Perceived influence on behavior of user-generated content on social network sites: An empirical application in the hotel sector

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\textbf{Abstract} This study develops an integrative model to explain the influence on behavior, as perceived by users, of the content posted by other users on social network sites. In particular, empirical research was carried out in the hotel sector, where social network sites are widely used by individuals in the pre-purchase stage (i.e. information search and choice). The results, obtained from a sample of 776 social network users in Spain and Portugal, indicated that the influence on behavior, as perceived by the individuals, of the content about hotels published by other users on the main social network site used by those individuals, is determined by the information value, the source credibility, and the interaction between both variables, but not by the similarity between the user and the generators of content on the social network sites.

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Introduction

Consumer psychology of tourism and hospitality is a field of knowledge that is receiving growing attention from psychologists, social scientists, and marketing scholars, among others (Crouch, Perdue, Timmermans, & Uysal, 2004; Uysal, Perdue, & Sirgy, 2012). In particular, a common way of approximating consumer psychology is to consider the three stages of the purchase process: pre-purchase, purchase, and post-purchase (Arnoıld, Price, & Zinckhan, 2002). The present study is focused on the first stage, where the information search and choice involve an important mental and physical effort for individuals. In line with Mullen and Johnson (1990), in this stage intentions and behaviors are influenced by different internal mechanisms of individuals such as beliefs and emotions, which are the result of the stimulus situation and the socio-cultural context. With this in mind, this paper aims to take a further step in research on consumer psychology of tourism and hospitality by investigating the influence of user-generated content in social media on user behavior in a new context characterized by the generalized use of the Internet (MacKay & Vogt, 2012).

In the industries of tourism and hospitality, the Internet has become an essential tool for users in their decision-making processes (Casaló, Flavián, & Guinalíu, 2011; Law, Leung, & Buhalıs, 2009), allowing them to search for information on products and services, compare and evaluate the alternatives, and finally make reservations online. Thus, the Internet promotes consumer centricity (Niininen, Buhalıs, & March, 2007), allowing individuals to select and customize their products and, therefore, their experiences. More recently, the emergence of Web 2.0 has revolutionized the use of the Internet as a communication channel. The term “Web 2.0” includes a wide range of electronic applications, also called “social media” (e.g. social network sites, recommendation websites, blogs, and photo and video sharing platforms), that facilitate interactions among individuals as well as among users and companies.

The impact of social media has been especially important in the industries of tourism and hospitality (Leung, Law, van Hoof, & Buhalıs, 2013; Parra-López, Bulchand-Gidumal, Gutiérrez-Taño, & Diaz-Armas, 2011; Xiang & Gretzel, 2010), given the social dimension of behavior in this context (Law et al., 2009). More concretely, there is a tendency among individuals to share their experiences with other people through publishing their recommendations, opinions, photos, or videos (so-called “user-generated content”) about a tourist destination or a tourism service on the Internet (Buhalıs & Law, 2008). In particular, the present study focuses on the social network sites, the main social media used by the companies in the context under investigation (i.e. the hotel sector). According to a report by Fundetec (2013), in Spain the social network sites are the main social media used by hotels to manage, among other aspects, the brand image and customer relationships. In particular, the use of social network sites has significantly increased over the past year, varying from 24.4% in 2012 to 48.0% in 2013 in the case of small and medium-sized enterprises, and from 44.1% to 63.0% in the case of large firms.

Social network sites are web-based services that, through a public or semi-public profile within a bounded system (Boyd & Ellison, 2008), allow individuals to publish comments and multimedia content, thereby making them available to their contacts. In relation to the penetration of the social network sites in society, a report published by Pew Research Center (2012) indicates that the world ranking is led by the United Kingdom (52.0% of the population uses social network sites), while Spain is the fifth ranking country (49.0% of the population). A paradigmatic example of a social network site is Facebook, the platform most used by individuals to post content (e.g. photos, videos, or comments) about their life experiences and, in particular, their encounters with products and services. For example, in the case of Spain, Facebook had 17 million users in 2012, while Tuenti and LinkedIn only had 9.7 and 2.7 million, respectively (Comscore, 2013). For its part, in the context of tourism, the study developed by Redshift Research (2013) emphasizes that 87.0% of international travelers less than 34 years old use Facebook to search for information about their trips.

From a marketing point of view, it is necessary to examine the impact of social network sites since these applications generate a particular form of electronic word-of-mouth (WOM) communication, so-called e-WOM, which influences consumer behavior. More concretely, the content published by some users on the social network sites may affect other individuals’ attitudes and intentions in a consumption context (Allsop, Basset, & Hoskins, 2007; Litvin, Goldsmith, & Pan, 2008; Steffes & Burgee, 2009). However, in line with Leung et al. (2013), although the use of social network sites is generalized among users and firms in tourism, more research is needed so that scholars and practitioners better understand how to manage these media. With this in mind, the general objective of this study is to examine the factors determining the influence on behavior, as perceived by individuals, of the content about hotels published by other users on the main social network site used by those individuals. In this sense, the main contribution of this study is the development and empirically testing, in the specific context
of hospitality, of an integrative model that explains the perceived influence of social network sites on user behavior (information search and choice) by incorporating the factors most frequently examined and validated in past research on communication and consumer behavior.

In particular, the present study empirically validates the role of the three factors that are generally postulated to determine the influence on consumer behavior of content posted on social network sites (Brown, Broderick, & Lee, 2007): (1) the user’s perceptions about the value of the content provided by users on social network sites; (2) the credibility attributed to these sources; and (3) the degree of similarity between the user and the content generators. In other words, a direct relationship between each of these factors and the perceived influence on behavior is established in this study. Additionally, on the basis of the theoretical framework developed by Pomper (2004), we analyze the interaction effects between these factors, a question that has been scarcely studied in previous literature. In conclusion, our findings represents an important step in research on the consumer psychology of tourism and hospitality by identifying the psychological mechanisms that are at the basis of the influence on behavior of user-generated content on social network sites.

Background

WOM is defined as a consumer-dominated channel of marketing communication in which the sender is independent of the market (Brown et al., 2007). WOM allows the production of and/or access to consumption-related information that holds greater “informational value” than formal advertising messages provided by companies and, therefore, has a strong influence on individual decision-making processes (Brown et al., 2007). Therefore, consumers perceive WOM to be more reliable, credible, and trustworthy than firm-initiated communication (Allsup et al., 2007; Arndt, 1967; Silverman, 1997). Past research suggests that WOM is one of the more influential forms of communication. In particular, according to the traditional communications theory, WOM exerts a powerful influence on information search, evaluations, and the subsequent decisions of consumers (Allsup et al., 2007; Brown & Reingen, 1987; Cox, 1963; Money, Gilly, & Graham, 1998; Silverman, 2001).

Over the last decade, technology has increased the relevance of WOM in the form of e-WOM. e-WOM refers to any positive or negative statement made by potential, actual, or former customers about a product or company that is made available to a multitude of people and organizations via the Internet (Cheung, Lee, & Rabjohn, 2008; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). Similar to WOM, past research has shown that e-WOM may have higher credibility, empathetic value, and relevance to customers than marketer-created sources of information on the web (Bickart & Schindler, 2001). This new computer-mediated form of interpersonal influence requires new approaches to management, thus requiring additional research efforts (Brown et al., 2007). Specifically, social network sites have a huge potential as e-WOM sources, as they allow individuals to post content about products and services (especially on corporate pages or on independent specialized pages) that can be read by any user of the social network site around the world. However, despite the consensus among academics and practitioners about the influence of social network sites on consumer behavior, limited empirical evidence is available in this field and more research is still required (Cheung et al., 2008; Leung et al., 2013).

As already stated, our research focuses on the determinants of the influence of e-WOM from social network sites on behavior, considering both the direct effect of information value, source credibility, and similarity, as well as the interaction effects between the explanatory variables. In accordance with a well-established line of literature on WOM (Bansal & Voyer, 2000; Brown & Reingen, 1987; Steffes & Burgee, 2009; Wangenheim & Bayon, 2004), the dependent variable in our research is the influence of e-WOM from social network sites, as perceived by individuals themselves, on their behavior (information search and choice). More concretely, since there is a widespread use of social networks in the decision-making processes of users, in this study we consider it more interesting to analyze the perceived influence as the dependent variable than the future intention.

The following sections focus on the relevant literature on the conceptualization of information value, source credibility, and similarity, as well as their effects on the perceived influence of e-WOM from social network sites.

Information value

Past research on communication in general has identified user perceptions of the value (Brown et al., 2007; Gruen, Osmunbekov, & Czaplowski, 2006; Mathwick, Wiertz, & Ruyter, 2008; Steffes & Burgee, 2009) or quality (Cheung et al., 2008) of the information available through social media as a determinant of the influence exerted by social media on behavior. Therefore, with a user-centric perspective, information value is conceived as its utility in the decision-making process (Steffes & Burgee, 2009), and is related to the relevance, timeliness, accuracy, and comprehensiveness of the information available to the consumer (Cheung et al., 2008). According to this approach, individuals will be especially influenced by user-generated content published on social network sites if they consider the information to be useful and relevant to their decisions. For example, Camarero, Rodriguez, and San José (2011) found that users’ perceptions about the value of the information available on a social network site positively influenced their commitment to the network/site. Specifically in tourism, Huang, Chou, and Lin (2010) confirmed that the influence of social media on behavior is determined by the value of the content published in these media.

In this sense, users that face user-generated content about hotels would be more influenced by this information if they consider that it is valuable for their choice of a hotel, in terms of its detail, relevancy, and usefulness. Specifically, in the case of social network sites, users may be more influenced by user-generated content if they consider it independent and based on direct experience. However, users would be less influenced by user-generated content on social network sites if they perceived it as less valuable due to it being imprecise, out-of-date, or even
excessively positive or negative. Therefore, we propose the first research hypothesis:

H1. Higher perceived value of user-generated content on social network sites leads to higher perceived influence of this content on user behavior.

**Source credibility**

Several authors have observed that the positive effect of WOM is related to the credibility (expertise and trustworthiness) attributed to other users’ opinions (in contrast to commercial communication) because they are not filtered by company interests (Allsop et al., 2007). This approach is supported by different theories in the field of communication and persuasion that have highlighted the relevance of source credibility on behavior – see Pornpitakpan (2004) for an extensive review of the literature on this topic. For example, according to Attribution Theory (Eagly & Chaiken, 1993), when consumers are presented with a message they will make an effort to assess whether the message provides an accurate representation of the product or company. If the message lacks in credibility, it will be discounted and will not be very persuasive (Buda, 2003; Kelly, 1967, 1972).

Behavioral influences are more significant when the credibility attributed to the source is high (e.g. Bansal & Voyer, 2000; Dholakia & Sternthal, 1977; Pornpitakpan, 2004). In this sense, in a study by Petty and Cacioppo (1986), source credibility is defined as the extent to which an information source is perceived to be believable, competent, and trustworthy by information recipients. Accordingly, the dimensions of source credibility have been commonly identified to consist of expertise and trustworthiness (Pornpitakpan, 2004). As stated before, consumers perceive WOM to be more reliable, credible, and trustworthy than firm-initiated communications (Allsop et al., 2007; Arndt, 1967; Silverman, 1997) because it comes from other consumers, which are perceived as an unbiased source of information about a product or company.

In the context of social network sites, Cheung et al. (2008) and Jin, Cheung, Lee, and Chen (2009) established that the effects of e-WOM on behavior are determined by the credibility attributed by the user to the source of information (i.e. other users of a specific social network). Therefore, the influence of social networks on consumer behavior will depend on the degree to which the user trusts the content posted in this media or considers it credible. In tourism, López and Sicilia (2011) confirmed a positive effect of social network credibility on the influence perceived by users. Similarly, Ayeh, Au, and Law (2013) obtained empirical evidence that supports the contention that perceptions of the credibility of user-generated content sources influence consumer behavior during the travel planning process. Although there is no empirical evidence in the specific field of hospitality, it is reasonable to think that user-generated content about a hotel on social network sites will have a strong influence on users’ behavior if they consider it credible. In contrast, if individuals perceive that what people post on social network sites is untrue, unreliable, or biased, they will not consider this information in their choice of a hotel. This leads to the second hypothesis:

H2. Higher perceived credibility of user-generated content on social network sites leads to higher perceived influence of this content on user behavior.

**Similarity**

The influence of WOM on consumer behavior has also been associated with users’ perceptions of their similarity to the source (Gilly, Graham, Wolfinger, and Yale, 1998; Wangenheim & Bayon, 2004). Brown and Reingen (1987) define similarity or homophily as the degree to which individuals are similar to sources in terms of certain attributes. In particular, similarity between individuals predisposes them toward greater levels of interpersonal attraction, trust, and understanding than would be expected among dissimilar individuals (Ruef, Aldrich, and Carter, 2003). Therefore, this variable affects the information that consumers receive, the attitudes they form, and the interactions they experience (McPherson & Smith-Lovin, 1987).

This influence of similarity on consumer decision-making processes can be justified by several theories, such as the Theory of Social Comparison (Festinger, 1954), the Source-Attractiveness Model (Kelman, 1961), and the ‘Match Up’ Hypothesis (Kamins, 1990). Past advertising research suggests that communications from a similar referent are perceived as being more influential than messages coming from dissimilar ones (e.g. Feick & Higie, 1992). Additionally, several authors have confirmed that the effect of WOM is greater when the information comes from a source perceived to be more similar to the receiver (Brown & Reingen, 1987; Price, Feick, and Higie, 1989; Steffes & Burgee, 2009). According to this line of thinking, individuals will consider that the content about hotels published by other users on social network sites (opinions, comments, or audiovisual content) is more applicable to their own behavior if they perceive that it has been posted by people who are similar to them in terms of needs and preferences (for example, location, personal attention, entertainment, tidiness, quietness, pet admission, and children policy). Accordingly, we propose the third hypothesis:

H3. Higher perceived similarity between the user and the generators of content on the social network sites leads to higher perceived influence of this content on user behavior.

**Interaction effects**

On the basis of an extensive review of the literature about the influence of source credibility in communication processes, Pornpitakpan (2004) points out that source credibility exerts direct effects on consumer behavior, but also has interaction effects with other explanatory variables. Therefore, source credibility reinforces or weakens the effect exerted by other determinants of consumer behavior, among others those related to the characteristics of the message (content) or the source (content generators). Although we have not found any previous research on this question in the specific field of e-WOM, it is reasonable to consider that there may be an interaction effect between the credibility attributed to user-generated content on social network sites, the value attributed to this content,
and the similarity between the user and the generators of content.

On the one hand, several authors have established the existence of an interaction effect between source credibility and different characteristics of the message or content, such as the quality of the information or arguments (Herron, 1997; Slater & Rouner, 1996; Stoltenberg & Davis, 1988). Accordingly, the more credible the source is, the stronger the positive effect of message quality on consumer behavior. Applying this logic to the case of e-WOM from social network sites, the influence on behavior of the content posted by other users of the social network sites would be moderated by the credibility attributed to these users. It is necessary to emphasize that the sources of e-WOM from social networks are not just perceived as credible or non-credible. Rather, they have different degrees of credibility within the extreme polarities (i.e. no credibility and absolute credibility). In consequence, the more credibility individuals attribute to the generators of content about hotels, the stronger the effect of information quality on their behavior. In contrast, the more doubts individuals have about the credibility of the source of e-WOM from social network sites, the weaker the influence referenced above. In accordance with this, and in line with the empirical evidence obtained in past research on communication processes (Pornpitakpan, 2004), we propose the following research hypothesis:

**H4.** There is an interaction effect between information value and credibility. In particular, the higher the credibility attributed to the generators of content on social network sites, the stronger the effect of information value on the perceived influence on user behavior.

On the other hand, previous studies on communication and consumer decision-making processes proposed the existence of an interaction effect between source credibility and the similarity. In particular, according to Feldman (1984) a credible source of information will have a stronger effect on consumer behavior when the similarity perceived by the consumer in the source is greater. Pornpitakpan (2004) highlights that this question has not been well researched and points out the need to obtain additional evidence about the interaction effect between source credibility and perceived similarity. Nevertheless, it seems reasonable to think that the influence of the credibility on behavior will be stronger if the consumer perceives that the sender of the message is similar to him or her in terms of interests and needs in a specific field. Applying this logic to e-WOM from social network sites, the more similarity between the user and the generators of content about hotels on social network sites, the stronger the perceived influence of source credibility on behavior. This leads to the fifth hypothesis:

**H5.** There is an interaction effect between credibility and similarity. In particular, the greater the similarity between the user and the generators of content on social network sites, the stronger the effect of credibility on the perceived influence on user behavior.

**Methodology**

Empirical research was carried out in the hospitality sector both in Spain and Portugal. In particular, a combination of qualitative and quantitative methods was used for data collection. The qualitative research consisted of six in-depth interviews with hotel managers that use social network sites to manage e-WOM in their companies. In selecting experts for the interviews, the heterogeneity of the hotel sector was taken into account in order to ensure typological representativeness of the qualitative sample. This sample was composed of managers of independent hotels and hotel chains. More concretely, rural hotels as well as three and four star hotels were considered in the qualitative study. For data collection, the moderator used semi-structured interviews, with a duration of 30–45 min, as research instrument. Inductive analysis and subjective interpretation were carried out with the manifest and latent content which was collected through the interviews.

It is necessary to emphasize that the general objective of the in-depth interviews was to get a broader and more practical view of the research topic. In this sense, all the participants in the qualitative study had extensive experience in using social network sites to manage WOM from consumers of their companies’ services. In particular, two main issues were covered in the interviews: the main motivations of individuals in relation to the information search and choice of a hotel when using social network sites, as well as the way in which the interaction between the hotel and the user is articulated by the managers in this channel of online communication. In particular, around these two issues, a great effort was made to explore the opinions of the managers about the relevance and the main implications of the factors considered in our study, which were used to refine the measurement scales and better understand the results from the quantitative research.

Quantitative research data collection was carried out using a questionnaire divided into three parts: (1) the use, in general, of the social network sites (e.g. Facebook or Tuenti); (2) the evaluation, in the context of hotels, of the influence on behavior of the user-generated content on social network sites as well as its antecedents (i.e. the variables of the theoretical model); and (3) the sociodemographic characteristics of respondents. The variables of the model were operationalized using multi-item measures (Appendix A) and individuals were asked for their responses using a five-point Likert scale (1=strongly disagree; 5=strongly agree). In particular, the dependent variable is the individual’s perception of the influence of the content about hotels published by other users on his/her main social network site (e.g. Facebook or Tuenti) during the stage of information search and choice of a hotel. Therefore, the content provided by firms on their corporate social network sites was excluded. In addition, the informative influence, as established by Bearden, Netemeyer, and Teel (1989), was drawn on in this research to operationalize perceived influence. In particular, items were adapted to explicitly reflect interpersonal influence in the context of social network sites, but the main informational factors established by Bearden et al. (1989) were maintained. For its part, the work of Cheung et al. (2008) was used as a reference to build the measurement scales of information value.
and source credibility, whereas the scales from Wangenheim and Bayon (2004) and Brown et al. (2007) were used as references for the measurement of similarity.

One the questionnaire was developed, a pretest was conducted with 12 members of the Iberian Network of Tourism Researchers (REINTUR). The aim of this pretest was to improve the quality of the questionnaire by considering the specialized knowledge of these Spanish and Portuguese researchers on social media in tourism. Therefore, suggestions to improve the items of the questionnaire made by these scholars significantly contributed to an increase in the content validity of the set of measurement scales. In addition, following the recommendations of Churchill (1991) for empirical research conducted in different languages (in our case, Spanish and Portuguese), the researchers helped to evaluate the clarity and administrability of the questionnaire by checking the format and wording, both in Spanish and Portuguese, of the set of items.

In both countries, Spain and Portugal, the target population of quantitative research was formed by individuals who generally use social network sites to search for information on hotels during their decision-making processes. Because the size of this target population was unknown, the survey sample was selected using a non-random sampling procedure. Specifically, following a convenience sampling procedure, the interviewers were instructed to personally administer the questionnaire to subjects who fulfilled two conditions: (1) they had a personal profile on some social network site (e.g., Facebook or Tuenti) and (2) during the last twelve months, they had used the content about hotels published by other users on their main social network site in order to search for information and choose a hotel. This requirement was established to ensure the quality of the responses and, therefore, to collect reliable data on the individuals’ perceptions of user-generated content from other users on social network sites. Finally, a total of 776 valid surveys were collected in the quantitative research stage.

As shown in Table 1, the profiles of the respondents in terms of demographic and behavioral characteristic are very similar in both samples. Particularly, the dominant profile of respondents is female, aged 21–30 years (in line with the data provided in the study developed by Redshift Research (2013) cited in the introductory section), university level and frequent users of the social network sites in their lives.

### Results

Before estimating the causal model and testing the research hypotheses, the reliability and validity of the measurement scales were checked by means of a confirmatory factor analysis, using EQS 6.1 software. The results confirm the reliability and validity of the multi-item scales jointly studied (see Tables 2 and 3). The factorial model used obtained an adequate data fit for the sample according to all of the statistical indices; the BBNFI, BBNNFI, CFI, and IFI statistics are all above the recommended value of 0.9, and the RMSA value is 0.08. Moreover, the Cronbach’s alpha and Composite Reliability coefficients of each factor are over 0.7, indicating high levels of internal consistency of the measurement scales (Bagozzi & Yi, 1988).

Additionally, according to Steenkamp and Van Trijp (1991), and Anderson and Gerbing (1988), the results confirm both the convergent validity of the factorial model (i.e. the standardized coefficients are significant and above 0.5) and its discriminate validity (i.e. the confidence intervals for the correlations between the latent factor pairs do not include the unit). Consequently, the multi-item scales are reliable and valid for measurement of the psychological variables of our theoretical model (the descriptive statistics for the items included in the measurement scales and the covariance matrix are detailed in Appendix B).
Table 2  Confirmatory factor analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable</th>
<th>Standard coeff.</th>
<th>$R^2$</th>
<th>Cronbach’s $\alpha$</th>
<th>Composite reliability</th>
<th>AVE</th>
<th>Goodness of fit indices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived influence</td>
<td>PINF1</td>
<td>0.859</td>
<td>0.738</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>PINF2</td>
<td>0.879</td>
<td>0.773</td>
<td>0.887</td>
<td>0.889</td>
<td>0.727</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PINF3</td>
<td>0.819</td>
<td>0.671</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IVAL1</td>
<td>0.787</td>
<td>0.619</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IVAL2</td>
<td>0.653</td>
<td>0.427</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IVAL3</td>
<td>0.803</td>
<td>0.644</td>
<td>0.859</td>
<td>0.861</td>
<td>0.555</td>
<td></td>
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<tr>
<td></td>
<td>IVAL4</td>
<td>0.800</td>
<td>0.640</td>
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<td></td>
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<tr>
<td></td>
<td>IVAL5</td>
<td>0.666</td>
<td>0.444</td>
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<tr>
<td></td>
<td>CRE1</td>
<td>0.798</td>
<td>0.636</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>CRE2</td>
<td>0.806</td>
<td>0.650</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRE3</td>
<td>0.741</td>
<td>0.550</td>
<td>0.864</td>
<td>0.871</td>
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<tr>
<td></td>
<td>CRE4</td>
<td>0.806</td>
<td>0.649</td>
<td></td>
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<tr>
<td></td>
<td>CRE5</td>
<td>0.673</td>
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<td></td>
<td>CRE6</td>
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<td></td>
<td>SIM1</td>
<td>0.854</td>
<td>0.729</td>
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<tr>
<td>Similarity</td>
<td>SIM2</td>
<td>0.937</td>
<td>0.878</td>
<td>0.919</td>
<td>0.921</td>
<td>0.795</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SIM3</td>
<td>0.882</td>
<td>0.779</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 3  Discriminated validity of the factorial structure.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Perceived influence</th>
<th>Information value</th>
<th>Credibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information value</td>
<td>0.804$^a$ (0.764; 0.844)$^b$</td>
<td>0.818 (0.780; 0.856)</td>
<td>0.723 (0.679; 0.767)</td>
</tr>
<tr>
<td>Credibility</td>
<td>0.801 (0.765; 0.837)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Similarity</td>
<td>0.601 (0.541; 0.661)</td>
<td>0.654 (0.598; 0.710)</td>
<td></td>
</tr>
</tbody>
</table>

$^a$ Correlation among variables.
$^b$ Confidence interval for correlations between factors.

The statistical analysis to test the research hypotheses was based on a regression model with interactive effects. This model includes the direct effects of information value, credibility, and similarity on perceived influence, as well as the interaction effect between information value and credibility, and the interaction effect between credibility and similarity (Eq. (1)).

$$
\text{Perceived influence} = \alpha + \beta_1 \text{information value} + \beta_2 \text{credibility} + \beta_3 \text{similarity} + \beta_4 \text{information value} \times \text{credibility} + \beta_5 \text{credibility} \times \text{similarity}.
$$

It is important to note that the variables were calculated using the average of the items comprising the constructs in the model. In addition, following Lance (1988), before the estimation of the regression model multicollinearity was eliminated using the residual-centering procedure. The interaction effect was replaced by a new variable resulting from the comparison between the interaction and the expression extracted from the regression of the two variables on the interactive effect (the results are summarized in Table 4).

First, the model explains a significant percentage of the observed variance (above 0.5). Second, in relation to the direct effects of the model, both information value and credibility have a positive effect on the perceived influence variable (H1 and H2 are supported). However, similarity does not have a significant effect on perceived influence (H3 is not supported). Third, with regard to the interactive effects of the model, the interaction between information value and credibility has a significant and positive effect on perceived influence (H4 is supported). In contrast, H5
Perceived influence on behavior of content on social network sites  

![Graph showing the interactive effect between information value and credibility.](image)

**Figure 1** Interactive effect between information value and credibility.

is rejected because the interaction between credibility and similarity does not a significant effect on the perceived influence variable.

The effect of the interaction between information value and credibility on the perceived influence is graphically represented in Fig. 1. Three levels of the credibility variable were selected in the analysis: (1) low (i.e. the average credibility minus the standard deviation); (2) medium; and (3) high (i.e. the average credibility plus the standard deviation). For each of the three levels, the effects of information value on perceived influence are indicated. Following the procedure proposed by Aiken and West (1991), the regressions of information value on the perceived influence variable are graphically represented, using the extreme levels of information value as a reference. It was observed that the effects of information value on perceived influence are positive for the three levels of credibility, although the intensity of these effects increases as credibility increases.

**Discussion, implications and future research**

In the industries of tourism and hospitality, e-WOM has special relevance for users during the pre-purchase stage. This research aimed to develop and empirically test an integrative model that explains the process of social influence through social network sites in the context of hotels. In particular, this study examined how the influence on user behavior of the content published by other users on social network site is determined by: (1) the user’s perceptions about the value of this content; (2) the credibility that the user attribute to the content; and (3) the degree of similarity between the user and the generators of content. This paper provides a relevant contribution, with respect to past research, both from theoretical and practical perspectives.

From the perspective of consumer behavior theory, the results of this research aid in the understanding of factors that determine the influence of social network sites on individual decision-making processes. The empirical evidence obtained confirms that the influence of social network sites on behavior, as perceived by users, is affected by the value of the content available from those sources (i.e. information value) as well as the credibility attributed to them. Therefore, users will be more affected by social network sites in terms of their behavior when they consider the content available in these media to be more valuable and more credible.

However, the similarity between the user and the generators of content was not found to be a direct determinant of the influence of social network sites on behavior. Therefore, the users consider the value and the credibility of the content posted by other users on their social network sites more relevant, based on their personal experiences, than the coincidence of interests and preferences. This may be due to the fact that, contrary to other sources of e-WOM in tourism (such as, recommendation websites like TripAdvisor or online travel agencies like Booking.com), the social network sites (e.g. Facebook) do not usually provide tools to segment user-generated content on the basis of the socio-demographic characteristics or preferences of the users that post the content. Therefore, the user’s similarity with regard to the people posting content about hotels on social network sites is difficult to evaluate, and requires an information search that the user may not be willing to perform. According to this rationale, and in line with our results, user behavior (i.e. information search and choice) would be influenced by the value perceived in the user-generated content about the hotel, and on the credibility attributed to those people, but not by the similarity.

This study also examined the interaction effects between explanatory variables in the formation of the perceived influence. In particular, the results obtained in the present research indicate that only the interaction effect between information value and source credibility is relevant in the formation of that variable, but not the interaction effect between credibility and similarity. Therefore, the effect of information value on the perceived influence on user behavior is stronger when the credibility attributed by the user to the generators of content is high.

The findings of this research have relevant theoretical implications. First, although the effects of information value, source credibility, and user similarity on behavior have been studied in general communication literature, our paper provides new evidence with regard to the influence of these variables in the context of hospitality (in particular, information search and choice of a hotel). Additionally, our research is an initial attempt to fill the gap identified by Pornpitakpan (2004) in marketing literature regarding the interaction effect between source credibility and other variables explaining communication influence on consumer behavior. In particular, we found a significant interaction effect between credibility and information value attributed to user-generated content on social network sites. In conclusion, the evidence obtained can open a new field of study on the interaction effect of credibility with other variables, in other sectors and in other communication contexts (e-WOM or others).

From a managerial perspective, our results also have significant implications for marketing activities in the hospitality industry. In particular, this paper shows that firms should develop strategies to consciously manage the e-WOM about their products and services. In this sense, although organizations cannot directly control social network sites, they should try to follow and manage content (e.g. information, comments, photos, or videos) regarding their businesses. Therefore, managers should be conscious of the fact that social networks are open communities...
formed by millions of users that do not only publish content on the firms’ social network pages, but can also post comments, photos, or videos on independent thematic pages within the social network site. Under these circumstances, detecting content related to the business and identifying opinion leaders is very difficult.

In this context, the best approach is mixing interactive and mass communication. A highly recommended strategy is to create a corporate page on the social network site aimed at publishing information about the company, as well as to establish a virtual channel through which to interact with users. Firms should encourage these users to create content on their corporate pages in order to share their positive experiences with other people (e.g. potential clients) regarding their use of the products and services. According to the findings of our research, organizations should reinforce the credibility of the content generators and the value of the information posted on their corporate pages on social network sites in order to maximize the impact of this type of personal communication. Particularly, companies should emphasize the expertise and independence of the generators of content, as well as the relevance of this content for users in their decision-making processes.

In addition, it would be interesting to provide additional information about the personal profiles and tourism preferences of the people posting content on company pages, a strategy that has been extensively used by other sources of e-WOM such as recommendation websites (e.g. TripAdvisor), price comparison robots (e.g. Trivago), or online travel agencies (Booking.com or Expedia). The value and credibility attributed to the information provided would be higher if users consider that the people who post the content are similar to them in terms of preferences and needs. Finally, organizations should continuously monitor social network sites for both positive and negative content about their services and reinforce or mitigate the content with personalized messages. Without such monitoring, firms would be ignoring a relevant source of information about their potential customers’ opinions and preferences and would allow an unchecked stream of e-WOM that could have a negative influence on their sales.

This study has several minor limitations. First, although the dependent variable (i.e. the individual’s perception of the influence exerted by social network sites on behavior) has been widely used in past research on consumer behavior, it would be interesting to explore a more direct approach to measure the effect of e-WOM on behavior. Additionally, the dependent variable of the model consisted of the informative influence only; a study separating the informative and normative dimensions of social influence may provide a better understanding of the effects of e-WOM on behavior. Second, the sample used in the study was formed by individuals who use social network sites to search for information about hotels. Therefore, the results can be generalized only to the most technologically engaged users, although this group is becoming increasingly dominant given the popularity of the Internet.

Third, although the discriminant validity of factors was confirmed using the procedure proposed by Anderson and Gerbing (1988), the high correlation between “information value” and “credibility” could raise some doubts regarding this issue if more demanding methods are used (e.g. Fornell & Larcker, 1981). Accordingly, it would be interesting to continue with the refinement of the measurement scales of these constructs. Finally, it is necessary to indicate that an analysis with all the users was conducted in this study (i.e. a distinction between Spanish and Portuguese users was not made). Taking into account the differences between both countries in terms of the cultural dimensions established by Hofstede (2001), further analyses should be performed to identify possible differences between both samples in relation to the intensity of the relationships between the variables of the theoretical model.

In future research, it is necessary to replicate this study in different geographical and consumption contexts. For example, the use of social network sites may be relevant in the choice of a tourist destination. In addition, the influence of the content published in other social media (e.g. recommendation websites) on consumer behavior in tourism should be examined. Finally, a deeper understanding of the influence of social media in consumer psychology of tourism and hospitality would require consideration of other explanatory variables, such as the past experience of individuals with social media, their levels of involvement in the purchase or, as was indicated before, cultural factors.

Conflict of interest

The authors declare no conflict of interest.

Appendix A.

Measurement scales

Perceived influence of the social network (Contents about hotels published by other users on my main social network site influence my hotel choice because...)

... They offer security in my choice.
... They are of great help in making a good choice.
... They give me relevant information for my choice.

Information value (Contents about hotels published by other users on my main social network site are...)

... Useful.
... Current.
... Detailed.
... Large.
... Numerous.

Credibility (Contents about hotels published on my main social network site are written by...)

... Users with great knowledge of hotels.
... Users with reasonable standards for judging hotel quality.
... Users who use hotels often.
... Reliable users.
... Users who have independent opinions about hotels.
... Users who give their opinion in a disinterested way.

Similarity (Contents about hotels on my main social network site are published by...)

... Users who have interests that are similar to my own.
... Users who are like me in their preferences.
... Users with tastes similar to mine.
Appendix B.

Descriptive statistics

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Covariance matrix

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