



**Manchester  
Metropolitan  
University**

---

Jiménez-Barreto, J and Loureiro, S and Braun, E and Sthapit, E and Zenker, S (2021) Use numbers not words! Communicating hotels' cleaning programs for COVID-19 from the brand perspective. *International Journal of Hospitality Management*, 94. p. 102872. ISSN 0278-4319

---

**Downloaded from:** <https://e-space.mmu.ac.uk/629442/>

**Version:** Published Version

**Publisher:** Elsevier

**DOI:** <https://doi.org/10.1016/j.ijhm.2021.102872>

**Usage rights:** Creative Commons: Attribution-Noncommercial-No Derivative Works 4.0

Please cite the published version

<https://e-space.mmu.ac.uk>



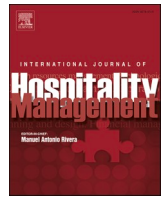
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Contents lists available at ScienceDirect

## International Journal of Hospitality Management

journal homepage: [www.elsevier.com/locate/ijhm](http://www.elsevier.com/locate/ijhm)

Research Paper

## Use numbers not words! Communicating hotels' cleaning programs for COVID-19 from the brand perspective

Jano Jiménez-Barreto<sup>a,\*</sup>, Sandra Loureiro<sup>b</sup>, Erik Braun<sup>c</sup>, Erose Sthapit<sup>d</sup>, Sebastian Zenker<sup>c</sup><sup>a</sup> Department of Finance and Marketing Research, Business Studies, College of Economics and Business Administration, Universidad Autónoma de Madrid, Madrid, Spain<sup>b</sup> Instituto Universitário de Lisboa (ISCTE-IUL) and Business Research Unit (BRUIUL), Portugal<sup>c</sup> Copenhagen Business School, Department of Marketing, Solbjerg Plads 3C, DK-2000, Frederiksberg, Denmark<sup>d</sup> Haaga-Helia Ammattikorkeakoulu - Haaga-Helia University of Applied Sciences, Pasila Campus, Ratapihantie 13, FI-00520, Helsinki, Finland

## ARTICLE INFO

## Keywords:

COVID-19

Hotel brand personality

Cleaning program

Numerical quantifiers

Verbal quantifiers

Dual-process theory

## ABSTRACT

After hotels in many countries were forced to close in government-imposed lockdowns during the COVID-19 pandemic, there is an inherent need to communicate how they deal with the coronavirus to motivate guests to visit. However, lack of knowledge about how to persuasively communicate about hotels' cleaning programs for COVID-19 can challenge the industry's survival. We investigated how hotels that position their brand as a particular personality (sincere vs. exciting) could benefit from different communication styles (inclusion of numerical vs. verbal quantifiers) when presenting their COVID-19 cleaning procedures. Study 1 explored tourists' central attitudinal responses toward hotels' cleaning programs. Study 2 demonstrated that sincere hotel brands would benefit from using numerical and verbal quantifiers to communicate their cleaning policies, whereas exciting hotel brands would benefit only from numerical quantifiers. Our results invite hotel managers to use their brand personality positioning to influence tourists' attitudes and intentions in a pandemic context.

## 1. Introduction

The coronavirus (COVID-19) pandemic is one of the most impactful events of the 21<sup>st</sup> century and its effect on the hospitality and tourism industry is tremendous (Zenker and Kock, 2020). On the supply side, the hospitality and tourism operations of many countries have mostly been shut down (Baum and Hai, 2020), with an estimated 75 million jobs at immediate risk (World Travel and Tourism Council, 2020). On the demand side, this pandemic will affect tourists' behavior while traveling, booking accommodation (Zenker and Kock, 2020), and consuming physical spaces (Wang and Ackerman, 2018). As the world adjusts to COVID-19, policymakers worldwide are progressively restoring individuals' mobility and re-opening hospitality and tourism facilities. In this new reality, hospitality and tourism managers need to re-comprehend tourists' beliefs and the main factors that drive hospitality consumption. Service quality attributes such as cleanliness and safety are becoming vital to understanding tourists' considerations when planning their next travel and accommodation bookings (Shin and Kang, 2020).

Marketing communications on how hospitality and tourism service providers deal with COVID-19 are an important aspect of achieving the *new normal*. Effectively communicating to tourists how hotels deal with COVID-19 is an essential marketing strategy for managers in the current coronavirus era. Some hotel chains are starting to communicate about their special cleaning programs to reassure customers that their hotels are effectively dealing with the coronavirus (see Table 1). However, determining the most effective communication style to shape guests' responses to hotels' cleaning policies remains unclear. Knowledge of how best to convey hotels' COVID-19 procedures could influence the success of the business. Our contention is that hotels could successfully manage their COVID-19 communications through understanding tourists' perceptions of the hotel brand personality and type of communication used about its cleaning programs.

Building on the literature on brand personality traits, persuasion theories, and dual-process theory, we investigated how hotels that position their brands as a particular personality (exciting vs. sincere) could benefit from certain communication styles when communicating their COVID-19 cleaning policies, depending on whether they use an

\* Corresponding author at: Department of Finance and Marketing Research, Business Studies, College of Economics and Business Administration, Universidad Autónoma de Madrid, Ctra Colmenar, C/ Francisco Tomás y Valiente, N° 5, ES 28049, Madrid, Spain.

E-mail addresses: [jano.jimenez@uam.es](mailto:jano.jimenez@uam.es) (J. Jiménez-Barreto), [sandramloureiro@netcabo.pt](mailto:sandramloureiro@netcabo.pt) (S. Loureiro), [ebr.marktg@cbs.dk](mailto:ebr.marktg@cbs.dk) (E. Braun), [erose.sthapit@haaga-helia.fi](mailto:erose.sthapit@haaga-helia.fi) (E. Sthapit), [sze.marktg@cbs.dk](mailto:sze.marktg@cbs.dk) (S. Zenker).

<https://doi.org/10.1016/j.ijhm.2021.102872>

Received 29 June 2020; Received in revised form 24 November 2020; Accepted 19 January 2021

Available online 2 February 2021

0278-4319/© 2021 The Authors.

Published by Elsevier Ltd.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

**Table 1**  
Real examples of hotels' claim regarding their COVID-19 cleaning programs.

Hotel brand	Examples of Hotels' cleanliness statements ( <i>source</i> )
Marriott International	"Marriott International Launches Global Cleanliness Council to Promote Even Higher Standards of Cleanliness in the Age of COVID-19" ( <a href="https://news.marriott.com/news/2020/04/21/marriott-international-launches-global-cleanliness-council-to-promote-even-higher-standards-of-cleanliness-in-the-age-of-covid-19">https://news.marriott.com/news/2020/04/21/marriott-international-launches-global-cleanliness-council-to-promote-even-higher-standards-of-cleanliness-in-the-age-of-covid-19</a> ).
Hilton	"Hilton Defining a New Standard of Hotel Cleanliness, working with RB/Lysol and Mayo Clinic to Elevate Hygiene Practices from Check-In to Check-Out." ( <a href="https://newsroom.hilton.com/corporate/news/hilton-defining-new-standard-of-cleanliness#">https://newsroom.hilton.com/corporate/news/hilton-defining-new-standard-of-cleanliness#</a> )
Hyatt	"Hyatt has proudly announced the Global Care & Cleanliness Commitment, which focuses on the safety and wellbeing of colleagues and guests in a COVID-19 world and beyond." ( <a href="https://www.hyatt.com/en-US/info/coronavirus-statement?ica mp=hy_cvstatement_jan2020_alertbanner_en">https://www.hyatt.com/en-US/info/coronavirus-statement?ica mp=hy_cvstatement_jan2020_alertbanner_en</a> )
Disney World group	"We have taken enhanced health and safety measures—for you, our other Guests, and Cast Members." ( <a href="https://www.disneyworld.eu/experience-updates/">https://www.disneyworld.eu/experience-updates/</a> )

analytical (communication with numerical quantifiers) or holistic (communication with verbal quantifiers) approach. This research enriches understanding of how tourists respond to (in)congruence between a hotel's brand personality and its marketing communication tactics in a pandemic context.

## 2. Theoretical framework

### 2.1. Communication styles: the use of numerical versus verbal quantifiers in the COVID-19 era

During the spread of COVID-19, global mass media are employing numbers and indicators to communicate to people whether the situation is catastrophic or whether a city or country has been affected more or less severely compared to others. The values they use are obtained through the quantification of the numbers of people who have been infected, died, or recovered from COVID-19 (e.g., *Los Angeles Times* (2020); *The New York Times* (2020), and *The Washington Post* (2020)). Prior investigations on communication have reflected on the use of numbers to emphasize the factuality of the news as a signal of precision and truthfulness (Merriam, 1990; Roeh and Feldman, 1984). Thus, we understand that individuals' processing of how the global COVID-19 situation is going will be fundamentally (though not exclusively) conditioned on processing numbers rather than other types of information provided by the mass media.

A plethora of comparative research in cognitive psychology has been conducted to observe individuals' cognitive evaluations and behaviors while they are in contact with information that differs in its narrative structure and pictorial design or contains numbers vs. verbal cues (Childers and Viswanathan, 2000; Evans and Stanovich, 2013; Kahneman, 2011; Viswanathan and Childers, 1997; Windschitl and Wells, 1996). Most of these studies contemplate the concepts and postulates of what have been described as dual-process theories. Dual process implies that, depending on contextual and individual factors, cognitive processing of information, stimuli, or experiences can be holistic or analytic (De Neys, 2017; Evans, 2008; Jun and Vogt, 2013). Differences that derive from holistic vs. analytic processing of information have been categorized as individuals' efforts, implementation of automatic or conscious evaluation, time spent analyzing the presented stimuli, appearance of affective biases, or in terms of the presence of numerical or verbal quantifiers (Liu et al., 2020a, 2020b). From prior work on cognition, we can deduce that the holistic processing of information is characterized by a top-down style of information integration in which judgments are assimilated within the context. By contrast, analytical processing is characterized by an accommodative bottom-up style in

which people focus on the object or information or stimuli and their attributes detached from the context (Nisbett et al., 2001).

Through the lens of dual-process theory, we applied the idea that when individuals make decisions involving verbal and numerical quantifiers, they process the meaning of these quantifiers differently. For example, past research argues that people require more cognitive effort to process numbers than verbal quantifiers (Childers and Viswanathan, 2000; Liu et al., 2020a). Explanations for this finding have been discussed in cognitive psychology through the consideration that people require more intuitive processing of information when verbal quantifiers are presented, whereas, with numerical quantifiers, people exert more analytical processing (Windschitl and Wells, 1996).

In the existing hospitality and tourism literature, persuasive hotel communication and its effect on tourist behavior have been analyzed from multiple perspectives. These include communications linked to sustainable behaviors (e.g., Hardeman et al., 2017), social responsibility programs (e.g., Ettinger et al., 2018), and communication styles in customer relationships (e.g., Berezan et al., 2016; Gretry et al., 2017). Prior studies also compare the effectiveness of different marketing communication formats (pictorial vs. textual) in attracting tourists to hotels (e.g., Bartosiak, 2020; Bufquin et al., 2020). However, the influence of numerical or verbal quantifiers in hotel communications on tourists' attitudes and intentions is still an unexplored aspect of hospitality and tourism research, although recent investigations in consumer behavior highlight the importance of discriminating between how individuals interpret numerical and verbal quantifiers in persuasive communications related to the consumption of products and services (e.g., Liu et al., 2019; Santana et al., 2020).

In light of this, we examined marketing communications used by hotels regarding their COVID-19 cleaning policy by comparing the use of numbers (e.g., "We disinfect rooms with a product that eliminates 99% of pathogens"; "We clean common areas 5 times a day") and the use of verbal quantifiers (e.g., "We disinfect rooms, eliminating any pathogens, after each guest's visit"; "We clean common areas several times a day."). We propose that verbal quantifiers in a hotel's communication facilitate overall and contextual evaluations of how the hotel deals with COVID-19 and that the use of numerical information about the hotel's cleaning policy demands from individuals precise cognitive effort and conscious understanding. Along these lines, studies on dual process have found that individual decisions that use numerical information tend to be more accurate than those that rely on verbal processing (Peters et al., 2007). Thus, we propose that communications that contain verbal quantifiers should prime individuals for more holistic processing of hotel information regarding its COVID-19 cleaning program. In contrast, hotel communications that provide numerical quantifiers induce individuals to process the information analytically.

### 2.2. Hotel brand personality

Brand personality has been considered the conceptual basis through which academics and managers are encouraged to comprehend the transference of human characteristics to brands when building a closer relationship with consumers (Aaker, 1997). Brand personality is conceptualized as "a set of human characteristics associated with a brand" (Aaker, 1997, p. 347). Hence, consumers can evaluate brands in terms of personality traits. For instance, consumers might claim that X brand is exciting, Y brand is sincere, or Z brand is sophisticated. In essence, the psychological mechanism behind the paroxysm of the anthropomorphism of brands is the implication of self-congruity in the consumption sphere. It is important to note that self-congruity reflects a parallel between consumer self-concept and the brand personality that consumers experience in building consumer-brand relationships (Kim et al., 2005). Consumers tend to choose, like, and consequently maintain long-term relationships with brands that have images congruent with their views of themselves (Kim et al., 2005).

Aaker's seminal study (1997) established a generally applicable

framework of brand personality dimensions through the creation of a measurement scale. Reflecting upon the Big Five human personality model, Aaker (1997) proposed a brand personality scale with five dimensions: ruggedness, excitement, sophistication, competence, and sincerity. Following Aaker's postulates, further research on consumer behavior has argued that brand personality can be observed as a way to predict actions and behaviors inferred from advertising, product presentation or esthetics, and consumers' reviews or past experiences (Aaker et al., 2004; Sundar and Noseworthy, 2016). Current studies on consumer research observe brand personality as a potential moderator in the relationship between consumers' perceptions of products and their attitudinal and behavioral intentions (Sundar and Noseworthy, 2016). This approach implicates the use of brand personality as a contextual variable that can be manipulated rather than only measured.

Even though brand personality emerges from a good-consumption perspective, several authors have applied this construct to consumer services or experiences, including hospitality service-provider brands (Foroudi, 2020; Su and Reynolds, 2017) and tourist destinations (Kim and Stepchenkova, 2017). In hospitality and tourism research, brand personality has also been applied in studies that observed hotel brands (see Jani and Han, 2014; Lee and Back, 2010; Tran et al., 2013; Su and Reynolds, 2017). Following Aaker's (1997) model, studies on hotel brand personality have found antecedents and consequences of this construct. In particular, Tran et al. (2013) observed that tourists' imagery and perceived price were antecedents of hotel brand personality. In addition, hotel brand personality has been shown to affect perceptions of brand value, loyalty (Tran et al., 2013), satisfaction (Jani and Han, 2014), brand choice (Su and Reynolds, 2017), and tourists' trust in the hotel brand (Lee and Back, 2010). Overall, the limited research on brand personality when analyzing hotel brands demonstrates that the multiple roles this construct can have in relation to tourists remain unknown.

For our study, brand personality acquires an important role in connection with the hotel brands' marketing communication style. Hotels that position their brand as a certain personality trait can evaluate which communication style (holistic with verbal quantifiers vs. analytic with numerical quantifiers) improves or limits their capability to influence tourists' positive responses toward the hotel brand. We followed the arguments of prior literature that suggests that two (sincere and exciting) of the five dimensions of Aaker's brand personality model capture the majority of variance in personality ratings across individual and cultural contexts (Aaker et al., 2004; Sundar and Noseworthy, 2016). Applied to our research context, *sincere* hotel brands can be considered warmer, more realistic, and honest in what they communicate as values for tourists, for example when Kimpton hotels created a sincere brand through their "new in town" campaign (Tran et al., 2013, p. 331). In contrast, *exciting* hotel brands are associated with a younger spirit and viewed as possessing cultural vitality and capable of generating interest (Altschiller, 2000); an example is Hard Rock Hotels claim that customers will "feel like a star" (on [Hard Rock Hotels, 2020](#) website below the booking section).

### 2.3. Hotel brand personality and the use of quantifiers when communicating the hotel's COVID-19 cleaning program

Past research suggests that a brand can benefit from a high degree of congruence between its personality and the type of marketing tactic used (Maille and Fleck, 2011). This also includes when a brand is supporting its marketing tactics in incongruencies, insofar as its personality trait permits unexpected and surprising marketing tactics (Sundar and Noseworthy, 2016; Luffarelli et al., 2019). However, these studies did not contemplate a context in which consumers are considering whether to use a brand's services after a pandemic.

In a normal consumption context, the expected theoretical proposition is based on the argument that a *sincere* hotel brand will benefit from using numerical quantifiers in its marketing communications. This is

because the use of numbers in messaging (by a sincere source) is a congruent way to demonstrate that what is communicated by the brand can be measured and quickly confirmed by consumers (Aaker et al., 2004; Sundar and Noseworthy, 2016). In contrast, an *exciting* hotel brand may benefit equally from both communication styles—numerical and verbal—because such a personality supports more flexibility in terms of surprising others with incongruent and asymmetrical presentations, communications or performances (Aaker et al., 2004; Luffarelli et al., 2019; Sundar and Noseworthy, 2016). However, the main criticism we can assert about these theoretical considerations is that we can only predict these congruent relationships between brand personality and type of communication (using numerical or verbal quantifiers) in a normal (i.e., non-pandemic) consumption context.

Consequently, to understand the effect of brand personality and the use of quantifiers on tourists' attitudes and intentions when hotels are communicating their cleaning programs to combat a pandemic, we base our argument on persuasion theories and an understanding of how people process informational cues in contexts with high uncertainty and personal risk. Literature that analyzes consumption in normal contexts points out that if the communication uses quantitative appeals, such as numerical quantifiers, these will enhance persuasion and may cause message recipients to focus more on peripheral information cues, such as the source's credibility or the degree of aesthetic detail included in the information (Witt, 1976; Yalch and Elmore-Yalch, 1984). The peripheral route requires less cognitive work because it is focused on the informational cues that individuals use to assess information rapidly and acquire particular attitudes and performance behaviors (Petty et al., 1981). This mechanism means that in the presence of numerical quantifiers, individuals may first process the personality of a hotel brand rather than the details of a particular brand message.

However, following the elaboration likelihood model (ELM) (Petty et al., 1981), our argument is reversed here, as we are analyzing an extreme consumption context in which tourists' health is at risk. We suggest that when the information presented is personally relevant, such as how hotels are dealing with COVID-19 risks, the processing of such communications is thought to occur via a central route (Yalch and Elmore-Yalch, 1984). This central route requires diligent consideration of informational factors, such as the relevance and strength of the arguments communicated (Petty et al., 1981). With this in mind, we propose that tourists will carefully and analytically process hotels' information regarding their COVID-19 cleaning programs. However, some factors that involve the source and its signaling power—in our case, hotel brand personality—may produce different influences in tourists' processing of numerical or verbal quantifiers in communications regarding virus-related issues (Yalch and Elmore-Yalch, 1984). In particular, we contemplate that sincere hotel brands can balance the effects of using numerical or verbal quantifiers on tourists' attitudes and intentions to visit the hotel via the signaling value of being a trustfully and reliable firm, even in a risky consumption context.

Following this stream of research, we propose that a sincere hotel brand personality can drive tourists' elaboration of a more peripheral route than can an exciting brand personality when processing a COVID-19 cleaning communication. As the sincere brand personality is grounded in an honest and predictable relationship with consumers (Aaker et al., 2004; Sundar and Noseworthy, 2016), tourists can use this source cue to simplify the numerical and verbal processing of communication presented to them. On the contrary, when positioning a hotel with an exciting brand personality founded on being surprising and unpredictable within a consumer-brand relationship (Aaker et al., 2004; Sundar and Noseworthy, 2016), tourists will be forced to activate central-route processing, as their decisions about whether to visit the hotel directly endangers their life, requiring a higher level of involvement to analyze the information presented. Thus, numerical quantifiers would be expected to be more persuasive than verbal quantifiers for hotels with an exciting personality, as the numbers would be processed not only as more factual, measurable, and concrete informational cues (Liu et al.,



2020a, 2020b), but also as a signal of precision and truthfulness (Merriam, 1990).

In summary and following prior literature that links the ELM and the use of numerical and verbal cues to communication persuasiveness (Liu et al., 2020a, 2020b; Yalch and Elmore-Yalch, 1984), we propose that, in this situation of global tension surrounding the COVID-19 pandemic, exciting hotel brands will need to supplement their perception as unpredictable with concrete information about how they are dealing with this global health challenge to influence tourists attitudinal and intentional responses toward hotels. In contrast, we propose that sincere hotel brands will benefit equally from numerical and verbal quantifiers when communicating their cleaning programs, as their sincere personality perceptions will balance the effect of the type of communication used. Hence, sincere personalities are expected to not be penalized by being less concrete (using verbal quantifiers) in their communications. More formally, we present the following hypotheses:

**H1a.** There will be a significant interaction between the brand personality and communication style of the COVID-19 cleaning program for tourists' attitudes toward the hotel brand, such that an exciting brand will benefit more from the use of numerical quantifiers, whereas a sincere brand will benefit equally from the use of numerical and verbal quantifiers.

**H1b.** There will be a significant interaction between brand personality and communication style of the COVID-19 cleaning program for tourists' intention to visit and recommend the hotel, such that an exciting brand will benefit more from the use of numerical quantifiers, whereas a sincere brand will benefit equally from the use of numerical and verbal quantifiers.

### 3. Methods

Our research program is based on a multimethod structure that includes two studies in a qualitative–quantitative sequence. In Study 1, through visual elicitation, the grounded theory approach, and a computerized psycholinguistic technique, we sought to explore tourists' cognitive processing and attitudes about hotels' communications about their COVID-19 cleaning program. In Study 2, we developed an experiment to determine whether the manipulation of hotel brand personality (sincere vs. exciting) and the use of numerical vs. verbal quantifiers affected tourists' attitudinal and intentional responses toward the hotel. The triangulation derived through the multimethod approach, as well as the use of two different online panels of participants (Amazon Mechanical Turk and Prolific), allowed us to present a broader analysis of tourists' perceptions and processing of hotels' communications about COVID-19 precautions.

#### 3.1. Study 1. Online elicitation techniques to examine tourists' evaluations of hotels' COVID-19 cleaning programs

The main goal of Study 1 was to understand how tourists respond and cognitively process hotels' information regarding their COVID-19 cleaning programs. We observed tourists' attitudes toward the hotel and their cognitive processing of the cleaning programs in multiple scenarios, which compared (a) hotel brand personality (exciting vs. sincere) and (b) either numerical or verbal quantifiers used by hotels to communicate their cleaning procedures. Hence, we proposed a 2 (hotel brand personality: sincere vs. exciting)  $\times$  2 (cleaning program narrative: numerical vs. verbal quantifiers) experimental between-subjects design. For each scenario, we created visual stimuli through texts that simulated participants' encounters with a fictional hotel and its COVID-19 cleaning protocols. Visual elicitation techniques through a set of displayed texts, images, or videos permit researchers to observe participants' motivations, opinions, beliefs, and emotions concerning the topic under study (Coulter and Zaltman, 2000).

#### 3.1.1. Design and procedure

For Study 1, we recruited 80 participants located in the U.S. and enrolled in Amazon Mechanical Turk (the fee paid per participant was \$1.05; the age range was between 19 and 60 years,  $M_{age} = 37$  and  $SD_{age} = 9.99$ ; 38% were female; 44% had studied at university; mean income per year after taxes was \$30,001–\$35,000). To ensure the high quality of participants' narratives, we conducted a data screening analysis of each response before payment.

Within each scenario, we randomly presented participants with a brand description of a hotel (called the Holton Hotel; Appendix A). The brand descriptions referred to the hotel as exciting or sincere. The participants then read the hotel's statement about its COVID-19 cleaning program; the statements varied based on whether they used numerical or verbal quantifiers. After each elicitation scenario, we presented an open-ended question in which participants described their impressions of and opinions about the hotel and its cleaning program: "Please explain in detail what your opinion is about the Holton Hotel and its procedures against coronavirus." In addition, to test hotel brand personality manipulation, we adapted the measurement of sincere and exciting brand personality from prior research (Sundar and Noseworthy, 2016). Hence, we included a question in which participants evaluated the degree to which the hotel represented sincere (sincere, wholesome, and sentimental;  $\alpha = .76$ ) or exciting (exciting, unique, and young;  $\alpha = .83$ ) personality traits using a 7-point Likert scale (1 = Not at all; 7 = To a great extent). Our perspective on the measurement of brand personality using the sincere and exciting dimensions is grounded in the idea that these two traits capture the majority of variance in brand personality ratings (Aaker et al., 2004; Sundar and Noseworthy, 2016).

The results indicate that participants presented with a sincere hotel brand personality rated the Holton Hotel as more sincere ( $M = 5.48$ ,  $SD = .72$ ) than did those with the exciting hotel brand condition ( $M = 4.00$ ,  $SD = 1.13$ ;  $t(80) = 6.90$ ,  $p < .001$ ). Conversely, participants presented with the exciting hotel brand condition rated the Holton Hotel as more exciting ( $M = 5.99$ ,  $SD = .60$ ) than did those presented with the sincere brand condition ( $M = 4.45$ ,  $SD = 1.34$ ;  $t(80) = 6.82$ ,  $p < .001$ ). Overall, we obtained preliminary evidence of the manipulation effectiveness of hotels' brand personalities.

#### 3.1.2. Data analysis

Data analysis was structured in two phases. First, using the grounded theory approach, we coded each participant's testimony, which allowed us to theoretically identify central elements of tourists' attitudes toward the hotel and its COVID-19 cleaning program. A grounded theory approach is a qualitative method that uses a systematic set of processes to inductively develop a theory about a phenomenon (Strauss and Corbin, 1990). Building on Strauss and Corbin (1990), we performed three steps for our grounded theory approach. First, we examined the collected data to develop a broad understanding of it. Second, we reviewed participants' responses and listed the central attitudinal elements interacting with the hotel's communication. Third, we manually conducted open, axial, and selective coding (Table 2; Strauss and Corbin, 1990). Following Saldaña (2013), the coding outputs of each step (i. e., open, axial, and selective coding) were discussed among the research team through a dialogical intersubjectivity method until consensus was achieved.

In the second phase, we analyzed tourists' cognitive processing for each scenario using computerized text analysis based on a psycholinguistic approach to provide evidence of cognitive components contained in language on a word-by-word basis (Pennebaker et al., 2015). We conducted computerized text analysis using the Linguistic Inquiry and Word Count (LIWC) software. Analyzing each participant group's narrative through LIWC allowed detection of a category of psychological meaning regarding individuals' thinking styles (Tausczik and Pennebaker, 2010). According to LIWC's developments, the analytical thinking variable permits the researcher to distinguish between words in the individuals' narratives that are categorically linked to objective

**Table 2**  
Examples of codes indicating the main tourists' attitudes toward hotels' COVID-19 cleaning programs, Study 1.

Example participants' quotes about hotels' COVID-19 cleaning programs	Open coding (Line-by-Line Coding)	Subthemes (Axial Coding)	Main Themes (Selective Themes)
<b>Sincere hotel brand with numerical quantifiers on its COVID-19 cleaning program</b>			
"While the hotel has however put these measures in place, it can also do some more."; "There's no mention about wearing masks as a protection from potential spread by interaction/ brief encounters."; "The pure space procedure isn't clear."	"It can also do more"; "no mention about wearing mask"; "procedure isn't clear"	Lack of procedures against COVID-19	
"They have implemented a rigid cleaning schedule as well as air purification."; "I think that they are doing their best to keep the hotel clean."	"Rigid cleaning schedule"; "doing their best"; "keep the hotel clean"	Perceived professionalism	
<b>Sincere hotel brand with verbal quantifiers on its COVID-19 cleaning program</b>			
"The management should make sure there is social distancing."; "For instance, do they use HEPA filters to clean the circulating air? Or ultraviolet?"; "This description doesn't really say what they actually do to clean and eliminate pathogens."	"Make sure there is social distancing"; "do they use HEPA filters?"; "doesn't really say"	Lack of procedures against COVID-19	Perceived lack of procedures against COVID-19; perceived professionalism; and skepticism are the main attitudinal tourists' responses toward the hotel and its COVID-19 cleaning program.
"This hotel is going above and beyond for the safety of their clientele"; "I like that the hotel is so dedicated to maintaining a clean environment."	"Hotel is going above and beyond"; "I like the hotel"; "is so dedicated"	Perceived professionalism	
<b>Exciting hotel brand with numerical quantifiers on its COVID-19 cleaning program</b>			
"In my opinion, social distancing of 6 feet (preferably more) is most necessary."; "There is no mention of use of masks or gloves."	"Social distancing of 6 feet"; "is most necessary"; "no mention of use of gloves"	Lack of procedures against COVID-19	
"I think Holton hotel takes their	"Hotel takes their guests' health	Perceived professionalism	

**Table 2 (continued)**

Example participants' quotes about hotels' COVID-19 cleaning programs	Open coding (Line-by-Line Coding)	Subthemes (Axial Coding)	Main Themes (Selective Themes)
guests' health seriously and uses new and innovative techniques."; "I applaud the Holton Hotel's effort at taking an active stance toward fighting COVID-19."	seriously"; "uses new and innovative techniques"; "I applaud the Holton Hotel's efforts"		
"If hospitals can't even do that, I'm not sure that I trust that a hotel has the ability to do that."; "It all sounds well and good, but I'm not naive enough to believe any of it."	"I'm not sure I trust that hotel"; "I'm not naive enough to believe any of it"	Skepticism	
<b>Exciting hotel brand with verbal quantifiers on its COVID-19 cleaning program</b>			
"These procedures do not seem very effective."; "Does not address any surfaces that may have been touched or contaminated."	"Procedures do not seem very effective"; "does not address"	Lack of procedures against COVID-19	
"I would stay because they seem trustworthy and they can do everything right."; "It cares for its clients by proving a safe space especially in this pandemic period."	"They seem trustworthy"; "it cares [about] its clients"	Perceived professionalism	
"I don't think there is any way to ensure all pathogens are removed from the air."; "The White House can't even keep people safe, so I doubt any hotel can."; "I feel the mention of pure space leads me to be skeptical about just how pure this could be."	"I don't think there is any way"; "I doubt any hotel can"; "pure space leads me to be skeptical"	Skepticism	

information processing or, by contrast, to interpersonal or subjective information processing (Pennebaker et al., 2014). Thus, for each experimental scenario, we could examine whether hotel brand personality and the use of numerical or verbal quantifiers in hotels' cleaning programs drove tourists' cognitive processing to be analytic or holistic. As a result of these two phases of analysis (the grounded theory approach and the computerized psycholinguistic technique), we discuss for each scenario a proposed cohesive view of tourists' attitudinal responses and information processing styles concerning hotels' COVID-19 cleaning protocols.

### 3.1.3. Results

The coding of participants' narratives concerning hotel brand personality and communication style revealed three main attitudinal responses by our study participants: (1) the need for stricter cleaning policies; (2) perceived professionalism; and an attitudinal response that only emerged in the visual scenarios concerning an exciting hotel brand with numerical and verbal quantifiers: (3) skepticism about the hotel (see Table 2).

Regarding the tourists' attitudes in favor of stricter cleaning policies, participants' argumentation focused on the idea that the Holton Hotel was missing several essential procedures when fighting COVID-19: "There's no mention about protection from the potential spread by interactions/brief encounters with other guests and hotel employees in the common space" (participant 4; sincere and numerical quantifiers group); "The management should make sure there is social distancing"; "For instance, do they use HEPA filters to clean the circulating air? Or ultraviolet?" (participants 14 and 15; sincere and verbal quantifiers group); "In my opinion, social distancing of 6 feet (preferably more) is most necessary" (participant 19; exciting and numerical quantifiers group); "Their focus on mainly the 'air pathogens' when cleaning the rooms does not address any surfaces that may have been touched or contaminated" (participant 36; exciting and verbal quantifiers group).

Hence, for some participants, the use of numerical or verbal quantifiers did not provide a complete and detailed explanation of all possible precautions and procedures available to ensure that the hotel would be free of pathogens. Even though some participants critiqued what they believed to be insufficient cleaning procedures, another group expressed—in all conditions tested—total confidence and a positive attitude toward the Holton Hotel's steps for dealing with COVID-19. This is described as the category of perceived professionalism: "I believe the Holton Hotel is taking COVID very seriously" (participant 8; sincere and numerical quantifiers group); "I would stay because they seem trustworthy and they can do everything right" (participant 70; exciting and numerical quantifiers group).

Additionally, we observed the emergence of another attitudinal response that appeared only for the exciting brand personality in both the numerical and the verbal quantifier conditions. This response is defined as skepticism about the hotel: "It sounds highly unbelievable. How can they claim that 99% of air pathogens are eliminated in their rooms?" (participant 49; exciting and numerical quantifiers group); "I feel the mention of pure space leads me to be skeptical about just how pure this could be" (participant 60; exciting and verbal quantifiers group).

Complementary to our coding analysis, we conducted a computerized text analysis using the LIWC 2015 software. LIWC sequentially counts words in the text file and compares them with built-in dictionaries or a custom dictionary. Using its built-in dictionaries, LIWC allowed us to detect for each experimental scenario whether brand personality and the use of numerical or verbal quantifiers in the hotel's COVID-19 cleaning program drove tourists' cognitive processing to be analytic or holistic. The software generated a quantitative output score range for each language dimension (0 = minimum; 100 = maximum), allowing comparison of the means of the scores obtained from each scenario.

As expected, an ANOVA test revealed a main effect of the type of quantifier on analytical thinking ( $F(1, 76) = 5.19; p < .05$ , partial  $\eta^2 = .02$ ), indicating that the participants processed more analytically stimuli with numerical quantifiers ( $M_{\text{numerical}} = 58.86; SD = 20.46$ ) than stimuli with verbal quantifiers ( $M_{\text{verbal}} = 46.19; SD = 24.68; p < .05$ ). Hence, in line with prior dual-process research (Liu et al., 2020a), while processing numerical quantifiers, participants were forced to engage in more analytic efforts to evaluate the hotel's cleaning program compared to those who viewed verbal quantifiers. In relation to priming analytic or holistic thinking, we did not observe a main effect for hotel brand personality ( $M_{\text{sincere}} = 54.14; SD = 23.93; M_{\text{exciting}} = 48.61; SD = 23.75; F(1, 78) = 1.06; p > .05$ ) or an interaction effect.

### 3.1.4. Findings of study 1

Study 1 indicated that tourists' attitudinal responses toward the hotel's COVID-19 cleaning program could vary from perceiving that the hotel is acting professionally and carefully to considering that the hotel is not utilizing some procedures available to achieve the cleanest environment possible for visitors. Although this polarity regarding how tourists formed their attitudes toward the hotel's cleaning programs can be understood as logical, the results indicate that when a hotel is positioning its offer as exciting tourists' opinions and beliefs about its COVID-19 preparations may convey skepticism. This attitude was not observed when tourists were presented with a sincere hotel brand. Thus, these findings reinforce our prior argument that an exciting brand personality could be penalized in a risky consumption situation, as its traits are congruently related as unpredictable and surprising. On the contrary, a sincere hotel brand personality could benefit from customers' perceptions that it is predictable and in line with a pre-communicated behavior, such that tourists find the hotel more trustworthy and reliable in terms of what it is doing to secure a clean environment for visitors.

Concerning our prior discussion about the ELM from persuasion theory, in study 1, it is not clear whether a sincere or exciting hotel brand personality motivates tourists to involve a central or peripheral route when processing information about the hotel's COVID-19 cleaning program. Instead, we confirmed that an exciting brand generated more skepticism than did a sincere brand among tourists. This could mean that a sincere personality acts as an informational cue that drives tourists' information processing through a peripheral route (Yalch and Elmore-Yalch, 1984), in which the hotel is perceived as more trustworthy and reliable. By contrast, an exciting hotel brand personality forces tourist to process carefully the information presented, particularly when they are considering high-risk consumption. Thus, a central route is required to form a certain attitudinal or intentional response toward the hotel and its cleaning program.

Interestingly, regardless of whether the cleaning protocols came from a sincere or an exciting hotel brand personality, in study 1 we did not observe any benefits from using either numerical or verbal quantifiers in their communications. However, the computerized psycholinguistic analysis revealed that tourists presented with numerical quantifiers processed the information more analytically than did tourists provided with verbal quantifiers. These results support the prior literature on dual-process theory that argues that numerical quantifiers require from individuals a higher focus on each element or attribute that confirms the informational piece communicated (Liu et al., 2020a; Nisbett et al., 2001); this is especially relevant when the information is linked to a personally relevant situation (Petty et al., 1981), such as securing your health and avoiding risk of infection.

### 3.2. Study 2. Communication styles about the COVID-19 cleaning program and hotels' brand personalities

We hypothesized that in an extreme consumption context in which tourists' health is at risk, numerical quantifiers would be perceived by individuals as a signal of precision, predictability, and truthfulness and tourists would process the information carefully by considering separately every informational cue presented to them. Consequently, numerical quantifiers might help an exciting hotel brand personality—that is, based more on generating unpredictable and surprising value for consumers—compensate for any perceived loss of trustworthiness.

Conversely, we also contemplated that sincere hotel brands would equally benefit from the use of both numerical and verbal communication, as having a sincere brand personality would encourage tourists to focus their perception on the source of information (the hotel brand) rather than on each informational unit presented, insofar as a sincere brand is capable of presenting itself in a trustworthy way to consumers (Sundar and Noseworthy, 2016), facilitating processing of the provided information.



3.2.1. Design and procedure

To test our hypotheses, for Study 2 we recruited 186 U.S. participants who are part of the panel for the crowdsourcing platform Prolific (the fee per participant was \$0.95; 50.6% were female; the age range was between 19 and 57 years, Mage = 34.28 and SDage = 11.59; 48.7% had studied at a university; mean income per year after taxes was \$25,001–\$30,000). Participants were randomly assigned to a 3 (hotel brand personality: sincere vs. exciting vs. control) × 2 (cleaning program narrative: numerical quantifiers vs. verbal quantifiers) between-subjects experimental design. The stimuli presented mimicked the conditions of Study 1 (see Appendix A); however, the control condition in Study 2 presented the Holton Hotel in a neutral way: “The Holton Hotel is now approaching big cities in the U.S. to establish a competitive accommodation offer to middle- and upper-class consumers.”

In addition, in Study 2, we substituted the open-ended question of Study 1 with a survey to measure tourists’ attitudes and intentions to visit and recommend the hotel; the dependent variables were measured using a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). The measurements of attitudes toward the hotel (“I believe the hotel has good serviceability”; “I would enjoy staying at this hotel”; “I think this hotel would look attractive to me”;  $\alpha = .91$ ) and the intentions to visit and recommend the hotel (“I would consider this hotel in future trips”; “I have strong intentions to visit this hotel in the near future”; “I would say positive things about this hotel to other people”; and “I would recommend this hotel if someone asks me”;  $\alpha = .88$ ), were adapted from Foroudi (2019).

3.2.2. Results

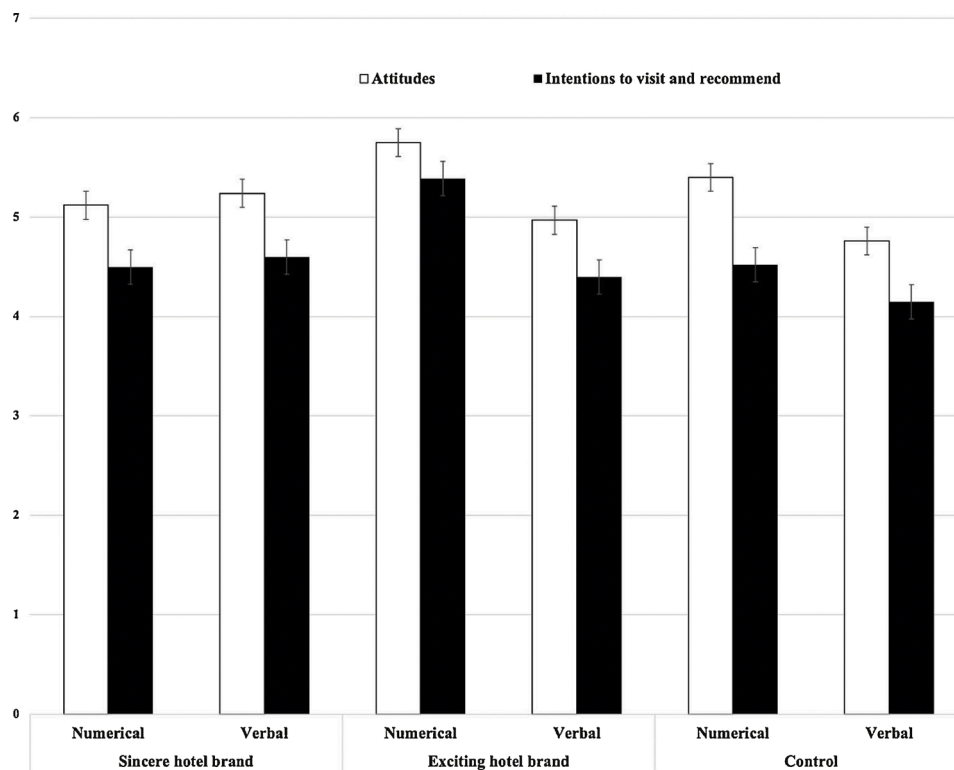
We tested the hotel brand personality manipulation by following the Study 1 procedures, including the control condition, to measure the degree to which each brand had sincere (sincere, wholesome, and sentimental;  $\alpha = .84$ ) and exciting traits (exciting, unique, and young;  $\alpha = .82$ ) on a 7-point Likert scale (1 = Not at all; 7 = To a great extent). Exciting and sincere brand personality measures were adapted from the

work of Sundar and Noseworthy (2016).

The results indicate that participants presented with a sincere hotel brand personality rated the Holton Hotel as more sincere ( $M = 5.02$ ;  $SD = 1.08$ ) than those who were presented with an exciting hotel brand ( $M = 4.54$ ;  $SD = 1.38$ ,  $F(1, 126) = 4.61$ ;  $p < .05$ ) and those presented with the control condition ( $M = 3.97$ ;  $SD = .96$ ;  $F(1, 114) = 29.93$ ;  $p < .001$ ). On the contrary, participants presented with the exciting hotel brand condition rated the Holton Hotel as more exciting ( $M = 5.26$ ;  $SD = 1.26$ ) than those presented with the sincere brand condition ( $M = 4.68$ ;  $SD = 1.14$ ,  $F(1, 126) = 7.18$ ;  $p < .05$ ) and the control condition ( $M = 4.13$ ;  $SD = .90$ ;  $F(1, 126) = 32.61$ ;  $p < .001$ ).

To test the predicted interaction between hotel brand personality and the use of numerical vs. verbal quantifiers while communicating the COVID-19 cleaning program (see Fig. 1), we ran a MANOVA on tourists’ attitudes and their intention to visit and recommend the hotel (Box’ test of equality of covariance matrices  $p > .05$ ; Levene’s test of equality of error variances for attitudes toward the hotel brand =  $F(5, 180) = 1.40$ ,  $p > .05$ ; and intention to visit and recommend  $F(5, 180) = 1.44$ ,  $p > .05$ ). There was a main effect of hotel brand personality (Wilks’s Lambda = .94,  $F(4, 358) = 2.57$ ,  $p = .039$ , partial  $\eta^2 = .03$ ) and type of quantifier used (Wilks’s Lambda = .96,  $F(2, 179) = 4.10$ ,  $p = .018$ , partial  $\eta^2 = .04$ ). For brand personality, the effect was significant on intention to visit and recommend ( $F(2, 180) = 4.38$ ,  $p < .05$ , partial  $\eta^2 = .04$ ) but not for attitude toward the hotel brand,  $F(2, 180) = 1.17$ ,  $p > .05$ ). For type of quantifier, the effect was significant for each dependent variable (attitude toward the hotel brand,  $F(1, 180) = 7.82$ ,  $p < .05$ , partial  $\eta^2 = .04$ ; intention to visit and recommend the hotel,  $F(1, 180) = 6.77$ ,  $p < .05$ , partial  $\eta^2 = .04$ ).

As predicted, there was a significant interaction between hotel brand personality and type of quantifier used for communicating the cleaning program (Wilks’s Lambda = .94,  $F(4, 358) = 2.73$ ,  $p = .029$ , partial  $\eta^2 = .03$ ). The interaction was significant for each dependent variable (attitude toward the hotel brand,  $F(2, 180) = 3.11$ ,  $p < .05$ ; intention to visit



Note. Error bars represent standard errors of the mean.

Fig. 1. Attitudes and Intentions results for Study 2.

and recommend the hotel,  $F(2, 180) = 3.90, p < .05$ ).

To better understand these interactions, we used a series of planned contrasts (see Table 3). Supporting our prediction, the sincere brand benefited equally from using numerical (*Mattitude toward the hotel brand* = 5.12; *Mintention to visit and recommend* = 4.51) and verbal quantifiers (*Mattitude toward the hotel brand* = 5.24;  $F(1, 56) = .19, p > .05$ ; *Mintention to visit and recommend* = 4.60;  $F(1, 56) = .14, p > .05$ ). In addition, the exciting brand benefited from numerical (*Mattitude toward the hotel brand* = 5.75; *Mintention to visit and recommend* = 4.97) rather than verbal quantifiers (*Mattitude toward the hotel brand* = 5.39;  $F(1, 68) = 9.93, p = .002$ ; *Mintention to visit and recommend* = 4.40;  $F(1, 68) = 12.53, p < .05$ ). The control condition of hotel brand personality also demonstrated that the communication of COVID-19 protocols produced a more persuasive result using numerical quantifiers (*Mattitude toward the hotel brand* = 5.40) than verbal quantifiers (*Mattitude toward the hotel brand* = 4.76;  $F(1, 56) = 4.35, p < .05$ ) on attitudes toward the hotel and no significant difference in persuasiveness regarding intention to visit and recommend the hotel (*Mintention to visit and recommend* = 4.51; *Mintention to visit and recommend* = 4.15;  $F(1, 56) = 1.44, p > .05$ ).

### 3.2.3. Findings of study 2

In Study 2, we extended the exploratory findings of Study 1 with an experiment. We evaluated tourists' attitudes and visiting intention while manipulating hotel brand personality (sincere vs. exciting) and hotel communication (using numerical vs. verbal quantifiers) about its COVID-19 cleaning procedure. The results demonstrate that after being presented with hotels' COVID-19 cleaning programs, tourists' attitudes and intentional responses toward the hotel were affected by hotels' brand personalities and by their use of numerical or verbal quantifiers in their messaging. Findings support our hypotheses (H1a and H1b), hotels that position their brand as sincere can benefit from the use of numerical or verbal quantifiers. In contrast, an exciting hotel brand personality can benefit only from the use of numerical quantifiers to positively persuade tourists through their communications of their cleaning protocols.

## 4. General discussion

We have introduced to hospitality and tourism literature the interplay that exists between hotel brand personality positioning and communication styles that use numerical and verbal quantifiers. In particular, we have framed our analysis in the context of COVID-19, demonstrating how certain hotel brand personalities (sincere vs. exciting) can benefit from adopting a numerical or verbal communication style when presenting their cleaning procedures to tourists. Our framework contributes first to hospitality and tourism literature by offering a pioneering examination of numerical and verbal quantifiers as formats for communication in the relationship between hotel brands and tourists. This approach amplifies prior studies' contributions to the understanding of hotel communication styles and formats of communication in the relationship with customers (e.g., Bartosiak, 2020; Berezan et al., 2016; Bufquin et al., 2020; Gretry et al., 2017). At the same time, we also expand the research on hotel brand personality and its influence on tourists' attitudes and visiting intentions. In contrast to prior studies in hospitality and tourism (Lee and Back, 2010; Tran et al., 2013; Su and Reynolds, 2017), but in line with studies in consumer behavior (Luffarelli et al., 2019; Sundar and Noseworthy, 2016), we have

manipulated brand personality as a contextual factor for analysis rather than measuring only its theoretical dimensions. We, therefore, offer a novel interpretation of how hotel brand personality can mitigate a crisis context, such as that of the post-COVID-19 era.

Between our two studies and in line with recent literature focused on understanding the new communicational paradigm for hospitality firms (Hu et al., 2021; Im et al., 2021; Shin and Kang, 2020), we have confirmed that during the COVID-19 pandemic era, hotels' communications about how they ensure clean and safe spaces are available for guests are an essential part of the tourist-hotel relationship.

Based on multimethod research that includes visual elicitation, a grounded theory approach, a computerized psycholinguistic analysis, and an experiment, we first explored a range of tourist attitudes that emerged while reading hotel communications about their cleaning programs. The qualitative findings in Study 1 indicate that hotels positioning their offers as exciting (vs. sincere) may elicit skepticism in tourists' opinions and beliefs about a hotel's COVID-19 cleaning procedures. These findings support our hypothesis that exciting brand personalities might be penalized in risky consumption situations, because exciting brand personalities are characterized as unpredictable and surprising. In contrast, sincere hotel brand personalities may benefit from tourists' perceptions of them as predictable (Sundar and Noseworthy, 2016). Additionally, in Study 1, through the computerized psycholinguistic analysis, we have revealed that tourists presented with numerical quantifiers processed the information more analytically than did tourists provided with verbal quantifiers. These results support the idea that numerical quantifiers require a higher focus from individuals on each element or attribute that confirms the communicated information (Liu et al., 2020a; Nisbett et al., 2001) when the information is linked to a personally relevant situation (Liu et al., 2020b; Petty et al., 1981).

Then, in Study 2, we demonstrated with an experiment that the persuasiveness of the communication, expressed using numerical or verbal quantifiers, depends on the hotel's brand personality. When a hotel positions its brand personality as sincere, the use of both numerical and verbal quantifiers in COVID-19 policies affects equally tourists' attitudinal and intentional responses toward the hotel. Conversely, if a hotel brand personality is positioned as exciting, the hotel can significantly influence tourists' attitudes and intentions using numerical quantifiers rather than verbal quantifiers. In line with recent studies, this may occur because when tourists are facing a high personal-risk-consumption context, such as the COVID-19 pandemic, they require a higher degree of factual, detailed, and trustworthy information to carefully decide whether to visit a hotel (e.g., Shin and Kang, 2020; Zenker and Kock, 2020). In this sense, while tourists are processing hotels' cleaning programs, the hotel brand personality acts as a signaling cue that can cognitively facilitate how tourists form their attitudes and intentional responses toward the hotel.

In the case of a sincere hotel personality, tourists perceive hotel communications as more precise, honest, and trustworthy. Thus, the sincere brand personality primes tourists to process the information with a high focus on the characteristics of the source (the hotel brand), rather than to evaluate in a detailed manner the information presented. Conversely, an exciting brand personality is perceived as more unpredictable and unexpected, which drives tourists to carefully evaluate the information presented, rather than use the source derived from the hotel brand personality to form their attitudes and behaviors. We found that

**Table 3**  
Means, standard deviations, and cell counts for Study 2.

Type of quantifier	Sincere hotel brand		Exciting hotel brand		Control	
	Numerical	Verbal	Numerical	Verbal	Numerical	Verbal
Attitudes	5.12(.89)	5.24(1.00)	5.75(1.09)	4.97(.96)	5.40(.97)	4.76(1.33)
Intentions to visit and recommend	4.50(.85)	4.60(.96)	5.39(1.25)	4.40(1.06)	4.52(1.10)	4.15(1.21)
Cell size	26	32	32	38	30	28

an exciting hotel brand can compensate for the perceived lack of predictability and trustworthiness that tourists have for this personality trait by using numerical quantifiers in their communications concerning COVID-19. We obtained evidence that numerical quantifiers are processed more analytically by tourists than are verbal quantifiers. In addition, the findings reinforce the idea of the rhetoric of numbers in communication studies. It has been observed that the numerical format of information can be used as a critical signal of precision and truthfulness (Merriam, 1990; Roeh and Feldman, 1984).

#### 4.1. Theoretical implications

Our theoretical discussion began by considering prior studies of brand personality and dual-process and persuasion theories. First, from dual-process theory (De Neys, 2017; Evans, 2008; Liu et al., 2020a; Nisbett et al., 2001) and persuasion theory (Petty et al., 1981), we analyzed how people perceive the use of numerical and verbal quantifiers in brand information. We expected that numerical quantifiers would require from tourists a high focus on each characteristic of the information presented, implicating a strong cognitive effort to further form a particular attitude or to conduct behavior. This perspective is based on dual-process theory, which suggests that people process numbers more analytically than verbal information (Liu et al., 2019, 2020a). At the same time, we observed through the ELM (Petty et al., 1981) that people perceive that information containing numbers is more cognitively demanding; thus, individuals will be motivated to process this information carefully only in situations that are personally compromising, such as being in a high-risk consumption situation, as is the case of the pandemic context. On the contrary, we found that the use of verbal quantifiers in brand communication drives individuals to rely on a contextual understanding of what is communicated and that, in the end, it facilitates an overall and quick construction of attitudinal and intentional responses to the brand (Viswanathan and Childers, 1997; Windschitl and Wells, 1996).

Second, building on prior research in a normal consumption context, it was discussed that a hotel brand personality could benefit from being congruent with the communication style used in the cleaning program's narrative design. From this perspective, a sincere brand based on a predictable, honest, and transparent trait can use a congruent logic reinforcing its communications with numerical quantifiers that signal precise and trustworthy information. Meanwhile, an exciting brand would benefit from the use of both numerical and verbal quantifiers in its communications, as this personality trait is based on being unpredictable, innovative, flexible, and surprising; thus, it is congruent to use multiple formats of communication.

However, we critically hypothesized a reverse argumentation when analyzing the current pandemic situation of consumption. We proposed that exciting brand personalities could be penalized for using verbal quantifiers that offer an overall and contextual perception in a pandemic consumption situation. This personality trait has to compensate for its perception of being unpredictable and surprising by providing as much factual and precise information as possible, such as using numerical quantifiers. In addition, we argued that a sincere hotel brand personality could benefit from the use of both numerical and verbal quantifiers, as this personality trait tends to be perceived by individuals as predictable and, in the end, provokes tourists to find the hotel more trustworthy and reliable in terms of what it is doing to secure cleaning of rooms and common areas against COVID-19. The Study 2 results support our arguments by confirming an interaction effect between hotel brand personality and numerical/verbal quantifiers used in communicating cleaning programs on tourists' attitudes and intentions to visit and recommend the hotel.

Finally, in line with the ELM (Petty et al., 1981) and the dual-processing theory (De Neys, 2017; Evans, 2008; Liu et al., 2020a; Nisbett et al., 2001), we confirmed that when individuals are presented with information about hotel cleaning policies they first evaluate the

source (the hotel brand) to decide whether they will process the information by analyzing every detail of the information (central route) or, conversely, by constructing an overall idea of the information (peripheral route). In this case, when tourists are evaluating a risky consumption situation, we found that a sincere hotel brand personality facilitates their judgment of the hotel's cleaning program, and, no matter what, the program contains numerical or verbal quantifiers to drive tourists' positive attitudinal and intentional responses toward the hotel. This occurs because a sincere brand is considered a relevant cue on which tourists can base their opinions instead of carefully processing each informational detail (the peripheral route for ELM). Conversely, in a risky consumption situation when the hotel is positioned as an exciting personality based on being perceived as unpredictable and surprising, tourists are forced to process the information carefully and in detail (the central route for ELM), and thus they prefer to have more factual and technical information through numerical quantifiers to decide accurately (Chaiken, 1980) whether they will assume a high personal risk by visiting the hotel during the COVID-19 pandemic.

#### 4.2. Managerial implications

We offer hotel managers evidence to optimize hotel brand–tourist relationships in the COVID-19 era. Study 1 showed that whether the communications contain numerical or verbal quantifiers, tourists' attitudes toward hotels will range from perceiving the hotel as a professional entity that properly cares about guests' security and well-being to viewing it as offering limited and insufficient cleaning protocols. In addition, for hotels with an exciting personality, we found that tourists could also feel total skepticism about how the hotel is dealing with the coronavirus. This result showed that, in a pandemic context, tourists require factual, trustworthy, and concise information for their decision-making. Derived from participant narratives in Study 1, we recommend that hotel managers design communications about their COVID-19 cleaning policies that are as thorough as possible. For example, messaging could include certified cleaning procedures known to prevent COVID-19.

Furthermore, in Study 2, we observed that hotels with a sincere brand personality equally benefit from using numerical and verbal quantifiers to define such cleaning procedures. In this case, hotels with a sincere personality are forced to work with joint tactics based on reinforcing the brand's personality while communicating its procedures against COVID-19, for example, by remarking on the hotel's values and personality before describing each cleaning procedure. We also contribute findings for hotels that position their offer as an exciting brand personality. As noted in the results of Study 2, managers of a hotel with an exciting brand personality should use a quantification logic while communicating their cleaning protocols. Such hotels will benefit from using numerical quantifiers in COVID-19 communications, as this format signals precision, professionalism, and care for customers.

#### 4.3. Limitations and future research

This work is not without limitations that should be addressed in future studies. First, it is necessary to evaluate the external validity of our experiment, including communication styles that combine both numerical and verbal quantifiers in the same condition with a bigger sample. Currently, hospitality and tourism organizations are also using labels to signal that a hospitality area was cleaned with secure procedures against COVID-19 (World Tourism Organization, 2020). It will be interesting to analyze hotels' use of *COVID-19-free* labels combined with numerical and verbal quantifiers to advance in the post-pandemic hotel industry agenda (Hao et al., 2020).

Second, another question that emerged from this research is related to the fact that we contextualized our findings in a pandemic situation when there is a lack of studies on brand personality linked with the use of numerical/verbal quantifiers in a normal context. Here, the challenge

is the exceptionality of the pandemic as the study context. We encourage research using the theoretical and empirical relationship of brand personality and the use of quantifiers in a normal consumption context and through other kinds of hotel communications that necessarily affect tourists in a highly personal way, for example, among hotel customer care programs in which guests receive information about how hotels will deal with their possible future problems.

Finally, we focused our research on contextual factors, such as hotels' brand personalities, and communication formats, and the macro-context that represents the COVID-19 crisis. Thus, we do not know how individual factors, such as tourists' cultural values or prior experience with the hotel brand, could moderate our theoretical and empirical findings. Future research should explore how contextual and individual-level factors play a role while analyzing hotel brand personality and the type of communication used in hotels' marketing communications. Additionally, even though we examine different hotels' tactics regarding communication style and brand personality when communicating their cleaning procedures to combat COVID-19, it is not

clear whether major hotel brands that manage multiple brands simultaneously would be able to achieve results similar to ours. This may happen when a major hotel brand is positioned with a personality that is different compared to a secondary hotel brand of the same group (e.g., Marriot International as a major brand and its collection of brands with different positionings, such as Marriot, Ritz-Carlton, Sheraton, Residence Inn). Therefore, future studies should include more complex experimental scenarios to analyze the interplay between hotel brand personality and the use of numerical and verbal quantifiers in marketing communication, considering contexts with the presence of multiple hotel brands from the same hotel group.

**Acknowledgment**

This work was supported by the Spanish Ministry of Economy, Industry, and Competitiveness, Individual Grant Number: BES-2016-078666.

**Appendix A. Brand personality and hotels' COVID-19 cleaning program manipulation for Study 1 and Study 2**

(a) Sincere hotel brand	(b) Exciting hotel brand	(c) Control condition
A research group is interested in getting your feedback on a new hotel chain. Please, read the hotel's description and answer the following question: <b>The Holton Hotel makes accommodation experiences for a heartfelt audience. The hotel's rooms are considered candid, honest, and sensible.</b>	A research group is interested in getting your <b>feedback on a hotel chain</b> . Please, <b>read the hotel's description</b> and answer the following question: <b>The Holton Hotel makes accommodation experiences for a thrill-seeking audience. The hotel's rooms are considered to be electrifying, stylish, and one-of-a-kind.</b>	A research group is interested in getting your <b>feedback on a hotel chain</b> . Please, <b>read the hotel's description</b> and answer the following question: <b>The Holton Hotel is now approaching big cities in the US to establish a competitive accommodation offer to middle- and upper-class consumers.</b>
(a) Numerical quantifiers	(b) Verbal quantifiers	
<b>Our Guest, our priority</b> <b>The Holton Hotel</b> <b>Statement regarding COVID-19:</b> We procure a 100% comfortable stay for our guests. We have applied a "pure space" procedure to ensure that 99% of air pathogens are eliminated from our rooms. In addition, we secure, through 10 cleaning phases per day, that all common areas of our hotels are free of COVID-19.	<b>Our Guest, our priority</b> <b>The Holton Hotel</b> <b>Statement regarding the novel coronavirus:</b> We procure the most comfortable stay for our guests. We have applied a "pure space" procedure to ensure that all air pathogens are eliminated from our rooms. In addition, we secure, through several cleaning phases per day, that all common areas of our hotels are free of coronavirus.	

**Appendix B. Supplementary data**

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ijhm.2021.102872>.

**References**

Aaker, J.L., 1997. Dimensions of brand personality. *J. Mark. Res.* 34 (3), 347–356.  
 Aaker, J.L., Fournier, S., Brasel, S.A., 2004. When good brands do bad. *J. Consum. Res.* 31 (1), 1–16.  
 Altschiller, D., 2000. Do dot-coms' ads reveal a more basic flaw? *Brandweek* 41 (12), 32.  
 Bartosiak, M., 2020. Can you tell me where to stay? The effect of presentation format on the persuasiveness of hotel online reviews. *Curr. Issues Tour.* <https://doi.org/10.1080/13683500.2020.1765749>.  
 Baum, T., Hai, N.T.T., 2020. Hospitality, tourism, human rights and the impact of COVID-19. *Int. J. Contemp. Hosp. Manage.* <https://doi.org/10.1108/IJCHM-03-2020-0242>.  
 Berezan, O., Yoo, M., Christodoulidou, M., 2016. The impact of communication channels on communication style and information quality for hotel loyalty programs. *J. Hosp. Tour. Technol.* 7 (1), 100–116.  
 Bufquin, D., Park, J.-Y., Back, R.M., Nutta, M.W.W., Zhang, T., 2020. Effects of hotel website photographs and length of textual descriptions on viewers' emotions and behavioral intentions. *Int. J. Hosp. Manag.* 87 (May), 102378.  
 Chaiken, S., 1980. Heuristic versus systematic processing and the use of source versus message cues in persuasion. *J. Pers. Soc. Psychol.* 39 (November), 752–766.  
 Childers, T.L., Viswanathan, M., 2000. Representation of numerical and verbal product information in consumer memory. *J. Bus. Res.* 47 (2), 109–120.  
 Coulter, R., Zaltman, G., 2000. The power of metaphor. In: Ratneshwar, S., Mick, D.G., Huffman, C. (Eds.), *The Why of Consumption: Contemporary Perspectives on Consumers Motives Goals and Desires*. Routledge, London, pp. 259–281.

De Neys, W., 2017. *Dual Process Theory 2.0*. Routledge, London.  
 Ettinger, A., Grabner-Kräuter, S., Terlutter, R., 2018. Online CSR communication in the hotel industry: evidence from small hotels. *Int. J. Hosp. Manag.* 68 (January), 94–104.  
 Evans, J.S.B.T., 2008. Dual-processing accounts of reasoning, judgment, and social cognition. *Annu. Rev. Psychol.* 59 (1), 255–278.  
 Evans, J.S.B.T., Stanovich, K.E., 2013. Dual-process theories of higher cognition: advancing the debate. *Perspect. Psychol. Sci.* 8 (3), 223–241.  
 Foroudi, P., 2019. Influence of brand signature, brand awareness, brand attitude, brand reputation on hotel industry's brand performance. *Int. J. Hosp. Manag.* 76 (Part A, January), 271–285.  
 Foroudi, P., 2020. Corporate brand strategy: drivers and outcomes of hotel industry's brand orientation. *Int. J. Hosp. Manag.* 88 (July), 102519.  
 Gretry, A., Horváth, C., Belei, N., van Riel, A.C., 2017. "Don't pretend to be my friend!" when informal brand communication style backfires on social media. *J. Bus. Res.* 74 (4), 77–89.  
 Hao, F., Xiao, Q., Chon, K., 2020. COVID-19 and China's hotel industry: impacts, a disaster management framework, and post-pandemic agenda. *Int. J. Hosp. Manag.* 90 (September), 102636.  
 Hard Rock Hotels & Casino, 2020. *Hard Rock Official Website*. Retrieved online: <https://www.hardrockhotels.com/>.  
 Hardeman, G., Font, X., Nawijn, J., 2017. The power of persuasive communication to influence sustainable holiday choices: appealing to self-benefits and norms. *Tour. Manag.* 59 (April), 484–493.



- Hu, X., Yan, H., Casey, T., Wu, C.H., 2021. Creating a safe haven during the crisis: how organizations can achieve deep compliance with COVID-19 safety measures in the hospitality industry. *Int. J. Hosp. Manag.* 92 (January), 102662.
- Im, J., Kim, H., Miao, L., 2021. CEO letters: hospitality corporate narratives during the COVID-19 pandemic. *Int. J. Hosp. Manag.* 92 (January), 102701.
- Jani, D., Han, H.H., 2014. Personality, satisfaction, image, ambience, and loyalty: testing their relationships in the hotel industry. *Int. J. Hosp. Manag.* 37 (February), 11–20.
- Jun, S.H., Vogt, C., 2013. Travel information processing applying a dual-process model. *Ann. Tour. Res.* 40, 191–212.
- Kahneman, D., 2011. *Thinking, Fast and Slow*. Farrer, Straus and Giroux, New York, NY.
- Kim, H., Stephenkova, S., 2017. Understanding destination personality through visitors' experience: a cross-cultural perspective. *J. Destin. Mark. Manag.* 6 (4), 416–425.
- Kim, H.R., Lee, M., Ulgado, F.M., 2005. Brand personality, self-congruity and the consumer-brand relationship. *ACR Asia-Pacific Advances* 6, 111–117.
- Lee, S.J., Back, K.J., 2010. Examining antecedents and consequences of brand personality in the upper-upscale business hotel segment. *J. Travel Tour. Mark.* 27 (2), 132–145.
- Liu, D., Juanchich, M., Sirota, M., Orbell, S., 2019. People overestimate verbal quantities of nutrients on nutrition labels. *Food Qual. Prefer.* 78 (December), 103739.
- Liu, D., Juanchich, M., Sirota, M., Orbell, S., 2020a. Differences between decisions made using verbal or numerical quantifiers. *Think. Reason.* <https://doi.org/10.1080/13546783.2020.1720813>.
- Liu, D., Juanchich, M., Sirota, M., Orbell, S., 2020b. The intuitive use of contextual information in decisions made with verbal and numerical quantifiers. *Q. J. Exp. Psychol.* 73 (4), 481–494.
- Los Angeles Times, 2020. Tracking Coronavirus in California. Retrieved online: <https://www.latimes.com/projects/california-coronavirus-cases-tracking-outbreak/>.
- Luffarelli, J., Stamatogiannakis, A., Yan, H., 2019. The visual asymmetry effects: an interplay of logo design and brand personality on brand equity. *J. Mark.* 56 (1), 89–103.
- Maille, V., Fleck, N., 2011. Perceived congruence and incongruence: towards a clarification of the concept, its formation and measure. *Rech. Appl. En Mark.* 26 (2), 77–113.
- Merriam, A.H., 1990. Words and numbers: mathematical dimension of rhetoric. *South. Commun. J.* 55 (4), 337–354.
- Nisbett, R.E., Peng, K., Choi, I., Norenzayan, A., 2001. Culture and systems of thought: holistic versus analytic cognition. *Psychol. Rev.* 108 (2), 291–310.
- Pennebaker, J.W., Chung, C.K., Frazee, J., Lavergne, G.M., Beaver, D.I., 2014. When small words foretell academic success: the case of college admissions essays. *PLoS One* 9 (12), e115844.
- Pennebaker, J.W., Boyd, R.L., Jordan, K., Blackburn, K., 2015. The Development and Psychometric Properties of LIWC2015 (Working Paper). University of Texas at Austin, Austin.
- Peters, E., Hibbard, J., Slovic, P., Dieckmann, N., 2007. Numeracy skill and the communication, comprehension, and use of risk-benefit information. *Health Aff.* 26 (3), 741–748.
- Petty, R.E., Cacioppo, J.T., Goldman, R., 1981. Personal involvement as a determinant of argument-based persuasion. *J. Pers. Soc. Psychol.* 41 (November), 847–855.
- Roeh, I., Feldman, S., 1984. The rhetoric of numbers in front-page journalism: how numbers contribute to the melodramatic in the popular press. *Text* 4, 347–368.
- Saldana, J., 2013. *The Coding Manual for Qualitative Researchers*, 2nd ed. Sage, London.
- Santana, S., Thomas, M., Morwitz, V.G., 2020. The role of numbers in the customer journey. *J. Retail.* 96 (1), 138–154.
- Shin, H., Kang, J., 2020. Reducing perceived health risk to attract hotel customers in the COVID-19 pandemic era: focused on technology innovation for social distancing and cleanliness. *Int. J. Hosp. Manag.* 91 (October), 102664.
- Strauss, A., Corbin, J., 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage Publications, Newbury Park, CA.
- Su, N., Reynolds, D., 2017. Effects of brand personality dimensions on consumers' perceived self-image congruity and functional congruity with hotel brands. *Int. J. Hosp. Manag.* 66 (September), 1–12.
- Sundar, A., Noseworthy, T.J., 2016. Too exciting to fail, too sincere to succeed: the effects of brand personality on sensory disconfirmation. *J. Consum. Res.* 43 (1), 44–67.
- Tausczik, Y.R., Pennebaker, J.W., 2010. The psychological meaning of words: LIWC and computerized text analysis methods. *J. Lang. Soc. Psychol.* 29 (1), 24–54.
- The New York Times, 2020. Coronavirus in the U.S.: Lasted Map and Case Count. Retrieved online: <https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>.
- The Washington Post, 2020. Coronavirus U.S. Cases. Retrieved online: [https://www.washingtonpost.com/graphics/2020/national/coronavirus-us-cases-deaths/?itid=hp\\_hp-banner-low\\_web-gfx-death-tracker-duplicate%3Ahomepage%2Fstory-ans](https://www.washingtonpost.com/graphics/2020/national/coronavirus-us-cases-deaths/?itid=hp_hp-banner-low_web-gfx-death-tracker-duplicate%3Ahomepage%2Fstory-ans).
- Tran, X., Dauchez, C., Szemik, A.M., 2013. Hotel brand personality and brand equity. *J. Vacat. Mark.* 19 (4), 329–341.
- Viswanathan, M., Childers, T.L., 1997. "5" calories or "low" calories? What do we know about using numbers or words to describe products and where do we go from here? *Adv. Consum. Res.* 24, 412–418.
- Wang, I.M., Ackerman, J.M., 2018. The infectiousness of crowds: crowding experiences are amplified by pathogen threats. *Pers. Soc. Psycho. Bull.* 45 (1), 120–132.
- Windschitl, P.D., Wells, G.L., 1996. Measuring psychological uncertainty: verbal versus numeric methods. *J. Exp. Psychol. Appl.* 2, 343–364.
- Witt, W., 1976. Effects of quantification in scientific writing. *J. Commun.* 26 (Winter), 67–69.
- WTTC, 2020. Latest Research From WTTC. World Travel & Tourism Council (WTTC). Retrieved online: <https://www.wttc.org/about/media-centre/press-releases/press-releases/2020/latest-research-from-wttc-shows-an-increase-in-jobs-at-risk-in-travel-and-tourism/>.
- Yalch, R., Elmore-Yalch, R., 1984. The effect of numbers on the route to persuasion. *J. Consum. Res.* 11 (June), 522–527.
- Zenker, S., Kock, F., 2020. The coronavirus pandemic – a critical discussion of a tourism research agenda. *Tour. Manag.* 81, 104164.