirms this dimension as a primary aspect of web site quality (Zeithaml *et al.*, 2002), it is not a construct that influences online satisfaction. With regard to the relationship between web site effectiveness and online satisfaction, some researchers assert that the attitude of service providers and the effectiveness of their interaction with customers positively influence satisfaction with the online purchase (Massad *et al.*, 2006). Privacy plays a significant role in consumers’ assessment of a web site and also influences perceptions of overall quality (Parasuraman *et al.*, 2005) and consequently user satisfaction. As regards “relevant information” the literature reveals that content based on relevant information is a major indicator of user satisfaction (Zeithaml *et al.*, 2002; Sindhuja and Dasticar, 2009).

The tourist's culture as a moderating variable

Culture, considered to be one of the most abstract elements affecting human behaviour, can be described and defined in many different ways. Hofstede's framework is considered to be the most reliable measure of national culture (Yeniyurt and Townsend, 2003). His work provides us with a strong empirical base and numerical assessments of the position of several countries, in relation to four dimensions of culture (Kolman *et al.*, 2003).

According to Hofstede (1980, 1991, 2001) there are four dimensions that differ according to each culture: power distance; masculinity/femininity; individualism/collectivism; and uncertainty avoidance. These cultural dimensions play an important role in determining how consumers expect services to be delivered (Tansik and Chase, 1988 in Tsaur *et al.*, 2005). Differences in the dimensions of national culture can help to explain the differences in perception and adoption of information technologies. Therefore it is highly probable that national culture – as well as other factors – affects the management of online trade (Junglas and Watson, 2004). In particular each of the dimensions of service quality in online purchasing of tourism services makes a different contribution to the tourist's satisfaction with their online purchase, depending on the culture they belong to.

Web site ease of use. Tourists from individualist cultures believe that success is the result of personal effort and that they do not require help from third parties to achieve their aims – hence greater ease of use implies greater speed and usefulness when navigating web sites. Therefore it is possible that in more collectivist cultures, ease of use does not carry the same importance as in individualist cultures. The most collectivist cultures even consider that undertaking an activity such as online shopping may be regarded as doing damage to their image (Van Slyke *et al.*, 2005). In such cultures the use of communication media that do not allow “face to face” interaction also makes it difficult for people to perceive the actions and behaviours that create social situations (Straub *et al.*, 1997). Specifically the review of the literature leads to the conclusion that there is a significant and positive relationship between ease of use and satisfaction for people in the USA, who are considered highly individualistic (Jun *et al.*, 2004), whereas in studies focused on Spanish people, whose culture is considered collectivist, that relationship is not significant (Aldás *et al.*, 2010; Hernández *et al.*, 2010). In light of all these considerations the following hypothesis is proposed:

- H1. The influence of ease of use on satisfaction with online purchasing is significant for tourists from an individualistic culture and is not significant for tourists from collectivist cultures.

Web site availability. The literature reveals that the availability of content and information on the web site is a primary aspect of web site quality (Barnes and Vidgen, 2001; Santos, 2003).

An innate characteristic of the internet is its very availability (Bauer *et al.*, 2002) which, despite constituting a dimension of quality, means that availability itself will not significantly affect tourist satisfaction, as it is virtually taken for granted as a constant. In other words availability of the internet would constitute a “security and hygiene” factor, as described by Herzberg *et al.* (1959) in the field of job satisfaction. Availability should be considered an existing element of the medium per se, as an essential requirement of operating an online business is that the web platform must be

available. To reiterate then, as availability is a constant in this medium, its presence does not influence satisfaction, although its absence can generate dissatisfaction (Cheung and Lee, 2005). Furthermore this characteristic is constant across different cultures and therefore is independent of cultural dimensions. Hence the following hypothesis is put forward:

- H2.* The influence of availability of the web site where tourism services are purchased on tourist satisfaction is not significant for different cultures.

Web site efficacy. Tourists from cultures with a high level of individualism demand high levels of service quality, as well as having greater expectations of security in the services delivered than their collectivist counterparts (Donthu and Yoo, 1998). These greater expectations of security can be seen in the demand for a higher level of credibility in the services delivered, which translates into a higher level of service efficacy. Furthermore individuals from cultures with a high level of individualism tend to be more competitive and place greater importance on the utilitarian values of their exchange with the service provider (Bhawuk and Brislin, 1992), focusing more on effectiveness than those cultures where collectivist values predominate (Dagwell *et al.*, 1983). Kvist and Klefsjö (2006) conclude that service reliability is a dimension of great importance for people from individualistic cultures. These findings indicate that an individualistic culture places greater emphasis on specific attributes of a product, while a collectivist culture values more highly the opinions formed by other people (Hofstede, 2001) and prefers information that is subjective and therefore largely imagined. Specifically the review of the literature leads to the conclusion that a significant and positive relationship exists between efficacy and satisfaction in the USA, a culture considered highly individualistic (Parasuraman *et al.*, 2005; Jun *et al.*, 2004) whereas in studies focused on the collectivist culture of Spain that relationship is not significant (Ruiz *et al.*, 2010). This argument leads us to propose the following hypothesis:

- H3.* The influence of efficacy on satisfaction with online purchasing is significant for tourists from individualistic cultures and is not significant for consumers from collectivist cultures.

Web site privacy. Purchasing over the internet brings with it a greater degree of uncertainty than shopping in traditional, physical establishments (Suki and Suki, 2007). Furthermore purchasing online represents a complete change in buying habits and lifestyle. Therefore it is to be expected that people from cultures with high uncertainty avoidance will be more inclined to avoid online purchasing than individuals from cultures with a low level of uncertainty avoidance (Lim *et al.*, 2004). This gives cause for believing that individuals from cultures with a high level of uncertainty avoidance and those from cultures with low uncertainty avoidance may differ also in terms of their perceptions, beliefs and use of e-commerce (Kim and Peterson, 2003). For example to mitigate uncertainty, individuals with high uncertainty avoidance may require more security in terms of privacy, in order to increase their confidence levels when undertaking a purchase online, compared to those from cultures with low uncertainty avoidance. Specifically the review of the literature leads to the conclusion that a significant and positive relationship exists between privacy and satisfaction for Spanish people, who are considered to have high uncertainty avoidance (Barrera, 2010; Castañeda *et al.*, 2007), whereas in studies focused on the

USA, which is considered a low uncertainty avoidance culture, that relationship is not significant (Jun *et al.*, 2004). However few studies focus on privacy in electronic commerce, in light of cultural differences. Given all of the previous the following hypothesis is proposed:

- H4. The influence of privacy on satisfaction with the online purchase is significant for tourists from cultures with a high level of uncertainty avoidance, and is not significant for tourists from cultures with a low level of uncertainty avoidance.

Relevance of information on the web sites. The relevance of information, or content quality, of a web site is considered – as is ease of use – a key indicator of success in information technology systems (Mahmood *et al.*, 2000). From a user perspective “relevant information” refers not only to the type of information offered by the web site but also its quality and accessibility (Lin, 2010). Relevant information content is an important indicator of user satisfaction (Zeithaml *et al.*, 2002; Sindhuja and Dastidar, 2009).

In the tourism field relevant information has been used to evaluate tourism web sites, and has been shown to be a key factor in encouraging tourists to visit such sites (Cai *et al.*, 2004; Park *et al.*, 2007).

Similarly the literature reveals that the content of relevant information offered by a web site represents a competitive advantage in terms of user expectations (Lin, 2010).

Given the previous and bearing in mind the importance placed by the literature on the influence of web site content quality on tourist/user satisfaction, it seems unlikely that the relationship between relevant information and satisfaction is moderated by culture. That is to say it appears unfeasible that there would be differences in the degree of satisfaction that relevant information generates among users from different cultures, solely based on their culture of origin. Thus the fifth hypothesis of this work is that:

- H5. The influence of the relevant information on satisfaction with the online purchase is not moderated by national culture.

Methodology

Sample design and data collection

A sample of tourists was chosen from two nationalities, namely British and Spanish. This choice was based on two key factors. First Spain and the United Kingdom demonstrate major differences in two of the four cultural dimensions – uncertainty avoidance (Spanish: 86; British: 35) and individualism/collectivism (Spanish: 51; British: 89) (Hofstede, 1980, 2001). The literature shows clearly that those cultural dimensions that have the greatest influence on the relationship between the dimensions of quality and satisfaction are individualism/collectivism and uncertainty avoidance (Hofstede, 2001). According to the literature review undertaken, British societies demonstrate a greater tendency to believe that people as individuals are more important than the group, that success is a result of personal effort, and that one’s private life is separate from work life. These beliefs derive from a high degree of individualism, accompanied by a low level of uncertainty avoidance. Meanwhile Spanish society is characterised by a high degree of collectivism, with people tending to belong to some group or other. As regards uncertainty avoidance Spanish society is

characterised by a high level of fear of the future. This gives rise to a tendency to create rules that can organise all activities, and to positively valuing the existence of experts who can offer advice, all with the aim of minimising risk. Second data shows that internet use among the Spanish and the British is quite similar, at 70.6 and 79.8 percent of the population respectively (Internet World Stats, 2009).

In order to test the hypotheses, a study based on a structured questionnaire was carried out. Telephone interviews were undertaken and tourists had to fulfil three criteria in order to be included in the sample: that they had undertaken a holiday trip in the 12 months preceding the interview; that they had purchased their hotel accommodation via the internet; and that their nationality, be it Spanish or British, matched their country of residence.

The initial stage consisted of two pre-test studies. The first pre-test study was undertaken among students of the Economic and Business Sciences Faculty of the University of Granada, to test understanding of the questions and to refine the questionnaire accordingly. The second pre-test was undertaken among a representative sample of the target population (30 Spanish and 30 British), with a dual purpose: to analyse how the scales under study worked, and to test the current applicability and empirical validity of Hofstede's cultural dimensions in the sphere of tourism. In testing the differences in cultural dimensions, the items and formula used by Hofstede himself were employed (<http://stuwww.uvt.nl/~csmeets/VSMChoice.html>). On the basis of the findings from both pre-tests, the final questionnaire was drawn up. The questionnaire was written in both English and Spanish.

The sample was made up of 300 tourists, 150 of who were Spanish, the rest being British. The field work was undertaken between December 2008 and February 2009. Regarding the composition of the sample, 51.4 percent of those surveyed were men, and 48.6 percent were women. The majority of the tourists were over 35 years of age. Some 90 percent of all those surveyed were from households of two or more people. Approximately 59 percent had completed university-level study, and 74 percent had paid work. Table I shows the different geographic zones.

Standardization of the original data

Undertaking cross-cultural research involves dealing with people from different cultures, and as a result it is necessary to take into account whether the scores obtained are comparable (Van de Vijver and Leung, 2000).

Hofstede (1980) was among the first to defend the use of standardization as a means of adjusting original scores from cross-cultural research in order to correct any error in the responses. The principal aim of standardization is a reduction or elimination of unwanted cross-cultural differences that are not due to variables of interest, but rather response sets and methodological artefacts (Van de Vijver and Leung, 2000). Other studies, such as that of Fischer (2004), include a review of studies published by the

| | Spain | | The UK |
|-------------|--|----|--|
| Large city | Madrid, Barcelona, Sevilla | 80 | London, Manchester, Birmingham |
| Medium city | A Coruña, Alicante, Córdoba, Murcia | 52 | Liverpool, Bristol, Cardiff, Plymouth |
| Small city | Huesca, Toledo, Cáceres, Logroño, Sta., Cruz de Tenerife | 27 | Portsmouth, Brighton, Ipswich, Norwich, Exeter |

Table I.
Geographic zone

Journal of Cross-Cultural Psychology between 1970 and 2002 that use standardization procedures. The review affirms that there was constant growth in the use of standardization procedures from 1985 onwards, and highlights that the main reason given for standardization was the elimination or reduction of deviation in responses.

Therefore, considering the characteristics of this study and its cross-cultural nature, it would seem necessary to use standardization in the initial data, with a view to avoiding deviation in the responses. The “within group standardization” method was used – adjustment across variables – such that each variable has the same mean and the same variance. This method assumes that the scoring in terms of overall percentage and/or the variance is comparable among variables, so that skewing due to the styles of response among and within cultures can be eliminated. The approach is based on the assumption that responses from within a particular culture may not be homogeneous either, given the possible influence of other socio-demographic characteristics. Using this procedure makes it possible to undertake a factorial analysis of the variables from the data overall, with the certainty that the resulting dimensions are “pure” representations of the factors, unaffected by the positioning effect of the culture, given that the average scoring of each culture for each variable is zero. Of course, even so the effect of the culture on the model of variables is reflected in the data overall.

Measurement scales

Satisfaction. To measure satisfaction with a web site, a semantic differential scale was employed – as used by Szymansky and Hise (2000) in their study on e-satisfaction.

E-service quality. To measure e-service quality the e-SQ scale developed by Parasuraman *et al.* (2005) was adapted for the dimensions relating to ease of use, availability, efficacy and privacy. The relevant information dimension was adapted from Bergeron (2001) and Heim and Sinha (2001).

Findings

Before testing the proposed hypotheses, an exploratory factor analysis was carried out in order to determine the number of dimensions that make up service quality for a web site. The five dimensions that were identified via the literature review – ease of use, availability, efficacy, privacy and relevant information – were obtained, and the measurement scale built around them, which explained 70.33 percent of variance (see Table II).

To measure e-service quality a multidimensional measure was used, whose goodness of fit indicators can be compared with those obtained for a one-dimensional measure of quality. Table III shows the goodness of fit indicators for the multidimensional quality model, via a second-order CFA, and those for a one-dimensional measure of quality.

RMSEA: Root Mean Square Error of Approximation; NCP: Noncentrality Parameter; SNCP: Scaled Noncentrality Parameter; RMSR: Root Mean Square Residual; ECVI: Expected Cross-Validation Index; PNFI; Parsimonious Normed Fit Index; AIC: Akaike Information Criterion.

It can be observed from these indicators that the fit of the multidimensional model is better. Furthermore all the dimensions show significant loads on second order factor e-service quality.

| E-service quality* | | $\alpha = 0.913$ | Variance explained (%) |
|--------------------------|--|------------------|------------------------|
| Ease of use | It is easy to get anywhere on the site | 0.638 | 16.19 |
| | Information on this site is well organised | 0.797 | |
| | This site is simple to use | 0.798 | |
| | This site is well organised | 0.816 | |
| Availability | This site is always available | 0.775 | 14.70 |
| | This site launches and runs right away | 0.755 | |
| | This site does not crash | 0.814 | |
| | Pages on this site do not freeze after I enter my order information | 0.724 | |
| Efficacy | This site make items available for delivery within a suitable time frame | 0.534 | 14.66 |
| | It quickly delivers what I order | 0.702 | |
| | The confirmation sent to me by the web site corresponds to the reservation | 0.795 | |
| | It is truthful about its offers | 0.714 | |
| Privacy | It protects information about my shopping behaviour | 0.838 | 13.03 |
| | It does not share my personal information with other agencies | 0.772 | |
| | This agency protects information about my credit card | 0.8 | |
| Relevant information | It has a great deal of information | 0.740 | 11.76 |
| | It has high quality information | 0.795 | |
| | The information offered by the web site is complete | 0.824 | |
| | The information offered by the web site is accurate | 0.811 | |
| Total variance explained | | | 70.33 |

Note: *KMO =0.892

E-service quality

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Table II.
Dimensions of service quality

Based on these results the next step was to estimate the model shown in Figure 1. To achieve this, first of all a check was undertaken to establish whether the variables included in the model followed a multivariate normal distribution. The findings showed that the joint test for skewness and kurtosis was significant, which led to the decision to use robust maximum likelihood as the methodology for estimating.

The overall fit of the model was within the limits recommended by the literature (Hair *et al.*, 1999), although the Satorra-Bentler chi squared statistic was significant. The RMSEA value indicates a good fit, as the literature recommends that the value of this indicator should be below 0.08. The NFI, NNFI, CFI, IFI and RFI values are above 0.90, again confirming a good fit (see Table IV).

With regard to evaluating the measurement model, it was confirmed that the coefficients, from each construct to the corresponding indicators, had values greater than 0.50, being statistically significant in every case. The standardised CFA solution shows that all the items contribute significantly to their corresponding factors,

| | CFA | 2nd order CFA |
|--|---------|---------------|
| Chi ² (S-B) | 1466.64 | 503.16 |
| d.f. | 342 | 337 |
| RMSEA | 0.15 | 0.05 |
| NCP | 1124.64 | 166.16 |
| SNCP | 3.74 | 0.55 |
| RMSR | 0.14 | 0.11 |
| ECVI | 5.18 | 1.98 |
| PNFI | 0.69 | 0.92 |
| AIC | 1542.64 | 589.16 |
| Critical N | 83.45 | 238.09 |
| Relationships 2nd order CFA | | |
| E-quality = 0.73* x ease of use | | |
| E-quality = 0.64* x availability | | |
| E-quality = 0.89* x efficacy | | |
| E-quality = 0.58* x privacy | | |
| E-quality = 0.75* x relevant information | | |

Table III.
Comparison between
CFA and 2nd order CFA

Note: *p*-value < 0.05

implying adequate convergent validity. Similarly the composite reliability is satisfactory for each variable, with values above 0.7. In terms of variance extracted all the scales offer a value above the recommended threshold of 0.5 (see Table V).

To evaluate discriminant validity the correlation coefficients of the latent constructs for the different analytical contexts were calculated, together with their confidence interval, and compared to the variance extracted (see Table VI).

Discriminant validity is demonstrated as the square root of the variance extracted for each construct is greater than the correlation of that construct with any other, and that correlation does not contain within its confidence interval the value of 1 (Fornell and Larcker, 1981).

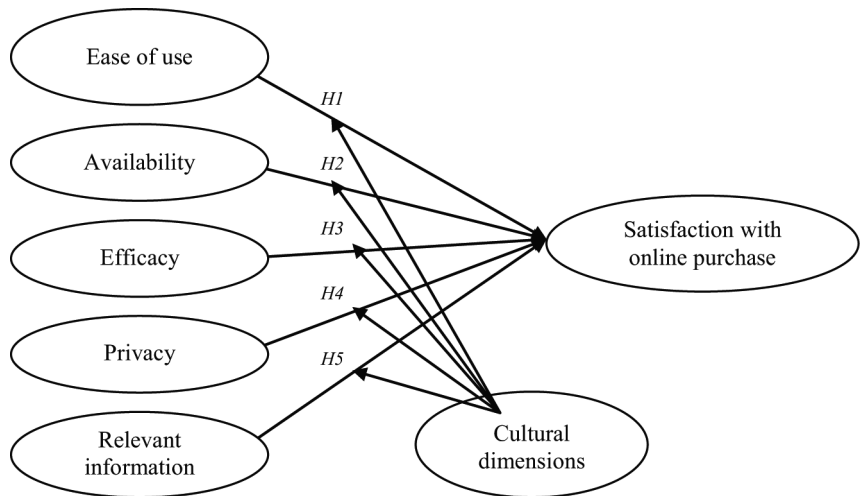


Figure 1.
Proposed model and
hypotheses

| | |
|-----------------------------|--------|
| Satorra-Bentler Chi-squared | 584.25 |
| Degrees of freedom | 400 |
| <i>p</i> -value | 0.00 |
| RMSEA | 0.056 |
| NFI | 0.94 |
| NNFI | 0.98 |
| CFI | 0.98 |
| IFI | 0.98 |
| RFI | 0.94 |
| Critical N | 240.08 |

Notes: NFI: Normed Fit Index; NNFI: Non-normed Fit Index; CFI: Comparative Fit Index; IFI: Incremental Fit Index; RFI: Relative Fit Index

Table IV.
Global indices

Once the measurement model was confirmed as being appropriate, and with a view to testing for the existence of the moderating effect of culture on the relationship between the satisfaction and web site quality dimensions, a multi-group structural equation model was constructed. In the analysis each group represented the national culture of the tourists under study. The most obvious means of evaluating the structural model is to analyse the relationships that exist between the latent variables. Table VII shows the standardised coefficients and the corresponding *t*-values.

In the case of Spanish tourists the dimensions of e-service quality that significantly influence their satisfaction on purchasing a tourism product over the internet are privacy and relevant information on the web site. For tourists from the United Kingdom the dimensions of efficacy and relevant information significantly influence satisfaction.

| Dimension | Item | α -Cronbach | CR | AVE | R^2 | Stand. coeff. (<i>t</i> value) |
|--------------------------------|-------|--------------------|------|------|-------|---------------------------------|
| Ease of use | Fac1 | 0.857 | 0.86 | 0.61 | 0.44 | 0.67 (--) |
| | Fac2 | | | | | 0.77 0.88 (11.95) |
| | Fac3 | | | | | 0.52 0.72 (11.58) |
| | Fac4 | | | | | 0.71 0.84 (11.89) |
| Availability | Disp1 | 0.826 | 0.83 | 0.54 | 0.57 | 0.75 (--) |
| | Disp2 | | | | | 0.65 0.81 (13.00) |
| | Disp3 | | | | | 0.52 0.72 (11.77) |
| | Disp4 | | | | | 0.44 0.66 (11.13) |
| Efficacy | Efic1 | 0.812 | 0.81 | 0.52 | 0.48 | 0.70 (--) |
| | Efic2 | | | | | 0.53 0.73 (13.87) |
| | Efic3 | | | | | 0.55 0.74 (10.70) |
| | Efic4 | | | | | 0.52 0.72 (11.29) |
| Privacy | Priv1 | 0.815 | 0.82 | 0.61 | 0.77 | 0.88 (--) |
| | Priv2 | | | | | 0.47 0.69 (11.05) |
| | Priv3 | | | | | 0.58 0.76 (12.51) |
| Relevant information | Info1 | 0.886 | 0.89 | 0.66 | 0.52 | 0.72 (--) |
| | Info2 | | | | | 0.61 0.78 (14.20) |
| | Info3 | | | | | 0.78 0.88 (14.85) |
| | Info4 | | | | | 0.75 0.87 (13.43) |
| Satisfaction with the web site | Sat1 | 0.872 | 0.87 | 0.77 | 0.77 | 0.88 (--) |
| | Sat2 | | | | | 0.77 0.88 (17.33) |

Table V.
Composite reliability and variance extracted

Discussion of findings

An empirical cross-cultural comparison was made between Spain and the United Kingdom (low uncertainty avoidance, and high individualism), relative to the dimensions of e-service quality and tourist satisfaction with a web site when purchasing a tourism service.

The results show that ease of use does not influence satisfaction online, either for Spanish or British tourists, and thus do not provide empirical support for *H1*. This lack of influence may be explained by two related factors. First several studies have identified that for more expert internet users, their opinions on the web are based not so much on ease of use as on other elements such as perceived usefulness or confidence in a web site (Gefen *et al.*, 2003; Castañeda *et al.*, 2007). Second online purchasing is a behaviour mainly related to extrinsic motivations (Davis *et al.* 1992), which means that some of the facets that are closer to intrinsic motivations, such as ease of use (Gefen and Straub, 2003), may fall in value in terms of their influence on satisfaction for the internet user.

With regard to the degree of availability of the web sites, Herzberg's approach (1959) is confirmed. Therefore there is found to be empirical support for *H2*, that is to say, the degree of availability of a web site does not significantly influence satisfaction among either British or Spanish tourists, given that it is a constant of the medium in question.

Regarding the influence of efficacy on satisfaction, the findings provide empirical support for *H3*. These results corroborate those obtained in the study undertaken by Kvist and Klefsjö (2006), which concludes that reliability of the service (understood as the degree of commitment and trustworthiness) is a dimension of great importance for the British (individualistic tourists).

H4 also has empirical support as the findings from this study indicate that the privacy dimension significantly influences satisfaction only among tourists from

Table VI.
Correlations between latent constructs and their confidence interval

| | Ease of use | Availability | Efficacy | Privacy | Relevant info. | Satisfaction |
|----------------|--------------|--------------|--------------|--------------|----------------|--------------|
| Ease of use | 0.78 | 0.23 | 0.29 | 0.26 | 0.28 | 0.38 |
| Availability | (0.15; 0.31) | 0.73 | 0.33 | 0.27 | 0.22 | 0.33 |
| Efficacy | (0.21; 0.38) | (0.23; 0.42) | 0.72 | 0.30 | 0.34 | 0.41 |
| Privacy | (0.17; 0.35) | (0.17; 0.36) | (0.20; 0.40) | 0.78 | 0.29 | 0.41 |
| Relevant info. | (0.20; 0.37) | (0.14; 0.30) | (0.25; 0.43) | (0.19; 0.38) | 0.81 | 0.45 |
| Satisfaction | (0.28; 0.38) | (0.22; 0.43) | (0.31; 0.52) | (0.29; 0.52) | (0.34; 0.56) | 0.87 |

Table VII.
The effect of web site quality on satisfaction in Spanish and British cultures

| | Spain | | The UK | |
|------------------------------|---------------------------|-----------------|---------------------------|-----------------|
| | Standardised coefficients | <i>t</i> -value | Standardised coefficients | <i>t</i> -value |
| Ease of use → Satisfaction | 0.27 | 1.90 | 0.16 | 1.90 |
| Availability → Satisfaction | 0.10 | 0.78 | 0.07 | 0.90 |
| Efficacy → Satisfaction | 0.06 | 0.37 | 0.27 | 2.17 |
| Privacy → Satisfaction | 0.18 | 1.97 | 0.14 | 1.95 |
| Relevant info → Satisfaction | 0.42 | 3.02 | 0.32 | 3.46 |

cultures with a high level of uncertainty avoidance (the Spanish). Furthermore the finding is in line with previous studies that establish that individuals from cultures with a high level of uncertainty avoidance tend not to trust online service providers for fear of loss of privacy (Mooji, 1998), however privacy does not influence online satisfaction among tourists from cultures with low uncertainty avoidance (Lee *et al.*, 2009).

Finally for both cultures the relationship between relevant information and satisfaction is significant, and hence there is empirical support for *H5*. It seems reasonable to think that any individual, regardless of their culture, will require a web site to offer relevant information that matches their information needs. This would justify the belief that culture does not moderate the relationship between relevant information on the web site and online satisfaction. In this sense previous studies show that, when the effect of relevant information on satisfaction has been tested, disregarding the cultural context, the effect has always been greater (Taiwan: Lin, 2010; Spain: Castañeda, 2005; Greece: Gounaris and Dimitriadis, 2005; USA and Korea: Kim and Peterson, 2003; consumer survey panel [National Family Opinion]: Szymansky and Hise, 2000).

Conclusions and implications

The growing trend towards globalization of commercial activity (Maheswaran and Shavitt, 2000) and the rising number of consumers using the internet to obtain information and purchase tourism products have prompted the need to understand the variations in international tourist behaviour and furthermore to understand the role played by national culture in interactions with web-based businesses.

The aim of this study is to understand how culture moderates the relationship between each of the dimensions of e-service quality and the tourist's satisfaction with their online experience. Based on the existing literature a model has been proposed that represents the theoretical relationships between the dimensions of e-service quality and satisfaction, which have been cross-checked by means of a sample made up of tourists of two nationalities, Spanish and British.

The national culture of tourists influences the relationship between service quality and tourists' satisfaction with their online purchasing of a tourism service. Specifically it is affirmed that, in the case of Spanish tourists, privacy and relevant information on the web site are the dimensions of e-service quality that significantly influence their satisfaction, while in the case of British tourists, efficacy and relevant information are the two dimensions of quality that influence their satisfaction.

The contributions and academic implications offered by this work lie in the fact that, although there are numerous authors that have included culture as a key variable in their research (Weiermair, 2000), few studies have attempted to analyse the moderating effect of national culture in e-service quality and e-satisfaction, and even fewer focus on the tourism sector.

In this sense the present work makes several contributions:

- (1) the adaptation and validation of a scale of e-service quality;
- (2) the study of the influence of each one of the dimensions of e-service quality on the satisfaction of tourists; and
- (3) the moderating effect of culture on the relationship between e-service quality and satisfaction for tourists from the UK and Spain.

From a more management-related perspective, knowledge of the factors that influence satisfaction among international tourists in their online purchasing of tourism products can help providers of tourism services to understand what actions to take in order to make their product appeal to tourists from different nationalities. At the same time it offers an important guide for developing an electronic commerce web site that can improve service to consumers from different cultures, as well as enabling the organization to undertake electronic commerce such that their competitive position improves. The key implication is that there is a need to adapt not only the language used in web sites but also other aspects such as structure, with a view to making more prominent those aspects likely to generate customer satisfaction. Hence, for both the Spanish and the British cultures, web sites should display only the information most relevant to tourists, since the level of relevant information or quality of content provided by a web site will be a determining factor for clients using the services on offer in terms of their satisfaction with that site. However with regard to those web sites aimed at Spanish tourists it is important to provide easy access to the privacy policy and to the mechanisms and hallmarks that guarantee privacy. Meanwhile for British tourists special attention should be paid to efficacy – that is to say, to the fulfilment of promises and/or tasks related to purchasing the service. In both cases tourists expect availability to be a standard feature of any web site.

Limitations of the work and future lines of research

Given the international nature of the sample, a cautious approach should be taken with regard to generalising on the basis of the findings. First in this study just two cultures have been used to analyse the moderating effect of cultural dimensions on the relationship between e-quality and satisfaction. Although the literature clearly shows that to undertake a cross-cultural analysis, comparing two cultures is quite sufficient, it would be interesting to repeat the analysis with a greater number of different cultures. Second while this study has centred on analysing the moderating effect of uncertainty avoidance and individualism/collectivism on the relationship between e-service quality and satisfaction, in future research it would be of particular interest to analyse the moderating effect of Hofstede's four dimensions within a general model of behavioural intentions among tourists from the two cultures.

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