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When e-commerce becomes more human by transposing the hospitality concept to merchant websites

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Abstract

This research mobilizes the concept of hospitality, which is strongly anchored in human values, in the field of e-commerce. It demonstrates the relevance of drawing on the concept of hospitality in the context of e-commerce as well as how to do so. Based on a quantitative study of a sample of French consumers (n=215), this research also shows how the hospitality of a commercial website impact the emotional reactions with positive and negative valence and the approach/avoidance behaviors towards the website.

Keywords: virtual hospitality, e-commerce, affective reactions, approach - avoidance behaviors.

1. Introduction

Today more than ever, people are looking for more social ties and more humanity in their relationships. Commercial relations are no exception to this rule: Kotler and *al.* (2010 [1]) evoke a new form of marketing where companies are gradually abandoning the customer to focus on the human aspect of their commercial relations. Even when based in the digital sphere, social relationships remain important in a consumer setting. Opportunities to interact with vendors or to feel a form of social presence are very important in e-commerce (Lu, Fan and Zhou, 2016 [2]). Whether in marketing or in information systems (IS), research has focused on how to humanize e-commerce through different concepts like social presence (Gefen and Straub, 2003 [3]; Jiang and *al.*, 2019 [4]), web atmosphere, which includes a social dimension (Lemoine, 2008 [5]), empathy (Allard and *al.*, 2020 [6]), etc. Paradoxically, these social aspects are often used in a 'negative' way, for example, when certain websites seek to generate a state of emergency among internet users to incite them to buy : "This hotel room has been consulted X times in the last hour". Although widely practiced, these alerts can be oppressive. Promotional offers with a quick expiration date or one-off sales are all elements that can generate stress among internet users (Moody and Galletta, 2015 [7]). Despite the progress made by researchers in better understanding the behavior of e-buyers in relation to these social aspects, and by professionals in developing these forms of social presence, some authors (e.g., Tan and Liew, 2020 p.1136 [8]) continue to argue that e-commerce is still perceived as cold and impersonal, although this was already being mentioned in different works in the early 2000s.

To further anchor e-commerce in these more human and less commercial values, we propose to mobilize the concept of hospitality in our research. This concept has always been linked to strong human anchoring. The hospitality of an e-commerce site (that we will call virtual hospitality) differs from the main concepts for humanizing online commercial relationships in

several ways. Hospitality is mainly concerned with strengthening the relationship between a host (the company in this case) and the guest (the customer) in a specific space (the website). Unlike the concepts of atmosphere, the entirety of the components of hospitality are rooted in this form of humanization. The relation is more intense insofar as the host and the guest can be led to develop social relationships that go beyond the commercial framework (friendship, specific knowledge of the other, etc.). There is therefore a rebalancing between the social and commercial components on the website. For this purpose, the concept of hospitality is much more holistic than other concepts such as social presence because it also takes into account the space in which the hospitality is lived: the hospitality experience must take place in a place of human size, not too crowded, comfortable, and easy to use in order to develop orality, exchange of information, and ease of use for everyone, and thus to promote human relations.

The objective of this article is to study the role of the hospitality offered by a commercial website on the reactions of internet users. More specifically, we study emotional reactions with positive and negative valence. In fact, affects are described as having an important influence in online shopping behavior (Ethier and al., 2006 [9]; Pappas and al., 2016 [10]). The mediating role of these affects on approach and avoidance behaviors it is also studied. In order to meet this objective, a first section is devoted to a review of the literature relating to the concept of hospitality and its transposition into a virtual environment. In particular, we will insist on the legitimacy and interest of mobilizing the concept of hospitality in an e-commerce context. A second section will show the effects of hospitality on consumer reactions. We present the results of a quantitative study conducted on a representative sample of the French population (n=215) and based on the manipulation of virtual hospitality dimensions. The results show the positive effects of virtual hospitality on affective reactions with positive valence as well as on approach

behaviors. To conclude, future research avenues as well as managerial applications to develop the level of hospitality of digital interfaces are proposed.

2. Hospitality in the digital age: legitimacy and conceptualization

Applying the notion of hospitality to the context of service relationships such as in the hotel industry or in tourism may seem an obvious move. Yet, such an application does not systematically come to mind when dealing with virtual relationships despite the fact that hospitality goes beyond the context of physical hosting. Cinotti (2011 [11]) distinguishes three forms: territorial, domestic and commercial. He also specifies that the combination of these three elements corresponds to total hospitality. Evoking the notion of total hospitality therefore suggests that partial hospitality could exist. Furthermore, Milon (2004 [12]) evokes transhospitality to refer to places considered to be hospitable by accident, i.e., their primary vocation is not to be hospitable places (a subway station, for example). This same author specifies that hospitality must be able to be exercised anywhere and under any circumstances. In the same vein, King (1995 [13]) uses the metaphor of hospitality to describe firms that provide services to clients.

Thus, we can understand how a virtual space, like a commercial website, could be considered a hospitable space: the image of a host (the webmaster) welcoming guests (the customers) within a digital space (the website) through a ritual marking the passage from the outside to the inside (the home page) could be considered as hospitality. Moreover, the lexical field of websites already suggests this dimension (web hosting, home page, etc.). However, a computer screen is, by definition, inanimate and devoid of any social characteristics: the question of the possibility of feeling this form of humanization *via* a digital intermediary then arises. In fact,

the literature on human-computer interactions provides elements that legitimize and transpose the concept of hospitality to digital interfaces.

A great amount of research has been carried out on how to give a certain social form to digital interfaces. In their work on the CASA paradigm (Computers Are Social Actors), Nass, Moon and Carney (1999 [14]) specify that the rules observable in human-human communication are also observable in human-computer interactions. In an adaptation to the web context, Kumar and Benbasat (2002 [15]) specify that the same para-social presence characterizes the relationship between the website and the internet user as in an ordinary interpersonal relationship. In the same vein, the concept of social presence is defined as the extent to which a virtual intermediary allows users to feel that others are psychologically present (Gefen and Straub, 2003 [3]). These elements then show that it is possible to confer a certain form of sociality on digital spaces and that users of these spaces can perceive it. This is a major asset in the transposition of the concept of hospitality to digital spaces.

2.1 Virtual hospitality: a space where navigation is facilitated

Ciborra (2002 [16]) was the first to apply the concept of hospitality in IS. One of the starting assumptions of his work relates to the role of host that the technological device takes on. From then on, the user takes the place of the guest. The role of the designer of the technology is therefore very important since the design of the hospitality tool must be malleable, thus allowing optimal adaptation for the user (Ciborra, 2002 [16]).

For Piccoli and *al.* (2004 [17]), hospitality is one of the customer needs that can be met online. It revolves around three dimensions (Piccoli and *al.*, 2004, p.429 [17]):

- “Information Convenience: The need to have convenient access to information. It is addressed by services such as access to information drawn from multiple Web pages (e.g.,

financial snapshot) at the same time or access to information that exists elsewhere but is useful when included on the Web site.”

- “Site Navigation: The need to conveniently find the sought information on the company Web site. It is addressed by services such as site maps and search features.”

- “Customer Confidence: The need to learn to effectively use the company’s Web site and its features. It is addressed by services such as tutorials and help menus.”

According to Iliachenko (2006 [18]), hospitality responds to the need for convenient use and efficient access to the information and functionalities of the website. More recently, Mani's (2012 [19]) synthesis work invites us to consider virtual hospitality (using the qualifier ‘virtual’ to evoke the notion of hospitality applied to digital spaces) as a complementary service that each site should offer in order to improve the visitor's navigation. This service responds to a need and should offer functionalities that give an easy and practical aspect to the search for information or the product on the site (Mani, 2012 [19]).

A synthesis of these different visions of virtual hospitality shows that the concept has been mainly studied in response to internet users’ difficulty of navigation when they are online, since this navigation is self-directed. Hoffman and Novak (1996, p.53 [20]) define self-directed navigation as "the process of self-directed movement through a hypermedia computer-mediated environment". The interest of facilitating this navigation in digital spaces such as e-commerce sites lies in offering the internet user a non-linear information search process. This offers freedom of choice in navigation and greater consumer control, unlike with other more traditional media such as television (Hoffman and Novak, 1996 [20]). Thus, site designers must make the former hospitable, ensuring that the internet user has maximum autonomy by simplifying the use of technology, particularly through navigation. The developer of the tool must be able to show empathy by putting him or herself in the user's place so that he or she can

make optimal use of it. This optimized navigation refers to the notion of usability, which is defined as “the ease with which customers can navigate through a site in terms of a well-structured visual appeal, a high-speed download, and an information security concern” (Wu and *al.*, 2016, p. 287 [21]), and whose importance has been highlighted in the literature on interactive systems (Venkatesh and Agarwal, 2006 [22]).

“But is usability all that matters in human– technology interaction?” (Thüring and Mahlke, 2007, p. 254 [23]). This question takes on its full meaning in the transposition of the concept of hospitality into a digital environment. The navigation dimension is only part of the concept. For example, during a hospitality relationship in a guesthouse, can we say that the hosts are hospitable because they have made it easier for their guests to navigate around the house? While this element is important, it does not characterize hospitality in its entirety. Considering hospitality as a way to improve navigation in a space is therefore too simplistic. The literature specific to the concept of hospitality reveals other elements that can be transposed to digital spaces such as e-commerce sites.

2.2 Hospitality: a concept at the heart of human relations since antiquity

The concept of hospitality is linked to the history of humanity: historical archives going back to antiquity make reference to the notion of hospitality. Whether fleeing wars or meeting other peoples in order to develop trade relations, humans have always moved around and therefore been pushed to exercise or accept hospitality. For more detail on this topic, see Perol (2004 [24]).

A review of the literature specific to the concept of hospitality reveals the existence of three dimensions. There is the dimension relating to navigation within a place, as already evoked in

the transposition of the concept of hospitality to digital interfaces. But other fundamental elements of hospitality are also present in the literature. We propose grouping them into two dimensions: reciprocity in exchange and entertainment. We detail the three dimensions of hospitality as applied to e-commerce below.

Navigation dimension. Here, there is a key distinction between an inside and outside space, which manifests through a welcoming ritual (Bouchet, 2004 [25]; Grassi, 2004 [26]). In the commercial field, the ritual of welcoming is often present at the point of sale when a salesperson welcomes a customer between the outside (the street) and the inside (the store). It can also be found online, with the home page marking the passage from "outside the place" to "inside". Once in the hospitality space, the elements present should make the guest feel at home, referring to the physical and moral comfort felt by the guest (Hepple and *al.*, 1990 [27]) while in the host's home. In order to ensure this comfort, the space must be easy to use, with optimized navigation, thus referring to elements already present in the literature on hospitality in digital spaces (Ciborra, 2002[16]; Iliachenko, 2006[18]; Mani, 2012[19]; Piccoli and *al.*, 2004 [17]).

Reciprocity dimension. Among the Greeks and Romans, reciprocity was a fundamental principle of hospitality. It allowed travelers to be accommodated and protected, but also to receive commercial benefits such as the receipt of goods or deferred payment: without guaranteed and effective hospitality, trade was impossible (Perol, 2004 [24]). The Middle Ages and then modern times respectively show the birth and proliferation of inns: they became places of life, marked in particular by the exchange of information. Some authors define the exchange of information as a mechanism of hospitality (Raffestin, 1997 [28]). Montandon's (2004 [29]) definition of these hostels evokes the interest in information exchange: they are places of speech.

We find these elements in contemporary literature too: Brotherton and Wood (2000, p.168 [30]) define hospitality as: "a contemporary human exchange, which is voluntarily entered into, and designed to enhance the mutual well-being of the party concerned through the provision of accommodation and food or drink". It integrates the fundamentals of the concept present since antiquity: exchange, humanity, reciprocity. Hepple and *al.* (1990 [27]) and King (1995 [13]) also insist on these elements, recalling that interaction between two individuals (one welcoming, the other welcomed) is essential to qualify an exchange as hospitable.

Furthermore, it can be argued that this exchange must be balanced, allowing each party (host and guest) to obtain relatively equitable benefits over time. In other words, this reciprocal dimension of hospitality is indispensable since the situation is initially unequal: the host is at home, but the guest is not. Reciprocity rebalances the situation by putting the two protagonists on an equal footing, one being at home and the other being welcomed (Grassi, 2004 [26]).

For this reason, social interaction is essential for reciprocity: it is the basis of the information exchange process, but also allows a better understanding of the tastes and desires of one's guest. The latter must feel expected, desired and must not feel that they are disturbing (Bouchet, 2004 [25]). King's (1995 [13]) notion of mothering also goes in this direction: the host takes care of guests and implements elements that will please them.

Entertainment dimension. Although hospitality and entertainment are linked (King, 1995 [15]; Palmer, 1992 [31]), entertainment aspects have been little integrated into considerations of hospitality (Lugosi, 2008 [32]), even though they are fundamental to hospitality (Telfer, 2000 [33]). This dimension can, for example, be seen when the host proposes a visit to a tourist site with a guest, or through the preparation of a meal to be shared. The idea is to go beyond simple accommodation by bringing the two protagonists closer together.

In the literature that has applied hospitality to commercial spaces, Hemmington (2007 [34]) refers to theatricalization as the basis of hospitality: both the host-company and the client-guest are brought to play a role. This form of entertainment is a break from traditional commercial relationships and is inspired by the desire to rethink commercial relationships as being solely merchant driven. For this to happen, such entertainment must not be subject to financial compensation, otherwise it would lose its value. The sole purpose is to please consumers (Telfer, 2000 [33]).

The three dimensions of hospitality have in common the desire to reinforce social relations, joining together the idea of a more human and less commercial e-commerce. To achieve this, the offer is limited and its access is facilitated thanks to the navigation dimension. The elements of reciprocity guarantee an equitable exchange (notably of social contact and information) between host and guest. Finally, the playful dimension reinforces human sharing insofar as the entertainment offered involves the participation of other members. This dimension also brings in non-market elements.

Taking into account all of these elements, based on commonly accepted definitions and acceptances of hospitality in the literature, we propose to define the virtual hospitality of an e-commerce website as the capacity of a website to welcome its users within a convivial and community space, allowing an exchange based on the principle of reciprocity.

3. The hospitality of an e-commerce site: what impact on the consumer? Proposal of a theoretical framework

The theoretical framework we propose is based on the Stimulus-Organism-Response (S-O-R) theory (Mehrabian and Russel, 1974 [35]) which assumes that a stimulus (S) impacts people's

affective reaction (O), which in turn generates approach or avoidance responses. This theory has been widely used in the context of online purchasing, showing the applicability and suitability of S-O-R theory in this context (Fei and al., 2021 [36]). Some recent research on the impact of social elements on the behavior of internet users also uses this theory (e.g., Fei and al., 2021 [36]; Friedrich and al., 2019 [37]; Kamboi and al., 2018 [38]). In the present research, we will focus on the direct effects of virtual hospitality (the stimulus) on approach and avoidance behaviors (the responses) and the mediating role of affective reactions.

3.1 Direct effects on approach and avoidance behaviors

Approach–avoidance behaviors, although holistic, allows us to apprehend many key behaviors in the success of a merchant site, such as satisfaction, the desire to explore the site, time spent on it and the probability of purchase (Deng and Poole, 2010 [39]). In the context of e-commerce, to our knowledge, there are thus far no studies that allow us to infer a direct link between virtual hospitality and approach-avoidance behaviors. However, approach-avoidance behaviors have been mobilized in an e-commerce context in response to the experience of the components of the atmosphere of a site (Eroglu, Machleit and Davis, 2003 [40]). Virtual hospitality is a specific form of atmosphere insofar as it is fully anchored in social exchange. Indeed, all three dimensions of virtual hospitality have in common the fact of developing exchanges between host and guest.

The literature specific to these social factors in e-commerce shows positive effects on the increase of the level of trust (Cherif and Lemoine, 2019 [41]; Gefen and Straub, 2003 [3]), on purchase intention (Wang and al., 2007 [42]), satisfaction (Holzwarth, Janiszewski, and Neumann, 2006 [43]), and intention to recommend the site and return (Cherif and Lemoine, 2019 [41]). The work of Tang & Zhang (2020 [44]) shows how the atmospheric factors

(including social factors) of online sales sites generate approach behavior. Conversely, Lu, Fan, and Zhou (2016 [2]) discuss the fact that an absence or low level of online social presence reduces the level of trust which could, by extension, lead to avoidance behaviour.

Also, the literature in "traditional" hospitality shows that this strong social anchoring generates a set of reactions with positive valence for the guest (Brotherton & Wood [30], 2000; King [13], 1995; Perol, 2004 [24]), which can lead to approach behavior.

The user following his or her experience on a website with hospitality characteristics should theoretically change his or her approach and avoidance behavior.

Thus, the following hypotheses are proposed:

H1: The virtual hospitality of a website has a positive impact on the approach behavior

H2: The virtual hospitality of a website negatively impacts avoidance behaviors

3.2 Mediating role of affective reactions

The literature on affective reactions is dense and does not show any real consensus. While Sherman, Mathur and Smith (1997 [45]) mention the fact that the literature has suggested the equivalence of the terms emotions, affect and mood, other authors do not seem to agree on these equivalences. For example, Bagozzi and *al.* (1999 [46]) specify that affects are holistic by qualifying them as a generic term, since they include emotions. Given the richness of the concept and related notions, we will retain the term 'affective reactions' to designate all the reactions felt by a consumer in a commercial situation and falling within the affective sphere.

The first studies on reactions to the use of technology were treated from a cognitive angle, leaving aside affective aspects (Hauser and *al.*, 2009 [47]; Sutcliffe & Hart, 2017 [48]). They are nevertheless important, since they allow decision making even in environments mediated by screen (Picard, 2003 [49]). However, the trend tends to be reversed since Zhang (2013 [50]) acknowledges that the study of affective states in human-computer interactions is becoming

increasingly important. Indeed, since the mid-2000s, affective aspects have gradually been integrated into research (Cyr and *al.*, 2009 [51]; Hauser and *al.*, 2009 [47]; Kim and *al.*, 2007 [52]).

In the context of e-commerce, affective states are generated by different elements: visual design (Liu and *al.*, 2001 [53]; Park and *al.*, 2005 [54]), ease of use (Ehier and *al.*, 2006 [7]), functional convenience and representational delight (Verhagen & van Dolen, 2011 [55]) or the perception of usability and aesthetics (Jiang & Benbasat, 2007 [56]; Kim and *al.*, 2007 [52]; Porat & Tractinsky, 2012 [57]). Perceived complexity will have negative effects (Huang, 2003 [58]). The consequences of these emotional states have also been studied in numerous works: on impulse buying (Verhagen & van Dolen, 2011 [55]) and intention to purchase (Menon & Kahn, 1995 [59]; Eroglu, Machleit and Davis, 2003 [40]), amongst others.

The literature has also looked at how social elements can generate affect in the context of online market relationships (Cyr and *al.* 2009 [51]; Darke and *al.* 2016 [60]). For example, positive effects on the feeling of proximity and enjoyment have been studied (Ben-mimoun & Poncin, 2015[61]; Jiang and *al.*, 2019 [4]; Leong and *al.*, 2020 [62]; Ogonowski, 2014 [63]). A feeling of empathy following the writing of negative comments has even been observed (Allard and *al.*, 2020 [6]). By defining social presence as the “ability of participants to project themselves socially and affectively in sales interaction”, Koponen and Rysty (2020, p.3 [64]) show the strong links that can exist between the social and affective dimensions in e-commerce interactions. Social anchoring, as well as the exchange, reciprocity and entertainment aspects of the concept of hospitality can also generate affects: Lugosi (2008 [32]) describes hospitality as an experience that is both communal and emotional. These affective states have also been

little studied in the literature on traditional hospitality (Lugosi, 2008 [32]; Pullman and Gross 2004 [65]).

The hospitality of an e-commerce site could therefore give rise to emotional reactions with positive valence. It could also help to reduce the level of negative valence often provoked on e-commerce sites via promotional offers with a short window of validity, or one-off sales, all of which are elements that can generate stress due to a reduction in mental capacity (Moody and Galletta, 2015 [7]). The choice of affective reactions retained in this research was based on works conducted on hospitable merchant websites (Bataoui & Giannelloni, 2019 [66]), as well as a study of the literature on affective reactions in the field of distribution in a francophone context (Lemoine, 2008 [5]; Lichtle & Plichon, 2014 [67]). We retain positive and negative affects insofar as Bataoui & Giannelloni (2019 [66]) shows that it is possible, within the same virtual hospitality experience, to experience both positive and negative-valued affective reactions. From the list of affective reactions meeting these characteristics, we limited our choice to those affective reactions whose developmental phases and psychometric qualities seemed satisfactory. The scales proposed by Lichtle & Plichon (2014 [67]) met these criteria. An adaptation of these scales was however necessary because these measures were initially developed in a context of offline distribution. For this, a pre-test was performed (Appendix C). Only measures with good psychometric qualities were then retained.

Finally, the affective reactions retained are the following: fullness and pleasure for those with positive valence and nervousness and oppression for those with negative valence.

In a more comprehensive model, and building on the work of Machleit and Eroglu (2000 [68]), who state that affective reactions are often defined as mediating elements between the

purchasing environment and consumer behavior, we propose the following hypotheses, in line with the S.O.R. model (Mehrabian and Russell, 1974 [35]):

H3: Positive affective reactions (a, fullness and b, pleasure) mediate the relationship between "hospitality" and "approach behavior"

H4: Negative affective reactions (a, nervousness and b, oppression) mediate the relationship between "hospitality" and "avoidance behaviors"

The various hypotheses presented can be summarized as presented on figure 1, at the end of the article.

4. Study protocol, data collection and analysis

4.1 Study protocol

The website created for the study is an online clothing sales site called Vetistore. Box 1 (presented at the end of the article) is a presentation of this website. The creation of this website was based on the literature review developed in section 2. Appendix A shows examples of items handled at the sites, based on their degree of hospitality. This annex also shows the design of the website used in this research.

Two of the three dimensions of virtual hospitality were manipulated (the reciprocity and entertainment dimensions) at two levels (strong vs. weak), thus allowing four versions of the same site with different levels of hospitality.

The navigation dimension was removed from this protocol to facilitate the administration of the survey. The reasons for this choice are both academic and managerial. From an academic point of view, the literature has extensively studied the interest of facilitating the navigation of the internet user through numerous concepts (e.g., Hoffman & Novak, 1996 [20]; Lavie & Tractinsky, 2004 [69]; Wu and al., 2016 [21]). The consequences of facilitated navigation have also been studied in the literature and the effects have been highlighted, such as impulse buying

(Ethier and *al.*, 2006; [9] Verhagen & van Dolen, 2011 [55]), visual appeal (Liu and *al.*, 2013 [70]) or negative effects on pleasure (Huang, 2003 [58]). Deliberately degrading the navigation of sites is therefore of limited interest with regard to these elements.

A sample was composed in order to represent the French population aged 18 years and over (absence of significant differences between the values obtained and those of this population). To this end, three representativeness criteria were selected: gender, age and socio-professional category (SPC). Once the data was collected, it was cleaned up following a procedure that allowed for the elimination of individuals who were out of quota or who had not answered the questionnaire in a serious manner. The latter category included individuals whose response time (including the visit to the website) was considered too short or too long or those who responded randomly. In addition, control questions made it possible to verify the fact that the respondents had visited the site. Manipulation check questions were also included to ensure that individuals perceived the manipulated hospitality items. Once the collection and clean-up phase were complete, we conducted a series of Khi-2 tests to ensure that the four cells handled were statistically identical in the criteria of age, gender and SPC. We also made sure that there was no significant difference in the involvement for the product category (clothing). For this, we used the Pelet (2008 [71]) scale, which is based on the work of Strazzieri (1994 [72]). Using an ANOVA analysis, we carried out the same verification for online buying habits, mobilizing Limayem and Rowe's scale (2006 [73]). These two scales were chosen because they have the advantage of having been developed in a French-speaking cultural and semantic context while being adapted to commercial websites. The four cells showed no significant difference on these variables (appendix B).

Regarding approach and avoidance behaviors, we mobilized the Deng & Poole (2010 [39]) scale, itself adapted from the work of Donovan and Rossiter (1982 [74]). Being initially developed in English, a retro-translation involving six translators was necessary to obtain a French language version. Concerning affective reactions, the scales developed by Lichtle & Plichon (2014 [67]) were used. Being developed in a French-speaking cultural and semantic context but within the framework of the "bricks and mortar" distribution, an adaptation was necessary. All the scales selected were pre-tested in order to verify that adaptation to a new cultural and semantic context for the scale relating to approach and avoidance behaviors, as well as adaptation to the field of online distribution would not deteriorate the psychometric qualities of these measures. The results of this pre-test were quite satisfactory and are available to see in appendix C. Based on the work of Jarvis and MacKenzie (2003 p.203 [75]), we mobilize a reflexive model, including the fact that direction of causality is from construct to measure.

4.2 Manipulation checks and sample quality control

The dimensions of virtual hospitality were manipulated according to the elements present in each of the dimensions of hospitality and presented in Appendix A. In order to perform manipulation checks with the aim of verifying the presence of significant differences between each of the manipulated versions of the websites, we use Author's scale ([76]).

The psychometric qualities of this perceived hospitality scale, derived from the data collected in this research, are presented in Appendix D. The table 2 summarizes the results of the manipulation check tests according to the four manipulated sites: A being the most hospitable with the presence of reciprocity and playfulness dimensions (++), B only integrates reciprocity elements (+ -), C only integrates playfulness elements (- +) while D is considered here to be

inhospitable (- -). The significant differences were treated using post-hoc tests (Tukey), comparing the factor scores for each of the sites and each of the dimensions.

As we can observe in table 2, websites where the reciprocity dimension is present show significant differences from sites where this dimension is not present. A similar result can be observed for the entertainment dimension. The navigation dimension does not show any significant difference since it has not been manipulated.

4.3 Psychometric qualities of the scales used, validity and quality of the model

Before analyzing the data, the psychometric qualities of the scales mobilized were studied. The results are satisfactory and are available in Appendix E. Convergent validity is achieved if the items assumed to measure the same construct are correlated with each other. Appendix E confirms this point. Fornell and Larcker (1981 [77]) specify that good convergent validity is established when standardized indicators share more variance with their constructs than with their measurement errors. This can be verified from the Average Variance Extracted (AVE), which is well above 0.5 for each construct. Moreover, according to Henseler and *al.* (2009 [78]), the minimum value of CR should be 0.7 or higher, which justifies the quality of a latent variable, which is our case (Appendix E).

Concerning the discriminant validity, Appendix F lists the crossloading allowing us to verify that the items belonging to a construct do not contribute significantly to another construct present in the model. The approach proposed by Fornell and Larcker (1981 [77]) to estimate this validity specifies that a factor's AVE should be higher than its squared correlations with all other factors of the model acquired. However, this approach lacks performance compared to the heterotrait-monotrait ratio of correlations (HTMT) approach of Henseler and *al.* (2014 [79]). Benitez and *al.* (2020 [80]) also recommend mobilizing the HTMT approach in IS research.

This approach specifies that the entirety of the corresponding indices must be less than 0.85 in order to ensure that the concepts mobilized in the model are empirically distinct. This method is verified to ensure discriminant validity (Appendix G).

Finally, the overall model fit indices (calculated using Amos software version 26, n=215) performed on the model's latent variables are globally satisfactory $\chi^2=405.37$; $\chi^2/df= 1.859$; GFI=0.861; AGFI= 0.825; RMSEA= 0.063 CI_{90%RMSEA} [0.054, 0.073]; NFI=0.928; IFI=0.965; TLI=0.959; CFI = 0.965.

4.4 Data analysis and research results

The hypotheses tested concern sites A (+ +) and D (- -), i.e., the most hospitable versus the least hospitable version of the website. The sample size for these analysis is therefore n= 114. In order to facilitate the presentation of results, we will first look at the direct effects of hospitality on approach and avoidance behaviors (H1 and H2) in section 4.4.1. The effects of the mediating role of affective reactions on the relationship between hospitality and approach and avoidance behaviors (H3 and H4) will be studied thereafter, in section 4.4.2. Finally, the specific effects of each of the dimensions of hospitality (B + - and C - +) compared to sites A (++) and D (- -) will be discussed in a third step, in section 4.4.3. We will therefore consider the entire sample in this last section (n= 215).

4.4.1 Study of direct effects (Hypotheses 1 and 2)

The table 3 (end of the article) represents a summary of the independent sample T-tests used to verify hypotheses 1 and 2. These tests were performed between the two extreme versions of the sites. The participants who were assigned to cell A (+ +, n=61), i.e., the hospitable site ($\bar{x}= 0.336$, SD=0.826), compared to the participants who were assigned to cell D (- -, n=53), i.e., the inhospitable site ($\bar{x}= -0.360$, SD =1.052), let appear a significant difference with regard to

the level of approach behavior towards the site ($t= 3.952$, $\text{sig.}<0.001$). Hypothesis 1 is thus validated. Regarding avoidance behaviors, participants in cell A ($\bar{x}= -0.252$, $\text{SD}=0.861$), compared to the participants in cell D ($\bar{x}= -0.206$, $\text{SD}=1.006$), does not indicate a significant difference ($t = -0.258$, $\text{sig.} = 0.797$). The level of avoidance behaviors remains more or less the same, whether the site is hospitable or not: hypothesis H2 is therefore not validated

4.4.2 Study of mediations effects (Hypotheses 3 and 4)

The table 4 summarizes the main information on the effects of mediation. These can be direct (significant link between X and Y, in the presence of the mediating variable), and/or indirect (product of a x b). The total effect is also calculable and then corresponds to the product (a x b) + c'. The information presented in the table 4 has been computed using the PROCESS macro by Hayes (2013 [81]) and more specifically model 4 of this macro, which is perfectly adapted to the conceptual framework we wish to test here. This analysis was performed between the two extreme versions of the web sites (A, ++ and B, - -).

The study of the mediating role played by positive-valued affective reactions (H3a, fullness and H3b, pleasure) on the virtual hospitality - approach behavior relationship reveals the existence of indirect effect relating to fullness (H3a) and pleasure (H3b). Indeed, the link between hospitality and these two mediators is significant (a) as well as the link between these mediators and approach behaviors (b). Moreover, a total mediation appears. To specify the type of mediation (competing or complementary), it is necessary to study the sign of the product a X b X c' (Zhao and *al.*, 2010 [82]). The latter being positive for the two hypotheses, mediation is therefore complementary: these mediators are relevant in the theoretical framework mobilized, but others could be investigated.

The hypotheses concerning the mediation effects of negative-valued affective reactions (H4a and H4b) are not validated. Table 4 shows no direct, indirect or total effect. These results, which run counter to the hypotheses initially formulated, will be discussed later.

4.4.3 Specific contributions of the dimensions of hospitality (post-hoc tests)

The proposed study protocol also makes it possible to see the specific contribution of each dimension of virtual hospitality: reciprocity on site B (+ -) and entertainment on site C (- +), compared to hospitable (A ++) and inhospitable (D - -) websites. For this purpose, post-hoc tests were mobilized. When the variances are homogeneous, the Tukey test was used. This test “uses the Studentized range statistic instead of the F value to test all possible mean differences (i.e., all pairwise comparisons)” (Braver and *al.*, 2003, p.29 [83]) and is adapted to the number of comparisons we wish to make. In case of heterogeneous variances (approach behaviors and fullness), the Games-Howell post-hoc test has been used since it is adapted to this specific case. The results of the post-hoc tests are presented in table 5, at the end of the article.

Regarding positive reactions (approach behavior and positive affective reactions), when only one of the dimensions is present (B + - or C - +), the approach behaviors show logical results (factor scores close to 0, unlike sites A and D). These elements show a limited contribution of each of the dimensions of hospitality taken individually, although some significant results appear. Removing entertainment elements (B + -) from a hospitable website (A + +) also reveals a significant gap in terms of fullness. Concerning the pleasure reaction, adding entertainment elements (C - +) to an inhospitable site (D - -) also shows a significant difference.

Negative reactions (avoidance behavior and negative affective reactions) show different results. The mere presence of the reciprocity dimension (B + -) generates more avoidance behaviors

compared to a hospitable site (A + +) or an inhospitable site (D - -). Negative-valence affective reactions generally do not show significant differences, regardless of the site considered. It should be noted that the highest level of oppression concerns the site integrating only elements of reciprocity (B + -), revealing a significant difference with the hospitable site (A + +). These rather surprising results can be explained by the complexity of the concept of hospitality, particularly its reciprocity dimension, which can potentially lead to negative reactions. We will develop these results in the discussion.

5. Discussion

While marketing is evolving towards more human and less commercial values (Kotler and *al.*, 2010 [1]), e-commerce practices remain mostly rooted in a transactional approach (Palvia, 2009 [84]). In this article, the concept of hospitality is proposed as a vector to anchor digital strategies in these human values. A transposition of the concept of hospitality to digital spaces and more specifically to e-commerce sites is proposed. Our study shows the role of the hospitality of an e-commerce website in the affective reactions (with positive and negative valence) felt by internet users as well as approach and avoidance behaviors towards the site.

The results show a definite advantage in creating e-commerce sites based on a hospitality model, although some rather surprising data deserves discussion and further study. Whether from an academic or managerial point of view, the concept of hospitality offers many perspectives, both in the field of e-commerce and in IS in general. These different points will be dealt with in this discussion.

5.1 Discussion of findings

The study carried out shows that a hospitable website generates more positive-valence emotional reactions and approach behaviors than an inhospitable site. The results also show a

limited contribution when each of the dimensions of the concept are integrated individually: The unique presence of the reciprocity or entertainment dimension has little effect on affective reactions or approach-avoidance behavior.

The study of the direct effects of hospitality on negative-valence affective reactions as well as avoidance behaviors show surprising results since they are not significant. In other terms, designing an e-commerce site as a hospitality space does not reduce the level of negative-valence affective reactions or avoidance behaviors. We also observed that a website integrating only elements related to the reciprocal dimension of hospitality generates more avoidance behaviors than an inhospitable website.

These results, which are somewhat surprising, can be explained by the nature and complexity of the concept of hospitality. Because of its strong relational and reciprocal anchoring, the concept of hospitality offers many advantages, especially in the context of relationships mediated by the screen. However, in order to achieve this social proximity, the host sometimes has to demonstrate mothering. To this end, King (1995 [13]) suggests that the hospitality relationship is successful when the host acquires sufficient information about guests, which can go as far as mothering them. Therefore, the host requires the provision of numerous tools enabling them (the company, through its site) to get to know their guests (the clients) better. In the context of relationships in a digital environment, some internet users may perceive this as somewhat excessive: this strong proximity, relayed by social, mothering or entertainment elements, is unusual on these digital interfaces. This potential incongruence between technology, which is by nature cold and impersonal, and the way it is made warm through the concept of hospitality can therefore generate more contrasting reactions.

One argument may explain this ambiguity: this form of mothering specific to the concept of hospitality (King, 1995 [13]) could be perceived as oppressive and therefore generate negative effects. This can also be observed in the fact that site B (+ -), where only elements of reciprocity are present, shows a greater and more significant level of avoidance and oppressive behavior than the hospitable site (A + +). The latter integrates both reciprocity and playful elements. The contribution of playful elements could then counterbalance the potential negative effects of the sole presence of reciprocity elements.

Beyond the complexity of the concept of virtual hospitality, which could lead to both positive and negative reactions as we have seen, the results relating to the hypotheses concerning the direct effects of hospitality on approach behaviors (H1, which has been validated) and avoidance behaviors (H2, which has not been validated) question us about the nature of approach and avoidance behaviors. Are we faced with a unique and bipolar concept, whose two poles (approach and avoidance) are opposite on the same continuum, or should we consider approach and avoidance behaviors as two distinct concepts, thus explaining that a site's virtual hospitality can generate both approach and avoidance behaviors? In other words, since it would be quite possible to experience both positive and negative emotional reactions at different points in the navigation, it could be envisaged that the site generates both approach and avoidance behaviors.

5.2 Implications for research and practice

This research has different implications, both theoretical and managerial. From a theoretical point of view, a synthesis relating to the concept of hospitality from different disciplines in the human and social sciences is proposed. The second theoretical contribution of this research lies in the criticism of the literature on hospitality in IS. Indeed, this literature identifies a dimension

globally linked to ease of navigation (Ciborra, 2002 [16]; Iliachenko, 2006 [18]; Mani, 2012[19]; Piccoli and *al.*, 2004 [17]), but sets aside the dimensions of reciprocity and entertainment, which, as we have seen, are at the heart of the concept of hospitality. The third theoretical contribution then lies in proposing a new conceptualization of hospitality around these three dimensions and applying it specifically to the case of e-commerce sites.

By integrating affective reactions at the heart of the model, this research also enriches the literature on the roles of affective reactions in the adoption of e-commerce where affective reactions are described as playing an important role (Ethier and *al.*, 2006 [9]; Pappas and *al.*, 2016 [10]). In line with various works applied to online commerce (Allard and *al.*, 2020 [6]; Ben-mimoun and Poncin, 2015 [61]; Darke and *al.* 2016 [60]; Jiang and *al.*, 2019 [4]; Leong and *al.*, 2020 [62]; Ogonowski, 2014 [63]; Koponen and Rytty, 2020 [64]), this research shows how the characteristics of shopping sites can vary the level of consumer affective reactions.

This research also offers operational avenues for firms wishing to develop close relationships with their consumers. Although not exhaustive, the list of elements presented in Appendix A can be mobilized within the framework of e-commerce sites to make them more hospitable. Developing a site's hospitality can also respond to the need to stand out from the competition in the design of e-commerce websites, where the elements of differentiation are mainly found in the proposed offer (Bezes and Belvaux, 2012 [85]). The results presented in this research should also encourage managers to further develop the hospitality of websites insofar as they allow an increase in the emotional reactions with positive valence as well as approach behaviors. This research shows the advantages for professionals of developing relational strategies in an e-commerce context, where transactional aspects still seem to be in the majority. Thus, we encourage these professionals to rebalance the weight between transaction and relationship, so that they can anchor themselves in the values of the new forms of marketing.

However, this shift to a strategy based on relationships must be carried out with caution, especially with the concept of virtual hospitality, which is strongly anchored in human values. The results discussed show that the mothering characteristic of the concept of hospitality (King, 1995 [13]) could lead to avoidance behaviors. It would then be appropriate to increase the level of hospitality incrementally in order not to upset existing customers and seek the optimal level of hospitality, which can depend on many factors, related to both the characteristics of the target and the products / services offered. Another possibility would be to offer hospitality as an optional extra service, so that only consumers who want this strong social interaction can benefit from it. Thus, an adaptive design of the interface could be proposed thereby allowing the consumer to choose the level of hospitality he or she wants to enjoy.

5.3 Limitations and future research

The limitations and research directions that should be explored can be divided into two categories: those relating to refining the understanding of the behavior of the internet user in relation to the hospitality of an e-commerce website, and those relating to further exploring the mobilization of the concept of hospitality in other contexts and other IS.

The first limitation of this work was to have mobilized a factorial design based on the manipulation of the dimensions of hospitality. If the interest was to observe the specific contribution of each of the dimensions of the concept, this choice could generate a bias insofar as internet surfers having taken part in the study might find it curious that a website integrates, for example, only ludic aspects, without any form of reciprocity and vice-versa. It would then be more appropriate to vary the level of hospitality on all its dimensions simultaneously (a website with a low level of hospitality for example, with the three dimensions at a low level, and the same thing with the "medium" and "high" levels). This approach would then be conducive to better understanding the behavior of internet users using a hospitable website.

The second limitation relates to the lack of elements that can explain why a hospitable e-commerce website generates positive reactions (emotional and approach behaviors) while the level of negative reactions (emotional and avoidance behaviors) remains statistically similar. This can be explained by the design of the site, which was not developed by professionals in the field, but created in a laboratory for the specific needs of this study (see appendix A). This reveals a certain "amateurishness" in the design of the sites, which may explain why the most hospitable versions still show some negative reactions.

Also, some avenues of reflection were proposed in the discussion of our findings, with an emphasis on the integration of moderating variables in future research related to virtual hospitality. As an example, the previously mentioned notion of incongruence could give rise to inferences of manipulative intent (IMI) on a site integrating numerous elements of hospitality, the consequence of which would be to effectively generate negative behaviors. The IMI has already been studied in the context of the bricks-and-mortar distribution. The latter can indeed appear when the environment is incongruous (Lunardo and Mbengue, 2013 [86]). The integrity of the merchant and attitudes towards the atmosphere and the merchant are then evaluated negatively. These IMI have also been studied in the context of servicescapes (Lunardo and *al.*, 2016 [87]).

Another variable could explain these results: the need for interactions, a concept developed by Dabholkar (1996 [88]). It has been shown, for example, that individuals with a strong need for social interaction will avoid using a self-service machine (Dabholkar, 1996 [88]). We can assume that an individual with a strong need for interactions will be more "at home" on a hospitable website given the strong human anchoring of the concept. On the other hand,

individuals with a low need for interaction could then display avoidance behaviors towards a hospitable website. These two variables then seem to us to be relevant research directions to refine the understanding of the behaviors of internet users within the framework of social interactions, in particular applied to virtual hospitality.

The fact that virtual hospitality is by definition strongly anchored in the humanization of a digital space, that individuals have different needs for social interaction (Dabholkar, 1996 [88c]) and that hospitality can lead the host to mother guests (King, 1995 [13]) and thus create a surplus of proximity/intimacy invites us to reflect on the degree of hospitality to be conferred on the information system. This level of hospitality could correspond to an inverted U-shaped curve, where too high a level would lead to avoidance behaviors. The difficulty would then lie in finding the optimal level, knowing that it may vary from one individual to another. The possibility of leaving the choice to the internet user of whether to have a modular interface according to the level of hospitality could prove to be a good compromise. In the same vein, since social and technological relationships are so different from one culture to another, the hospitality of an information system could then lead to different results depending on the country. Since the present research was conducted in France, future research could then focus on these intercultural differences.

Finally, beyond the application of the concept of hospitality in B2C e-commerce, it would seem relevant to mobilize the concept of hospitality in other contexts. In the context of e-commerce sites, the type of market could influence the results obtained here. Studies on non-merchant websites (institutional sites for example) or merchant websites in B2B or C2C contexts could lead to different results. The nature of the products sold (utilitarian versus hedonic) could also be studied. Beyond e-commerce sites, it seems relevant to us to mobilize the concept of

hospitality for other IS in order to further encourage their use and maximize the user experience. The context of mobile applications (Choi, 2016 [89]), or social commerce (Jiang and al., 2019 [4]) seem to be interesting in this perspective.

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Appendix A: *Examples of elements manipulated for each of the design dimensions and homepage of the website used.*

Dimensions	Virtual hospitality
Navigation	<ul style="list-style-type: none"> -A "human-sized" site with few links and essential information. -Navigation facilitated by the integration of search tools. -Personalization of the home page (design, modules to add / remove as the user wishes).
Reciprocity	<ul style="list-style-type: none"> -A virtual community to allow customers to communicate about the commercial offer (merchant), but also about various other subjects (non-merchant). -A members' area with a discussion space allowing consumers to communicate with each other and / or with the sales team. -A dedicated sales advisor who takes care of the customer personally. -An "about us" page presenting the sales team with photos and information. -Price transparency, with details of fees, charges, purchase prices, etc.
Entertainment	<ul style="list-style-type: none"> -Organization of games and contests -Quizzes are available, members can compare their scores.

Home page of the website used for the study¹

¹ Since the "navigation" dimension was not manipulated, the design of the four sites in this study was almost identical. For example, when the playful dimension was absent (site B, which only integrates reciprocity elements (+ -), the part on the right, in green "espace concours et jeux" (contest and game area) on the main page as well as the "quiz" link in the menu were simply absent. The photos used on the websites are free of copyright.



Accueil | Boutique | Vetit Blog | Forum | Qui sommes-nous ? | Contact | Quiz

Recherche

Tous les contenus
Rechercher

Espace Membres

Devenir membre
Se reconnecter
Votre nom (ou pseudo) :
Votre code secret
Envoyer
321 membres
Connectez :
(personne)

Cette semaine...



Vetistore, c'est 4 espaces pour vous servir

Espace BOUTIQUE	Espace COMMUNAUTÉ	Espace CONSEILS ET SERVICES	Espace CONCOURS ET JEUX
<p>Accès direct boutique</p> <p>Une sélection de vêtements (homme et femme) ainsi que de nombreux accessoires !</p>	<p>Forum de discussion</p> <p>Venez discuter sur le forum avec les animateurs du site et les autres clients</p>	<p>Conseils personnalisés</p> <p>Un conseiller vous est dédié, c'est 100% gratuit et sans engagement !</p>	<p>Concours d'Hiver!</p> <p>Envoyez-nous votre photo sur le thème "tous à la neige". De nombreux lots sont à gagner !</p>
<p>Nos engagements</p> <p>Transparence absolue : nos prix sont détaillés. Livraisons et retours gratuits !</p>	<p>Le Vetit-Blog</p> <p>Entrez dans les coulisses de l'entreprise Vetistore et découvrez le quotidien de vos animateurs !</p>	<p>Restons en contact !</p> <p>Forum, email, téléphone ou encore Facebook, nous restons à votre disposition !</p>	<p>Quiz</p> <p>Participez à nos quiz et inscrivez votre nom dans le Hall d'honneur : 100€ à gagner chaque semaine !</p>

Vos produits préférés de la semaine dernière

The exemple of the Reciprocity dimension:

Member's area:²

² The "member area" allows you to log in. It also highlights the number of people who have joined this community (321 here) and allows you to see in real time the list of other customers or members of the site team who are connected in order to exchange with them.

Espace Membres

Se reconnecter

Votre nom (ou pseudo) :

Votre code secret

 321 membres

Connectés :
(personne)

Dedicated vendor system³ :

Nous envoyer un message

Je vous remercie de prendre le temps d'écrire ce message.


Qui s'occupe personnellement de moi chez Vessstore ? :

Votre nom (*):

Votre e-mail (*):

Motif de votre demande :

Votre message (*):



³ When a consumer wants to interact with the company, he does so through his regular salesperson who personally manages his relationship with the site. The customer then has the personal information of his assigned salesperson (first name, etc.). In this example of a contact form, in addition to the traditional elements (name, email address, subject of the request), the customer must specify the identity of his assigned salesperson so that the message reaches him directly.

Price transparency ⁴

Prix de vente Vetistore
39,90€
Ce prix inclut :
-Frais de conditionnement: 0,70€
-Frais de transport: 0,20€
-Taxes: 1,60€
-Charges : 2€
-Marge Vetistore : 15€
-Salaire pour les producteurs : 20,40€ / ou le fournisseur

Appendix B: Sample structure of the four cells

Variables		Sample								Population
		Site A (n=61)		Site B (n=49)		Site C (n=52)		Site D (n=53)		
		Size	%	Size	%	Size	%	Size	%	
Gender	Male	31	50.82	24	48.98	24	46.15	24	45.28	49%
	Female	30	49.18	25	51.02	28	53.85	29	54.72	51%
X ²		X ² = 0.081 Sig. = 0.776		X ² = 8.167e -6 Sig. = 0.776		X ² = 0.169 Sig. = 0.681		X ² = 0.293 Sig. = 0.588		
SCP	+	17	27.87	15	30.61	15	28.84	16	30.19	28%
	-	18	29.51	12	24.49	15	28.84	15	28.30	27%
	Inactive	26	42.62	22	44.90	22	42.32	22	41.51	45%
X ²		X ² = 0.219 Sig. = 0.896		X ² = 0.234 Sig. = 0.290		X ² = 0.163 Sig. = 0.922		X ² = 0.267 Sig. = 0.875		
Age	18-25	9	14.75	8	16.33	7	13.46	8	15.09	13%
	26-40	15	24.59	13	26.53	14	26.92	13	24.53	26%
	41-65	30	49.18	22	44.89	24	46.15	26	49.06	46%
	65+	7	11.47	6	12.24	7	13.46	6	11.32	15%
X ²		X ² = 0.830 Sig. = 0.842		X ² = 0.683 Sig. = 0.877		X ² = 0.108 Sig. = 0.991		X ² = 0.809 Sig. = 0.847		

⁴ For each product, the consumer has access to the composition of this price. In this example, we have the packaging costs, transport costs, taxes, charges, margin, salary for the producer / supplier.

Involvement in the product cat (factor score)	0.083	0.157	-0.188	-0.057	
ANOVA*	F (3, 211) = 1.282 ; Sig. = 0.281				
Online buying habits (factore score)	0.072	0.074	-0.058	-0.093	
ANOVA**	F (3, 211) = 0.442 ; Sig. = 0.723				

*Note: Post-hoc tests complete the ANOVA. The minimum sig value between each cell is 0.285.

** Post-hoc tests complete the ANOVA. The minimum sig value between each cell is 0.796.

Appendix C: Pre-tests of measurement scales mobilized

Variables	KMO Index	Bartlett test	% var. expl.	α
Fullness	0.800	<0.001	73.700	0.876
Pleasure	0.665	<0.001	76.900	0.848
Nervousness	0.642	<0.001	65.320	0.733
Oppression	0.736	<0.001	74.190	0.883
Approach behaviors	0.840	<0.001	83.870	0.950
Avoidance behaviors	0.760	<0.001	72.570	0.870
Involvement in the product cat.	0.860	<0.001	85.100	0.941
Online buying habits	0.820	<0.001	63.620	0.850

Appendix D: Psychometric qualities of the Virtual Hospitality Scale, mobilized for manip.

Checks⁵

Dimensions and Items	α	L	AVE	CR	KMO	Bartlett	Var. exp		
Entertainment									
I have a feeling that it is possible to have fun on this website.	0.881	0.893	0.744	0.928	0.862	<0.001	74.67%		
This website has a playful, fun side		0.879							
On this website, I have the possibility to relax		0.857							
This website offers me entertainment		0.819							
Reciprocity									
Vetistore is a company that cares about its customers.	0.874	0.869	0.731	0.915					
The staff of this website seems to be dedicated to its customers.		0.833							
Vetistore seems to be a sincere company		0.867							
I have the feeling that Vetistore is not trying to rip me off.		0.849							
Navigation									
This website is easy to use	0.837	0.903	0.756	0.903					
When I browse through this website, I can easily find the information I need.		0.878							
Navigation on this website is intuitive		0.825							

Fit Indices ⁶	
CFI	0.973
RMSEA	0.063
SRMR	0.042
GFI	0.986

Appendix E: Psychometric qualities of measurement scales, reliability and convergent

validity⁵

Scales	Items	KMO	Bartlett	Var. exp	α	L	AVE	CR
	On this site, it's warm	0.847	<0.001	85.95%	0.944	0.931	0.859	0.961

⁵ Indices calculated with the XLStat 2021 software, n=215

⁶ Indices calculated from a Confirmatory Factor Analysis performed with the JASP software version 0.14.1.0, n=215

Fullness (Lichtle & Plichon, 2014)	On this site, I am zen					0.908		
	On this site, I feel in harmony					0.933		
	On this site, I feel a pleasant sensation					0.936		
Pleasure (Lichtle & Plichon, 2014)	On this site, I'm happy	0.771	<0.001	91.45%	0.953	0.954	0.914	0.969
	On this site, I feel pleased					0.965		
	On this site, I am enthusiastic					0.950		
Nervousness (Lichtle & Plichon, 2014)	On this site, I'm angry	0.759	<0.001	89.55%	0.941	0.939	0.895	0.962
	On this site, I am irritable					0.964		
	On this site, I'm stressed out					0.934		
Oppression (Lichtle & Plichon, 2014)	On this site, I feel overwhelmed	0.876	<0.001	88.24%	0.954	0.940	0.882	0.967
	On this site, I feel imprisoned					0.945		
	On this site, I feel oppressed					0.944		
	On this site, I have the feeling of being locked up					0.925		
Approach (Deng & Pool, 2010)	I would enjoy visiting this website	0.887	<0.001	80.88%	0.940	0.932	0.809	0.932
	I like to spend much time browsing this website					0.868		
	I like this website					0.934		

	I would be satisfied with this website					0,888		
	I would have a positive attitude toward this website					0,871		
Avoidance (Deng & Pool, 2010)	I would try to leave this website as soon as possible	0.822	<0.001	71.34%	0.866	0,897	0,710	0.907
	I would avoid getting back to this website after I have left it					0,857		
	I want to avoid exploring or investigating this website					0,863		
	I would avoid any unplanned activity in this website					0,745		

Appendix F: Cross-loading⁵

-	Fullness	Pleasure	Nervousness	Oppression	Approach	Avoidance
Fullness_1	0.931	0.599	-0.331	-0.325	0.763	-0.433
Fullness_2	0.908	0.598	-0.324	-0.323	0.688	-0.364
Fullness_3	0.933	0.599	-0.315	-0.310	0.713	-0.348
Fullness_4	0.936	0.561	-0.304	-0.292	0.727	-0.375
Pleasure_1	0.627	0.954	-0.162	-0.141	0.640	-0.302
Pleasure_2	0.604	0.965	-0.163	-0.122	0.659	-0.242
Pleasure_3	0.593	0.950	-0.171	-0.134	0.639	-0.254
Nervous_1	-0.328	-0.200	0.939	0.783	-0.404	0.312
Nervous_2	-0.355	-0.170	0.964	0.826	-0.399	0.435
Nervous_3	-0.289	-0.125	0.934	0.896	-0.342	0.375
Oppression_1	-0.294	-0.091	0.850	0.940	-0.336	0.375
Oppression_2	-0.292	-0.094	0.817	0.945	-0.340	0.341
Oppression_3	-0.332	-0.130	0.827	0.944	-0.365	0.424
Oppression_4	-0.343	-0.200	0.827	0.925	-0.428	0.378
Approach_1	0.756	0.663	-0.382	-0.384	0.932	-0.446
Approach_2	0.684	0.643	-0.275	-0.274	0.868	-0.334
Approach_3	0.729	0.622	-0.355	-0.353	0.934	-0.389

Approach_4	0.651	0.544	-0.369	-0.362	0.888	-0.320
Approach_5	0.681	0.555	-0.436	-0.391	0.871	-0.340
Avoidance_1	-0.451	-0.283	0.423	0.426	-0.430	0.897
Avoidance_2	-0.367	-0.229	0.320	0.351	-0.362	0.857
Avoidance_3	-0.297	-0.242	0.351	0.323	-0.337	0.863
Avoidance_4	-0.208	-0.149	0.206	0.219	-0.186	0.745

Appendix G: HTMT calculation results⁷

-	Fullness	Pleasure	Nervousness	Oppression	Approach	Avoidance
Fullness	0.927					
Pleasure	0.404	0.956				
Nervousness	0.118	0.030	0.946			
Oppression	0.114	0.019	0.782	0.939		
Approach	0.609	0.457	0.162	0.154	0.899	
Avoidance	0.169	0.077	0.162	0.165	0.168	0.843

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⁷ Indicators calculated online: <http://www.henseler.com/htmt.html>

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Figures and tables:

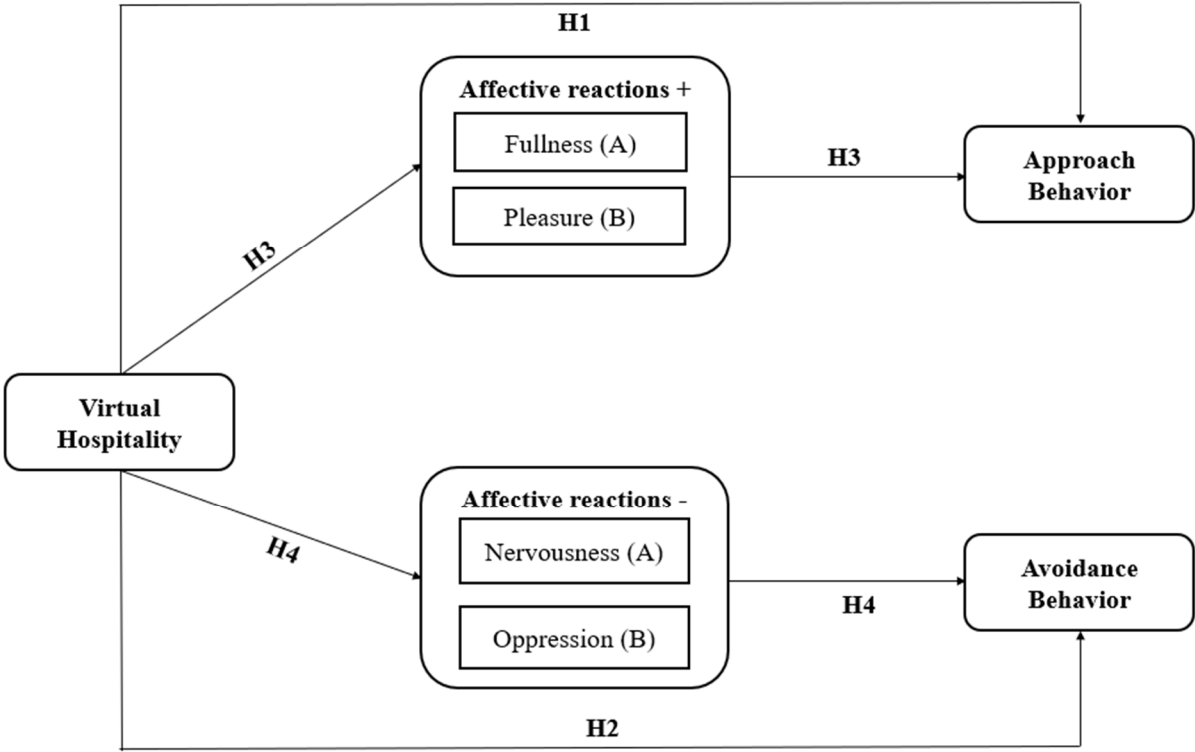


Figure 1: Proposed Conceptual Framework

When the internet user arrives on the site, a welcome message is sent by the sales team (presence of photos and first names of the members). This same team is presented on a dedicated page of the site, which also includes company news, whether offering commercial information or not. The home page contains few elements, allowing a simple and fluid navigation.

The visitor is then invited to register on the site. This registration will allow visitors to benefit from a dedicated salesperson who will personally take care of them during different visits. Thus, the visitor knows that they will be dealing with Karine, 32 years old, and not with "contact@vetistore.com". This registration also allows visitors to modulate the design of the site according to their desires and not to have all the elements systematically present. It reinforces the feeling of control on the site and thus of "being at home". Registration also allows visitors to use a real-time chat function to interact with the company's team but also with other connected customers.

During visits of the pages related to the products sold by the company, the user can discover customers' opinions on the products and advice from the sales team. In addition to seeing product prices, visitors can also have information on how this price was set (cost price, company margin, miscellaneous costs).

The interaction is also reinforced by the presence of a discussion forum integrated into the site and offering themes related to the commercial activity of the company (merchant), but also to various other subjects (non-merchant). Quizzes and games are also present on the site, allowing visitors to test their knowledge by comparing their scores with other customers and to have fun.

Box 1: Presentation of the Vetistore e-commerce website

Virtual hospitality dimensions	Homogeneity Test		ANOVA		(I) Website	(J) Website	\bar{x} Difference	Sig.
	Leven Stat	Sig.	F (3,211)	Sig.				
Reciprocity	1.446	0.231	16.878	<0.001	A (++) ; $\bar{x} = 0.350$	B (+ -) ; $\bar{x} = 0.376$	-0.026	0.998
						C (- +) ; $\bar{x} = -0.176$	0.525	0.004
						D (- -) ; $\bar{x} = -0.577$	0.927	<0.001
					B (+ -) ; $\bar{x} = 0.376$	C (- +) ; $\bar{x} = -0.176$	0.552	0.004
						D (- -) ; $\bar{x} = -0.577$	0.953	<0.001
	C (- +) ; $\bar{x} = -0.176$		D (- -) ; $\bar{x} = -0.577$	0.401	0.059			
Entertainment	0.769	0.512	16.118	<0.001	A (++) ; $\bar{x} = 0.456$	B (+ -) ; $\bar{x} = -0.284$	0.740	<0.001
						C (- +) ; $\bar{x} = 0.259$	0.197	0.603
						D (- -) ; $\bar{x} = -0.516$	0.972	<0.001
					B (+ -) ; $\bar{x} = -0.284$	C (- +) ; $\bar{x} = 0.259$	-0.544	0.007
						D (- -) ; $\bar{x} = -0.516$	0.232	0.507
	C (- +) ; $\bar{x} = 0.259$		D (- -) ; $\bar{x} = -0.516$	0.775	<0.001			
Navigation	1.584	0.194	1.904	0.130	A (++) ; $\bar{x} = 0.003$	B (+ -) ; $\bar{x} = -0.253$	0.255	0.465
						C (- +) ; $\bar{x} = 0.070$	-0.067	0.980
						D (- -) ; $\bar{x} = 0.161$	-0.158	0.792
					B (+ -) ; $\bar{x} = -0.253$	C (- +) ; $\bar{x} = 0.070$	-0.323	0.288
						D (- -) ; $\bar{x} = 0.161$	-0.414	0.104
	C (- +) ; $\bar{x} = 0.070$		D (- -) ; $\bar{x} = 0.161$	-0.091	0.956			

Table 2 : Manipulation checks results⁸

⁸ Indices calculated with the JASP software version 0.14.1.0, n=215. The first sign in the parenthesis corresponds to the manipulation of the reciprocity dimension, the second to the playful dimension. For example, site B (+ -) implies that the reciprocity dimension is present, but that the playful dimension is absent.

Manipulated Variables				Levene Test
Website	A	D		
Reciprocity	+	-		
Entertainment	+	-		
Sample size (n=)	<i>61</i>	<i>53</i>		
Mesured variables				
Approach behaviors	Mean:	<i>0.336</i>	<i>-0.360</i>	F (1, 112)
	Sig.:	< 0.001		= 7.712 Sig. = 0.006
Avoidance behaviors	Mean:	<i>-0.252</i>	<i>-0.206</i>	F (1, 112)
	Sig.:	0.797		= 3.072 Sig. = 0.082

Table 3: Summaries of T-tests conducted between websites A (+ +) and D (- -), performed to test hypotheses 1 and 2.⁹

⁹ Indices calculated with the JASP software version 0.14.1.0, n=114

-	Variables			Indirect effect (ab)							Direct effect (c')				Total effect (c)			
	Indep.	Mediator	Depend.	X → M (a)		M → Y (b)		Results										
	X	M	Y	Effect	Sig.	Effect	Sig.	Effect	LLCI	ULCI	Effect	Sig.	LLCI	ULCI	Effect	Sig.	LLCI	ULCI
H3a	Hosp.	Fullness	Approach	0.703	<0.001	0.706	<0.001	0.496	0.255	0.754	0,195	0.140	-0.065	0.455	0.691	<0.001	0.349	1.033
H3b	Hosp.	Pleasure	Approach	0.705	<0.001	0.641	<0.001	0.452	0.220	0.694	0.239	0.096	-0.043	0.521	0.691	<0.001	0.349	1.033
H4a	Hosp.	Nervous.	Avoidance	-0.352	0.057	0.304	<0.001	-0.107	-0.257	0.005	-0.008	0.961	-0.352	0.335	-0.115	0.520	-0.470	0.239
H4b	Hosp.	Oppress.	Avoidance	-0.377	0.052	0.332	<0.001	-0.125	-0.289	0.008	-0.010	0.953	-0.331	0.352	-0.115	0.520	-0.470	0.239

Table 4: Synthesis of Results for Mediation Effects (H3 and H4)¹⁰

/	Homogeneity Test		ANOVA		(I) Website	(J) Website	\bar{x} Difference	Sig.
	Leven Stat	Sig.	F (3,211)	Sig.				
Fullness	2.731	0.045	5.501	0.001	A (++); $\bar{x} = 0.365$	B (+ -); $\bar{x} = -0.181$	0.546	0.012
						C (- +); $\bar{x} = 0.051$	0.313	0.289
						D (- -); $\bar{x} = -0.302$	0.668	<0.001
					B (+ -); $\bar{x} = -0.181$	C (- +); $\bar{x} = 0.051$	-0.233	0.644
						D (- -); $\bar{x} = -0.302$	0.120	0.924
						C (- +); $\bar{x} = 0.051$	D (- -); $\bar{x} = -0.302$	0.353
Pleasure	0.313	0.816	5.789	0.001	A (++); $\bar{x} = 0.309$	B (+ -); $\bar{x} = -0.001$	0.310	0.324
						C (- +); $\bar{x} = 0.069$	0.240	0.537
						D (- -); $\bar{x} = -0.423$	0.733	<0.001
					B (+ -); $\bar{x} = -0.001$	C (- +); $\bar{x} = 0.069$	-0.070	0.983
						D (- -); $\bar{x} = -0.423$	0.423	0.113
						C (- +); $\bar{x} = 0.069$	D (- -); $\bar{x} = -0.423$	0.492
Approach	Leven Stat	Sig.	F (3,211)	Sig.	A (++); $\bar{x} = 0.336$	B (+ -); $\bar{x} = -0.092$	0.043	0.063

¹⁰ Results calculated with the PROCESS macro, n=114

						C (- +) ; $\bar{x} = 0.059$	0.277	0.378
						D (- -) ; $\bar{x} = -0.360$	0.696	0.001
	3.204	0.024	5.333	0.001	B (+ -) ; $\bar{x} = -0.092$	C (- +) ; $\bar{x} = 0.059$	-0.150	0.849
						D (- -) ; $\bar{x} = -0.360$	0.268	0.524
					C (- +) ; $\bar{x} = 0.059$	D (- -) ; $\bar{x} = -0.360$	0.418	0.158
Nervousness	Leven Stat	Sig.	F (3,211)	Sig.		B (+ -) ; $\bar{x} = 0.148$	-0.404	0.134
	2.221	0.087	2.048	0.108	A (++) ; $\bar{x} = -0.256$	C (- +) ; $\bar{x} = 0.065$	-0.321	0.299
						D (- -) ; $\bar{x} = 0.094$	-0.351	0.219
					B (+ -) ; $\bar{x} = 0.148$	C (- +) ; $\bar{x} = 0.065$	0.083	0.973
						D (- -) ; $\bar{x} = 0.094$	0.053	0.992
						C (- +) ; $\bar{x} = 0.065$	D (- -) ; $\bar{x} = 0.094$	-0.030
Oppression	Leven Stat	Sig.	F (3,211)	Sig.	A (++) ; $\bar{x} = -0.261$	B (+ -) ; $\bar{x} = 0.229$	-0.491	0.044
	0.921	0.431	2.537	0.058		C (- +) ; $\bar{x} = 0.003$	-0.264	0.473
						D (- -) ; $\bar{x} = 0.085$	-0.347	0.227
					B (+ -) ; $\bar{x} = 0.229$	C (- +) ; $\bar{x} = 0.003$	0.227	0.642
						D (- -) ; $\bar{x} = 0.085$	0.144	0.877
						C (- +) ; $\bar{x} = 0.003$	D (- -) ; $\bar{x} = 0.085$	-0.083
Avoidance	Leven Stat	Sig.	F (3,211)	Sig.		B (+ -) ; $\bar{x} = 0.344$	-0.596	0.004
	1.368	0.253	5.524	0.001	A (++) ; $\bar{x} = -0.252$	C (- +) ; $\bar{x} = 0.181$	-0.433	0.059
						D (- -) ; $\bar{x} = -0.206$	-0.045	0.994
					B (+ -) ; $\bar{x} = 0.344$	C (- +) ; $\bar{x} = 0.181$	0.163	0.803
						D (- -) ; $\bar{x} = -0.206$	0.551	0.013
						C (- +) ; $\bar{x} = 0.181$	D (- -) ; $\bar{x} = -0.206$	0.387

Table 5: Post-hoc test results¹¹

¹¹ Indices calculated with the JASP software version 0.14.1.0, n=215