"Most Americans like their privacy." Exploring privacy concerns through US guests' reviews

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Abstract

Purpose – This study aims to explore US hotel guests' privacy concerns with a twofold aim as follows: to investigate the privacy categories, themes and attributes most commonly discussed by guests in their reviews and to examine the influence of cultural proximity on privacy concerns.

Design/methodology/approach – This study combined automated text analytics with content analysis. The database consisted of 68,000 hotel reviews written by US guests lodged in different types of hotels in five European cities. Linguistic Inquiry Word Count, Leximancer and SPSS software were used for data analysis. Automated text analytics and a validated privacy dictionary were used to investigate the reviews by exploring the categories, themes and attributes of privacy concerns. Content analysis was used to analyze the narratives and select representative snippets.

Findings – The findings revealed various categories, themes and concepts related to privacy concerns. The two most commonly discussed categories were privacy restriction and outcome state. The main themes discussed in association with privacy were "room," "hotel," "breakfast" and several concepts within each of these themes were identified. Furthermore, US guests showed the lowest levels of privacy concerns when staying at American hotel chains as opposed to non-American chains or independent hotels, highlighting the role of cultural proximity in privacy concerns.

Practical implications – Hotel managers can benefit from the results by improving their understanding of hotel and service attributes mostly associated with privacy concerns. Specific suggestions are provided to hoteliers on how to increase guests' privacy and on how to manage issues related to cultural distance with guests.

Originality/value – This study contributes to the hospitality literature by investigating a neglected issue: on-site hotel guests' privacy concerns. Using an unobtrusive method of data collection and text analytics, this

study offers valuable insights into the categories of privacy, the most recurrent themes in hotel guests' reviews and the potential relationship between cultural proximity and privacy concerns.

Introduction

Would a different perspective on privacy issues influence hotel guests' experiences? In one online review comment, a guest warned others as follows: *If this is the first trip to Europe, be prepared for less privacy than we are used to in the US* relationships, interactions and exchanges – whether personal or professional – require a certain level of privacy, which often entails a balancing act. Understanding privacy concerns is a high priority for both consumers and businesses (Huang and To, 2018). Through which lenses can privacy concerns be scrutinized in tourism and hospitality? Recent studies have acknowledged the scarcity of investigations into hotel guests' physical privacy concerns and have, thus called for more research to assess this relevant aspect of guests' experiences (Hall and Ram, 2019; Ioannou *et al.*, 2020; Tussyadiah *et al.*, 2019). In this vein, the present study sought to explore the privacy concerns of hotel guests and their evolution over time. To do so, this study used unobtrusive data collection methods, moving away from traditional data collection approaches involving surveys, interviews and experimental designs (Morosan, 2019; Morosan and DeFranco, 2015, 2016; Kim and Kim, 2018; O'Connor, 2007; Wei *et al.*, 2017).

The growing availability of online travel reviews (OTRs) has allowed scholars to explore the construct of privacy with novel methods, thus reducing the non-response biases and survey participation issues that often occur with traditional methods (Roster *et al.*, 2014). To the best of the authors' knowledge, no study to date has applied text mining techniques to consumer-generated data (e.g. OTRs) to dig further into the topic of privacy concerns exhibited by guests during hotel stays. The mainstream research on privacy concerns impacts has shown that culture affects consumers' attitudes toward privacy concerns (Dinev *et al.*, 2006). Therefore, culture appears to play an important role in privacy concerns. The role of culture has also been acknowledged in the recent literature on consumer behavior in online settings (Filieri *et al.*, 2018). In regard to OTRs, cultural and language differences shape the amount, type and variety of feedback left by tourists on online platforms after they experience a particular hotel, attraction or restaurant (Banerjee and Chua, 2016; Sann *et al.*, 2020; Schuckert *et al.*, 2015). Thus, this study also used the concept of cultural proximity to explore the effect of culture on privacy concerns.

In summary, this study aimed to explore US hotel guests' privacy concerns. In particular, this study aimed to explore guests' privacy concerns by using online review narratives to examine as follows: the extent of the privacy discourse, issues and themes in hotel guests' reviews; the overall evolution of the privacy discourse over time; and the role of cultural proximity in privacy concerns. Automated text mining techniques and content analysis were used on a sample of 68,000 hotel reviews written by US guests who lodged in different types of hotels across five European cities. The results showed the utility of OTRs in investigating privacy and describing the extent and evolution of privacy concerns. This paper presents the most frequently recurring privacy categories, themes and concepts in guests' OTRs and explores the effect of culture on privacy concerns. The findings offer insights into theory and practice in the hospitality domain. The expected theoretical contribution of this study relates to the understanding of guests' privacy concerns regarding physical environments, particularly culturally different types of hotels. It was expected that

customers would tend to experience privacy issues and report privacy concerns when patronizing culturally distant hotels. The expected practical implications of this study include the identification of specific areas of concern reported by guests, which represents valuable information for hotel managers seeking to improve encounters and customization to meet their guests' privacy expectations.

Literature review

Privacy concerns in hospitality

Conceptualized by Warren and Brandeis (1890, p. 193) as "the right to be left alone," privacy is a complex phenomenon with a multi-faceted nature. Several studies have documented the various aspects of this construct (Pedersen, 1979; Smith *et al.*, 1996; Westin, 1970). Westin (1970) conceived of privacy as a multi-categorical construct composed of solitude, intimacy, anonymity and reserve. Pedersen (1979) conceptualized the privacy dimensions of anonymity (willingness to go unnoticed in a crowd), solitude (being alone and free from observation by others), isolation (desire to be alone and away from others), reserve (unwillingness to be and talk with others) and intimacy (being alone with family members or friends). Scholars have also investigated privacy as a personal psychological variable that affects customer behavior (Bitner, 1992; Eastlick *et al.*, 2006). Indeed, timely assessment of potential consumers' privacy concerns affects the business success and long-term consumer satisfaction (Phelps *et al.*, 2001).

Consumers' privacy concerns are particularly relevant within the hospitality domain, as these concerns can impact hotel guests' satisfaction (Otto and Ritchie, 1996). Indeed, within the lodging industry, privacy is one of the most frequently reported guest requests (Lynch, 2005) while a perceived lack of privacy creates social tension (Morgan, 2011) and negatively affects holiday memories (Schänzel and Lynch, 2016). Moreover, reducing customer privacy concerns increases the value assigned to services by tourists (Lee and Cranage, 2011) and recovering from privacy breaches significantly increases consumers' positive word-of-mouth (WOM) and revisit intentions (Wei *et al.*, 2017). Indeed, consumers who perceive digital platforms as "safe" or "trustworthy" are more likely to use them again in the future (Filieri *et al.*, 2015), allowing these organizations to develop a competitive advantage (Inman and Nikolova, 2017). Hence, controlling consumer privacy represents a strategic variable and a marketing lever (Goldfarb and Tucker, 2013).

Recent literature has mostly addressed privacy concerns in online environments (Xu and Teo, 2004), on location-based social media (Kim *et al.*, 2017), on peer-to-peer websites (Wang *et al.*, 2020), on mobile hotel booking devices (Ozturk *et al.*, 2017) or with respect to e-commerce and online review posting (Morosan, 2019; Morosan and DeFranco, 2015, 2016; Kim and Kim, 2018; O'Connor, 2007; Wei *et al.*, 2017). Conversely, only a few studies have considered the on-site physical dimension of privacy. Table 1 provides an overview of relevant literature that has addressed privacy in on-site settings along with the main findings of this literature.

The scant available literature has traced an interesting path for this topic, highlighting the relevance of physical concerns in tourism and hospitality settings. These studies have supported the relevance of privacy as a psychological factor affecting hotel customer service experiences (Otto and Ritchie, 1996) and have also pointed to gender and cultural differences (Kaya and Weber, 2003; Keung, 2000). However, these studies have mostly focused on narrower areas, such as tourists' perceptions of privacy invasions by employees (Keung, 2000), privacy in relation to market niches (e.g. celebrities; Goh and Law, 2007), employees' perceived privacy issues in the casino gaming industry (Huang and To, 2018) and more recently, home-sharing providers' privacy concerns regarding peer-to-peer accommodations

Table 1.
Summary of relevant studies on physical privacy in tourism and hospitality

Publication	Method/sample	Main findings
Otto and Ritchie (1996), *TM*	Survey, 339 respondents	Privacy is recognized as one of the most important psychological measure affecting hotel customer service experience
Keung, 2000, *TM*	Survey, 491 respondents	Hotel guests are most intolerant of infringement of their property and privacy showing a strong inclination toward protecting their own privacy and property Female tourists disliked hotel employees invading their privacy and property more than male. European and Asian tourists showed a higher tolerance when hotel employees infringed their property
Kaya and Weber, 2003, *J. Environ. Psychol.*	Survey, 408 respondents	American student's desire for privacy at residence halls is higher than Turkish ones. Male report a higher desire for privacy than women
Lynch, 2005, *JHTM*	Literature review	Role of privacy perception in different accommodation settings: purchased privacy (i.e. hotel) vs limited privacy (i.e. commercial private home)
Tse and Ho, 2006; *CQ*	Survey, 42 respondents	Privacy as a critical feature for sports teams in the hotel choice
Goh and Law, 2007, *IJCHM*	Qualitative approach (8 in-depth interviews)	Highlight the critical role of privacy for celebrities and VIPs at hotels
Hwang *et al.*, 2012, *IJCHM*	Experimental design (VR simulation), 61 respondents	Customers' desire for privacy moderates the relationship between crowding and approach-avoidance responses
Kim and Kim, 2018, *IJCHM*	Qualitative approach (Semi-structured interviews, focus group, participatory online observation).	Role of privacy (e.g. absence of staff, private garage) in the choice of automated motels
Huang and To, 2018, *IJCHM*	Survey, 298 respondents	Consumers' privacy protection is perceived as one of the main issues by gambling employees
Ranzini *et al.*, 2020, *IJHM*	Survey, 241 respondents	Physical privacy concerns of home-sharing providers Providers in sharing economy are triggered by hosts' attachment and reputational concerns

Note: VIP = Very important person

(Ranzini *et al.*, 2020; Wang *et al.*, 2020). Furthermore, as shown in Table 1, the issue of privacy has only been investigated marginally and mostly with traditional data collection methods (surveys, interviews and focus groups); thus far, no attempts have been made to investigate this issue using big data, such as OTRs, despite their growing influence in social media research in hospitality (Litvin *et al.*, 2018; Nusair, 2020; Nusair *et al.*, 2019). Moreover, recent studies (Tussyadiah *et al.*, 2019) have pointed out the need to discuss privacy concerns related to on-site experiences. Indeed, the hospitality literature still lacks a comprehensive exploratory study of the privacy concerns experienced by hotel guests at their accommodations.

Thus, this study aimed to advance the understanding of guests' privacy concerns by exploring online review narratives and attempting to address the following research questions:

RQ1. To what extent do hotel guests mention privacy concerns in their reviews?

RQ1a. What are the main categories of privacy discussed by guests in their reviews?

RQ1b. What are the most frequently recurring themes discussed by guests in association with privacy concerns?

Additionally, this study explored the evolution of privacy discourse over time as follows:

RQ2. Has the extent of guests' privacy discourse evolved over time?

Cultural traits in online travel reviews
Cultural traits embedded in national cultures lead to differing holiday expectations and experiences (Correia *et al.*, 2011; Reisinger and Turner, 1999) and also influence needs and perceptions related to privacy (Demirbas and Demirkan, 2000; Kaya and Weber, 2003). Privacy needs vary according to the customer's culture of origin, with contact cultures counterposed to non-contact cultures (Hwang *et al.*, 2012; Kaya and Weber, 2003). Macroenvironmental factors, such as cross-cultural preferences, have been identified as antecedents of privacy concerns (Ioannou *et al.*, 2020; Tussyadiah *et al.*, 2019). Research on privacy has shown that culture impacts consumers' attitudes toward privacy concerns (Bellman *et al.*, 2004; Cullen, 2009; Dinev *et al.*, 2006; Milberg *et al.*, 2000). Given the influence of different regulatory contexts on international travel, it is relevant to study privacy from a multi-cultural perspective. Indeed, beyond national boundaries, tourists must adapt to new regulatory privacy frameworks, which may increase privacy concerns (Tussyadiah *et al.*, 2019). Despite the relevance of the issue, no study to date has investigated the influence of cultural traits on guests' privacy concerns during hotel stays using traditional methods or OTRs.

Recent literature has explored cultural traits and related behavioral differences in OTRs by investigating language as a discriminating cultural factor (Liu *et al.*, 2017), macro-areas of residence and cultural backgrounds (Ayeh *et al.*, 2016; D'Acunto and Volo, 2021; Galati and Galati, 2019; Mariani and Predvoditeleva, 2019). A few studies have focused on hotel reviews and restaurant experiences, showing a growing interest in the use of OTRs to explore cultural traits and related behavioral differences (Jia, 2020; Nakayama and Wan, 2018). Thus, there is evidence that OTRs are useful for investigating cultural traits (Leon, 2019). Studies on cross-cultural issues have relied mostly on recognized demographics (e.g. nationalities and countries) to investigate different cultures (Li, 2014; Soldatenko and Backer, 2019). However, other constructs have been explored; for example, cultural

proximity indicates the closeness between tourists and visited destinations (Kastenholz, 2010). Herein, the concept of closeness to one's own culture is adapted to the hospitality industry. Indeed, hotel chains of one's own culture are considered to exhibit cultural proximity and are, thus expected to have less impact on privacy concerns, whereas independent hotels at one's destination are considered to be culturally distant from one's own culture.

Thus, it was hypothesized that hotel type would affect the nature and magnitude of concerns about privacy. Specifically, this study distinguished between independent hotels, culturally close hotel chains and non-culturally similar hotel chains. With particular reference to cultural proximity, the following research question was posed:

RQ3. What is the role of cultural proximity in privacy concerns? That is: To what extent do guests' privacy concerns change across hotel types (i.e. independent hotels, culturally close hotel chains and non-culturally similar hotel chains)?

Methodology
Setting and data source
This study used hotel reviews from TripAdvisor, which has proved to be the most suitable and popular data source for studying tourists' evaluations and preferences (Filieri *et al.*, 2019; Ma *et al.*, 2018; Marine-Roig, 2019; Volo, 2019; Xie *et al.*, 2014). Recent studies have shown that social media is a reliable source of data that is representative not only of its users but also of the general population (Ma and Kirilenko, 2021). The sample of the present study consisted of the OTRs of American guests staying at hotels across five major European cities (Rome, Paris, Amsterdam, Barcelona and Istanbul). These cities were selected with the aim of differentiating privacy concerns related to different hosting cultures. Furthermore, the selection of these cities was based on international overnight guests' volumes and destinations' revenues, as ranked by the Global Destination Cities Index (2015), which is a reliable metric for the hospitality industry (D'Acunto *et al.*, 2020; Leon, 2019; Osman *et al.*, 2019).

Data collection and data set characteristics
The collected data concerned hotel characteristics (e.g. independent hotels vs hotel chains), reviewer specifics (e.g. gender and age class), trip purpose, the text body of the reviews and star ratings. To investigate American guests' reviews, it was deemed appropriate to only use OTRs that were originally written in English, the language of the culture under investigation. The authors acknowledge that American passport holders can belong to other language groups, but this operational choice allowed for linear use of the privacy dictionary and considered that English is a mostly international language used by many first-generation and second-generation Americans during travel. The reviewer's country of origin was considered as a filter variable (Filieri *et al.*, 2018), and the data set was scrutinized so as to only select reviews posted by TripAdvisor members registered as US citizens, excluding reviewers who did not disclose their place of origin. The final data set consisted of 68,936 reviews (retrieved with a web crawler) covering the period of 2006–2016. Table 2 provides the characteristics of the data set.

The review distribution per rating class shows a positively biased distribution observable in most review platforms (Guo *et al.*, 2017), with extremely positive reviews covering more than 49% of the overall data set.

Variable		n	(%)
Reviewer age	−24	1,007	1.5
	25–34	13,621	19.8
	35–49	22,541	32.7
	50–64	23,536	34.1
	65+	8,231	11.9
	Total	68,936	100.0
Reviewer gender	Man	33,330	48.3
	Woman	35,606	51.7
	Total	68,936	100.0
Trip purpose	As a couple	35,579	51.6
	On business	5,704	8.3
	Solo	5,561	8.1
	With family	13,550	19.7
	With friends	8,542	12.4
	Total	68,936	100.0
City of stay	Amsterdam	8,374	12.1
	Barcelona	11,046	16.0
	Istanbul	7,733	11.2
	Paris	23,736	34.4
	Rome	18,047	26.2
	Total	68,936	6.4
Review rating	1	1,332	1.9
	2	2,382	3.5
	3	7,735	11.2
	4	23,519	34.1
	5	33,968	49.3
	Total	68,936	100.0

Table 2.
Data set
characteristics

Measurements
This study used a reliable, validated privacy dictionary for automated content analysis, namely, the privacy dictionary developed by Vasalou *et al.* (2011) and refined by Gill *et al.* (2011). "Automated content analysis offers the potential to advance existing analytic tools, either as a method in its own right or in conjunction with other methods" (Vasalou *et al.*, 2011, p. 2096). It is worth noting that neither algorithms nor automated processes are involved in the creation and validation of a dictionary, as its construction, validation, cluster labeling and post-measurement validation are iterative processes that require human design, modification and interpretation (Humphreys and Wang, 2018). In this case, each of the eight categories of the privacy dictionary is based on a broad, context-inclusive definition (Gill *et al.*, 2011). This dictionary was constructed and validated by its authors through interviews and focus groups from different privacy-sensitive (offline and online) contexts. This privacy dictionary was used in the present study to track the presence of privacy elements in OTRs and to systematically measure specific psychological components (i.e. privacy categories) in such a way that words and phrases became the observed variables (Lowe, 2004). Given that these variables have not yet been adopted in tourism research, the present study explored these variables within the hospitality context. Table 3 shows the categorization and scope of each privacy category in accordance with the codification of Gill *et al.* (2011).

This tool was specifically developed for the Linguistic Inquiry Word Count (LIWC) software application. Following the original authors' suggestion, LIWC software

Category	N° of words	Construct description	Examples
Negative privacy	143	Antecedents and consequences of negative privacy experiences	e.g. judgmental, troubled, interfere
Norms requisites	107	Norms, beliefs and expectations in relation to achieving privacy	e.g. consent, respect, discrete
Outcome state	38	Behavioral states and the outcomes that are served through privacy	e.g. freedom, separation, alone
Private secret	58	The "content" of privacy, i.e. what is considered private	e.g. secret, intimate, data
Intimacy	117	Small group privacy marked by group inclusion and intimacy	e.g. trust, friendship, confidence
Law	43	Description of legal definitions of privacy	e.g. confidentiality, policy, offense
Restriction	150	Restrictive and regulatory behaviors for maintaining privacy	e.g. conceal, lock, exclude
Open visible	58	Open and public access to people	e.g. post, display, accessible

Sources: Gill *et al*. (2011); Vasalou *et al*. (2011)

(Pennebaker *et al.*, 2007; Pennebaker *et al.*, 2015) was adopted for the text analysis of guests' reviews, with the aim of detecting their reported privacy concerns. The privacy categories were contextualized by combining quantitative automated analysis with traditional qualitative content analysis. After a LIWC analysis was run with the privacy dictionary, a manual content analysis was performed on the reviews to explore the validity of the dictionary within the hospitality context. Examples of snippets covering each privacy variable are provided herein, offering context-specific narratives of single privacy categories.

To operationalize the construct of cultural proximity, the reviews were grouped into three clusters, namely, independent hotels, American hotel chains (i.e. culturally close hotel chains) and non-American hotel chains (i.e. non-culturally similar hotel chains).

Software and data analysis

In the present study, LIWC was used to detect privacy elements using the privacy dictionary; LIWC is a text mining software application that allows researchers to detect terms belonging to predefined psychologically and cognitively coherent categories (Pennebaker *et al.*, 2003; Pennebaker *et al.*, 2007). Leximancer software was adopted to determine and cluster the most frequently recurring concepts and themes regarding privacy embedded in the text of the guests' reviews. Finally, SPSS was chosen to carry out data elaborations on the LIWC results (e.g. analysis of variances (ANOVAs), post hoc tests and correlation analyses) and to produce descriptive statistics. This study was exploratory in nature, and therefore, did not test for any causal relationships at this stage. To process documents, LIWC carries out text mining and converts words into numbers according to the presence and occurrence of specific words belonging to each dictionary category. Outputs are mostly expressed as percentages of total words or standardized composites (for summary variables only, i.e. analytic, clout, authentic and tone; Pennebaker *et al.*, 2015).

Leximancer software was used to analyze the content of the OTRs, cluster them and describe the privacy discourse by identifying the most frequently recurring privacy concepts and themes and by providing concept maps (Leximancer, 2018). Leximancer

software was chosen for this study because it can easily handle large volumes of unstructured data text, such as user-generated content. By converting text from natural language into semantic patterns in an unsupervised manner, this software identifies concepts within the text and extracts lexical co-occurrence information (Robson *et al.*, 2013). By means of an algorithm, Leximancer software analyzes a given text and depicts the relative importance of words, concepts and themes through size, space and color coding by outputting a conceptual heat map in which the main themes emerge in association with different colors according to their prominence (Cheng and Jin, 2019; Robson *et al.*, 2013; Smith and Humphreys, 2006; Wu *et al.*, 2014). Finally, the SPSS package was used for mean value comparisons (i.e. ANOVAs), descriptive statistics and graphic elaborations.

Findings

Hotel guests' privacy concerns (RQ1)

A privacy-total category comparison of mean values showed that US hotel guests reported privacy concerns most often when traveling to Paris (0.832) and least often when staying in Istanbul (0.734). This indicated that different levels of privacy concerns are associated with different destinations ($F = 16.265$; $p < 0.001$). Furthermore, the highest levels of privacy concerns were experienced by tourists traveling with friends (0.940) or family (0.895) while tourists traveling as couples (0.746) or for business (0.743) tended to be least concerned about privacy ($F = 122.039$; $p < 0.001$).

With regard to the reviewers' socio-demographics, American hotel customers in the 65+ age cohort showed the highest levels of privacy concerns (0.912). Moreover, the distribution of privacy concerns according to age class showed a positive relationship (except for the <24 cohort), in that older guests reported greater privacy concerns ($F = 99.536$; $p < 0.001$). Finally, women tended to report higher levels of privacy concerns (0.829) compared to men (0.788; $F = 32.950$; $p < 0.001$). Table 4 reports these findings and the respective ANOVA test results.

Most frequently discussed categories of privacy (RQ1a)

Figure 1 shows that US hotel guests traveling to Europe mainly reported on the following two categories: *restriction* (i.e. the behaviors that people carry out to protect their privacy) and *outcome state* (i.e. the various behavioral states through which guests achieve privacy and its outcomes).

The restriction was the most frequently discussed category of privacy and refers to the restrictive and regulatory behaviors that guests carry out to maintain expected privacy (Gill *et al.*, 2011). Therefore, restriction includes the actions and feelings of guests that are aimed at protecting their privacy during their hotel stays. Review snippets are discussed herein to clarify the findings related to this category. Several guests exhibited attention to restrictive and regulatory behaviors intended to maintain privacy. Some emphasized the lack of a safe or the weakness of a room lock and embedded the actions and feelings that were needed to maintain their privacy, as in the following example: *There was no safe in the room and they did not have any safes that could fit laptops and in a sparse room it was hard to hide our valuables. The door had a very simple and weak lock. They asked that you leave your key at the desk when out, which only made us feel more insecure* (male, age class: 25–34 years, WA, D.C., traveling to Amsterdam as a couple, staying at a 2-star hotel). Others reported a need to conceal and protect themselves from other guests, as in the case of this female guest: *With its six rooms, we felt like we were staying in someone's home while maintaining our privacy. The entire place is well-appointed including their breakfast room which used to be an old cistern* (female, age class: 35–49 years, New York, traveling to Rome as a couple, this particular

Variable		Privacy-total	Std. dev	Anova
Reviewer age	−24	0.772	0.956	F = 99.536
	25–34	0.695	0.832	$p < 0.001$
	35–49	0.784	0.917	
	50–64	0.865	0.999	
	65+	0.912	1.017	
	Total	0.809	0.946	
Reviewer gender	Woman	0.829	0.939	F = 32.950
	Man	0.788	0.952	$p < 0.001$
	Total	0.809	0.946	
Trip purpose	As a couple	0.746	0.890	F = 122.039
	On business	0.743	0.923	$p < 0.001$
	Solo	0.871	0.973	
	With family	0.895	1.005	
	With friends	0.940	1.037	
	Total	0.809	0.946	
City of stay	Amsterdam	0.797	0.943	F = 16.265
	Barcelona	0.818	0.966	$p < 0.001$
	Istanbul	0.734	0.876	
	Paris	0.832	0.959	
	Rome	0.811	0.944	
	Total	0.809	0.946	

Table 4.
Overall privacy concerns per destination and reviewer's characteristics

guest left a 5-star rating). Finally, other guests discussed protective behaviors carried out to protect their belongings when they were unable to identify an appropriate level of security at the properties in which they were staying, as in the example of this young man: *I could also hear all the guests around me. The walls are paper-thin. The elevator is not big enough for one person and their luggage. The steep stairs are not lit and are very treacherous. The security is non-existent. I won't go into security lapse details to protect other travelers, but I took as many of my valuables as I could carry with me each day* (male, age class: 35–49 years, Seattle, WA, traveling to Paris alone, reporting a negative experience and leaving a 1-star rating review).

The outcome state relates to the static behavioral states and outcomes that are served through privacy (Gill *et al.*, 2011). Review snippets are discussed herein to clarify the findings related to this category. The quest for privacy is an instrumental one; the goal of guests' requests for privacy is in aspects of the outcome state, such as a sense of freedom, separation from undesirable others and the opportunity to have a certain individual space-time dimension. For example, this female guest described the location of her hotel as instrumental to her sense of freedom while exploring her destination: *This little hotel was in a nice part of the city which allowed us the freedom to explore without any concerns* (female, age class: 50–64 years, Boston, MA, traveling in Rome with friends). Signs of other behavioral states and outcomes that are served (or not served) through respect of privacy (or lack thereof) were also evident in the statement of this woman, who clearly claimed her right "to be left alone" and also touched upon the issue of cultural differences: "Most Americans like their privacy. We posted the "Do not disturb (DND)" sign on our door because when we like to be left alone and when we go out, we do not want someone in our room. If we want maid service, we'll call down for it. While we were away, they went into our room even with the DND sign posted on the door" (female, age class: 35–49 years, Pittsburgh, PA, traveling to Paris as a couple, expressing disappointment with a lack of privacy and unauthorized
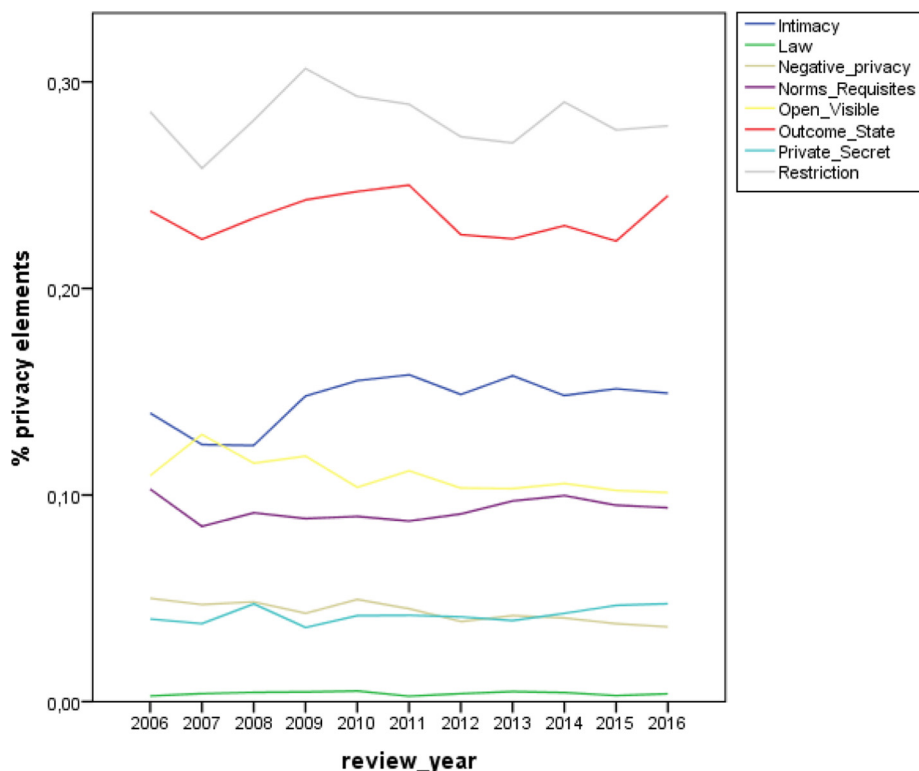
intrusion). The relevance of the outcome state to personal belongings was reported by another female guest: "[...] my sister and I were not pleased that every time we put the "DND/Do Not Clean the Room" sign, we would come back to our hotel with the sign off of the door, our sheets cleaned, beds made. While this would not bothers some people, it really bothered us because we had not locked some things away and were concerned with our privacy. What is the point of even having the sign if they are just going to ignore it?" (female, age class: 25–34 years, New York City, NY, traveling to Paris with friends).

Most frequently recurring concepts and themes in association with privacy concerns (RQ1b)
The Leximancer concept map uncovered the themes and concepts most frequently associated with privacy concerns in US guests' reviews. Concepts with strong semantic meanings were clustered together. The Leximancer map includes concepts (gray nodes) organized into overarching themes (colored circles). Each circle's width is indicative of the respective concept's strength and frequency while the proximity between concepts expresses the strength of their relationship. Concepts that were mentioned together in the text appear graphically closer or overlap on the map. "Room," "hotel," and "breakfast" were identified as three dominant themes discussed by US guests when mentioning privacy concerns in their reviews, followed by "building" and "problem." The position and color of each circle on the map are also critical, given the heat-mapped nature of Leximancer outputs.

The theme "room" emerged first when reviewers discuss about privacy in their reviews, with an overall concept relevance of 43%. That is, guests mainly expressed privacy concerns while reporting their experiences with their rooms and, more specifically, with the following concepts: "bathroom" (17%), "shower" (8%), "door" (6%) and "bed" (5%). In terms of the actual text, the following snippets express the relevance of this theme: *Rooms are well-appointed and surprisingly large. Check-in is done in the privacy of your room* (female, age class: 50–64 years, Montgomery, AL, business trip in Paris). Specifically, most guests reported privacy concerns in reference to their bathrooms at Spanish hotels, as in the following snippets: "*My only complaint about the hotel is a lack of privacy in the bathroom and shower area, which are rather small and separated from the room corridor by the muted glass (so you can def see shades)*" (female, age class: 25–34 years, New York City, NY, visiting Barcelona as a couple) and *There is absolutely no privacy in the bathroom. It is glass enclosed in the room* (female, age class: 50–64 years, Indian Harbor Beach, FL, visiting Barcelona with family). The second privacy-related theme was "hotel" (24% relevance), which included guests who focused on concepts such as "staff" (8%), "service" (5%) and "restaurant" (3%) while reporting on privacy. With respect to the relevance of staff in the privacy discourse, the following snippet is a good example: "The staff wanted me to check in with a stranger sitting at the same desk with me. He was just "hanging out" and I was not comfortable providing passport details, credit cards, etc., that close to a stranger. Definitely not at a 5-star hotel where privacy and security should be a top concern of the owner" (male, age class: 35–49 years, WA, D.C., visiting Istanbul alone). The third identified theme was "breakfast" (6%), which included concepts such as "bar" (3%), "people" (2%) and "morning" (2%). For example, this female guest reported some privacy concerns with respect to her breakfast experience as follows: "The "buzz" from so many people made it impossible to use the Lounge as a place to relax for even a few minutes and sometimes, even to have breakfast comfortably" (female, age class: 50–64 years, Columbus, OH, a business trip to Amsterdam).

Finally, the themes "building" and "problem" were isolated by the software as the farthest according to their association with privacy concerns discussed in guests' reviews. Figure 2 shows the Leximancer concept map with the main themes associated with privacy concerns and Figure 3 reports the ranked concept list.

The privacy discourse over time (RQ2)
The privacy elements embedded in the review text offered a descriptive overview of the privacy discourse of US guests. The privacy concerns discussed in the review text did not exhibit a linear trend over time (Figure 4). Notably, a peak of 0.846% was reached in 2009 after a two-year increase, followed by a sharp decline to 0.787% in 2012. Privacy concerns rose again for two years, reaching 0.812% in 2014, decreased to 0.789% in 2015 and then increased again to 0.805% in 2016. Some effects related to the 2008 financial crisis could explain this trend; indeed, greater consumer awareness of privacy risks might have affected US guests' perceptions of their privacy while traveling overseas.

The role of culture and privacy discourse across different hotel types (RQ3)
To investigate the cultural proximity effect, OTRs were grouped into three clusters, namely, independent hotels, American hotel chains and non-American hotel chains. Descriptive statistics are provided in Table 5. A preliminary analysis of customer satisfaction levels (i.e. ratings) was performed to explore US guests' preferences when traveling to Europe. An ANOVA of the ratings showed that the American travelers tended to prefer independent hotels (4.27) and American hotel chains (4.26) when traveling to Europe while non-American chains had the lowest ratings overall (4.12; $F = 71.051$; $p < 0.0001$).

Figure 2.
Concept map
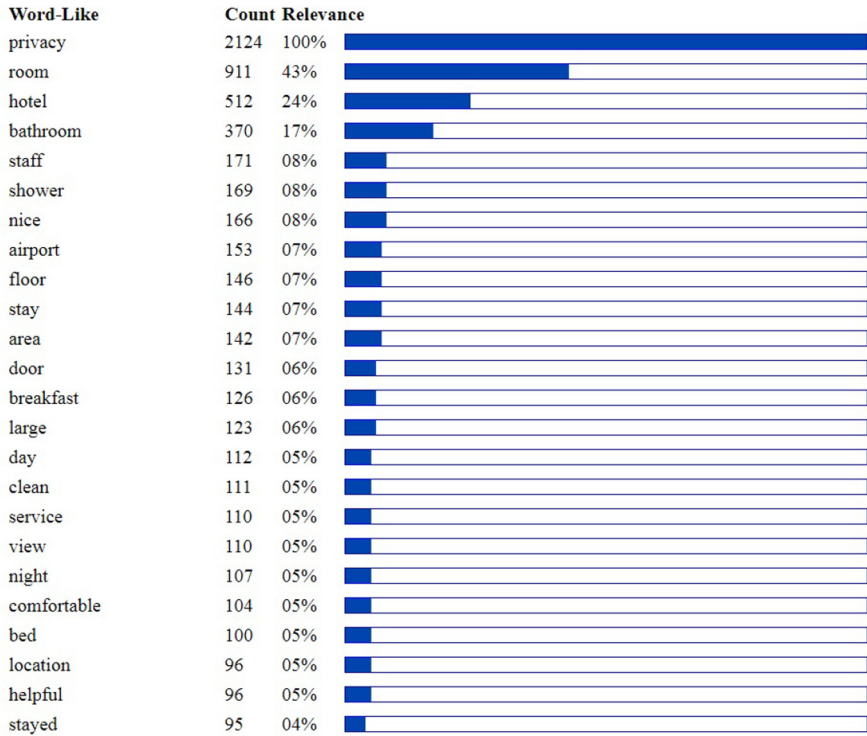
It was deemed appropriate to explore US guests' average ratings over time (Figure 5). The data showed an increasing preference for independent hotels (i.e. non-chain hotels) over American chains, mainly starting in 2013. Nevertheless, with respect to privacy concerns, the guest reviews showed a rather different trend across different hotel types.

As shown in Figure 6, American guests mentioned privacy concerns less frequently when reviewing hotels belonging to American hotel chains. In contrast, they exhibited the highest levels of privacy concerns when staying at independent hotels (i.e. non-chain hotels), followed by non-American chains. These results support the cultural proximity effect. The closeness between guests and the establishment culture may affect privacy issues by reducing the concerns perceived by guests during their stays.

The differences between the mean privacy concern levels per hotel type were statistically significant according to an ANOVA and the least significance difference (LSD) post hoc analysis (Table 6).

Ranked Concept List

| Word-Like	Count	Relevance	
privacy	2124	100%	
room	911	43%	
hotel	512	24%	
bathroom	370	17%	
staff	171	08%	
shower	169	08%	
nice	166	08%	
airport	153	07%	
floor	146	07%	
stay	144	07%	
area	142	07%	
door	131	06%	
breakfast	126	06%	
large	123	06%	
day	112	05%	
clean	111	05%	
service	110	05%	
view	110	05%	
night	107	05%	
comfortable	104	05%	
bed	100	05%	
location	96	05%	
helpful	96	05%	
stayed	95	04%	

Figure 3.
Ranked concept list

General perceptions of a lack of privacy when traveling to Europe were commonly discussed by American guests. To illustrate the discussed privacy concerns and cultural differences, several snippets of the analyzed OTRs are reported herein. These snippets clearly refer to a sharp difference between the USA and Europe; for example, this female guest discussed this issue with respect to her stays at hotels in Rome and Paris: *The bathroom doors were completely seeing through (although they appear to be frosted)! And even if you are comfortable with who you are staying with, how much do they really need to see? This may be more common in Europe; we ran into the same thing in Paris. However, seriously [. . .] I need some privacy* (female, age class: 35–49 years, Port Orange, FL, visiting Rome with family, independent hotel). Similarly, two male guests reported the same type of issue with respect to their visits to Barcelona and clearly referred to a difference between the following two continents: *I have stayed in rooms in Europe which had zero privacy, so if this is the first trip to Europe, be prepared for less privacy than we are used to in the USA* (male, age class: 65+, Long Beach, CA, visiting Barcelona as a couple, non-American chain) and *No privacy locks for bathrooms (must be a Europe thing)* (male, age class: 35–49 years, Stroudsburg, PA, visiting Barcelona as a couple, American chain). The effect of cultural differences on privacy seems to have been captured by the basic but essential components of guests' stays; both mild acceptance and harsher comments about such differences were reported in several of the analyzed OTRs.
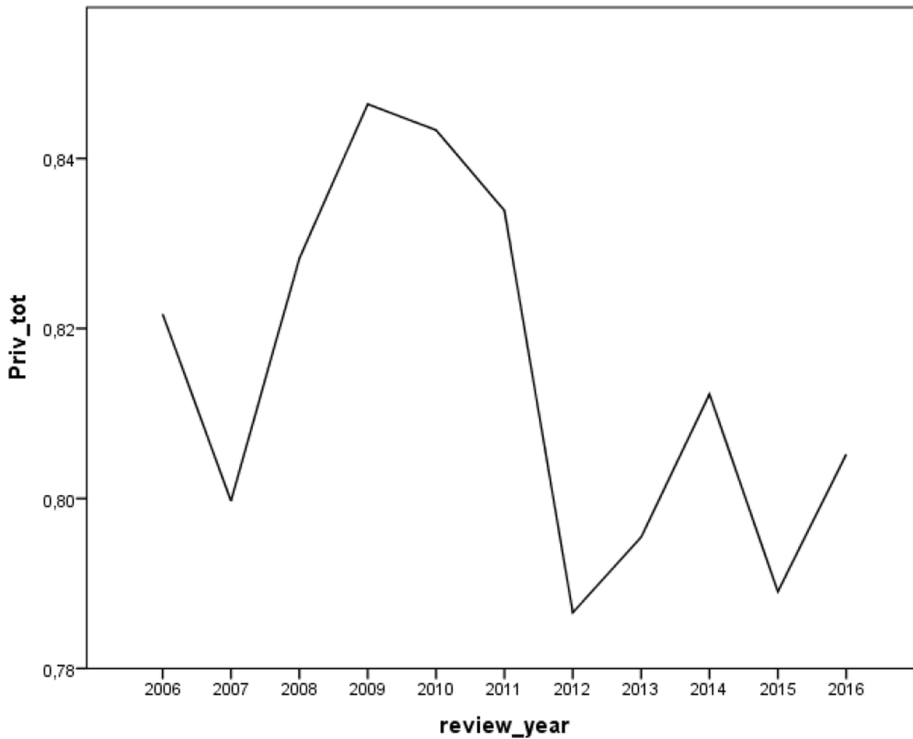
Hotel type	n	(%)	Rating	Std. dev
Independent/non-chain	52,776	76.6	4.27	0.920
American chain	9,861	14.3	4.26	0.903
Non-American chain	6,299	9.1	4.12	0.973
Total		100.0	4.25	0.923

Discussion and conclusions

Conclusions

The present study was a response to the call for research on hotel guests' privacy concerns regarding their physical environments (Tussyadiah *et al.*, 2019). This study investigated privacy concerns by exploring OTRs with text analytics, a reliable and validated privacy dictionary and content analysis. Previous studies have mainly investigated the role of physical privacy with regard to service experience (Otto and Richie, 1996), the relationship between guest privacy and employees (Huang and To, 2018; Keung, 2000), the importance of privacy for celebrities (Goh and Law, 2007) and families (Schänzel and Lynch, 2016) and special settings, such as automated motels (Kim and Kim, 2018) and shared accommodations (Ranzini *et al.*, 2020; Wang *et al.*, 2020). Unlike previous studies, the present study adopted text analytics and big data to explore the sensitive topic of privacy, benefiting from the use of self-reported data (Roster *et al.*, 2014; Volo, 2010) and contributing
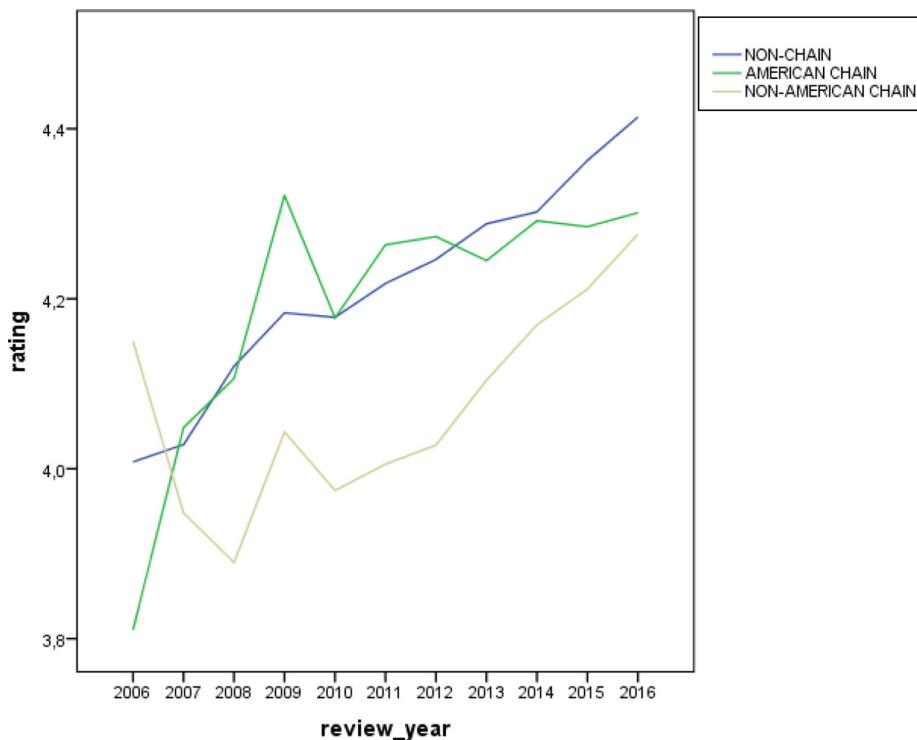
Figure 5.
Average rating per
hotel type

to the literature on big data and social media research in hospitality (Litvin *et al.*, 2018; Nusair, 2020; Nusair *et al.*, 2019). By adopting a longitudinal research design, the present study identified eight main categories of privacy in a sample of 68,000 hotel reviews, thus approaching physical privacy concerns from a new perspective.

This exploratory analysis unveiled how privacy concerns in the hospitality sector mainly revolve around two categories, namely, restriction and outcome state. Furthermore, by isolating and identifying "room," "hotel" and "breakfast" as the most frequently recurring semantic themes expressed in association with privacy by US guests, this paper argues for the need to develop a specific dictionary for the study of privacy in the hospitality sector. Future research agendas should, therefore, consider the intersection between the restrictive and regulatory behaviors undertaken by guests to maintain their expected privacy (i.e. restriction) and the behavioral states and outcomes that are served through privacy (i.e. outcome state) against the semantic themes "room," "hotel" and "breakfast" as a starting point to specialize a privacy dictionary for the hospitality context.

Theoretical implications
This study focused on the literature on hotel guests' privacy concerns and investigated the roles of various factors (i.e. individual, cultural and temporal) in the disclosure of privacy concerns in OTRs. This analysis of the privacy discourse contributed to the privacy and hospitality literature in several ways.
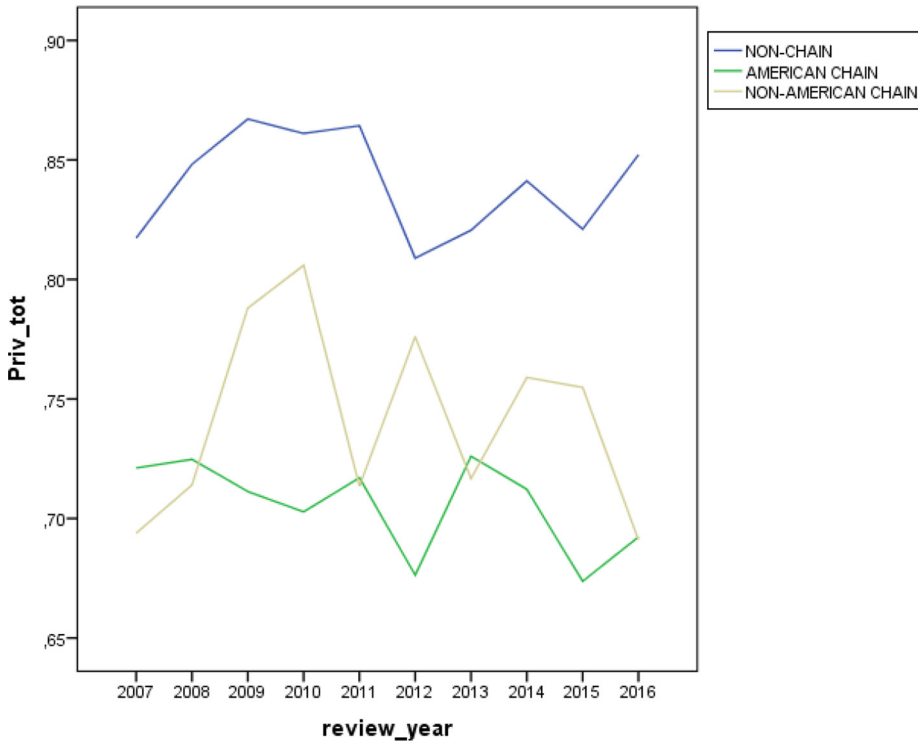
Figure 6.
US guests' privacy
concerns in OTRs per
hotel type

Hotel type	n	(%)	Privacy total	Std. dev	Anova
Independent/non-chain	52,776	76.6	0.838	0.963	F = 107.238
American chains	9,861	14.3	0.699	0.860	$p < 0.001$
Non-American chains	6,299	9.1	0.743	0.913	
Total		100.0	0.809	0.946	

Post hoc (LSD)	Independent/non-chain	American chain	Non-American chain
Independent/non-chain			
American chain	−0.13916*		
Non-American chain	−0.09501*	0.04415*	

Note: *Differences are statistically significant ($p < 0.05$)

Table 6.
Privacy concerns per
hotel type. ANOVA
results and post hoc
analysis

First, the findings revealed the extent of guests' privacy concerns embedded in their hotel reviews, thus addressing the first research question (*RQ1: To what extent do hotel guests mention privacy concerns in their reviews?*). It has been acknowledged that hotels should be aware of the overall privacy perceptions of their guests, as these are relevant to consumer behaviors, brand orientation and trust (Morosan and DeFranco, 2015; Ponte *et al.*, 2015).

Specifically, the findings showed that the destinations, traveling modes and demographics of hotel guests affected their disclosure of privacy concerns. This added to the literature on privacy research in marketing, which discusses the psychological determinants of privacy (i.e. demographic differences, personality differences and privacy experiences; Martin and Murphy, 2017). Interestingly, two new dimensions – the travel destination and the traveling party – emerged as important determinants of privacy concern disclosure. First, some tourism destinations may be more or less strict than others with regard to privacy regulations. Consumers are more likely to disclose their privacy concerns when traveling to countries with higher levels of intrusion into consumers' privacy. For instance, France is one country in which American hotel guests disclose their privacy concerns more frequently than in other countries. This may be due to the new anti-terrorism regulations that were introduced after France suffered various terrorist attacks, which hoteliers must abide by. Second, the results showed that the traveling party also affects privacy concern disclosure. Accordingly, people traveling with friends or family are more likely to disclose privacy concerns than those traveling as couples or for business. Finally, the reviewers' demographics, as an individual factor (Martin and Murphy, 2017), affected the general level of privacy concerns, in line with previous research (Lee and Cranage, 2011; Moscardelli and Divine, 2007). American hotel guests over 65 years of age showed the highest levels of privacy concerns. This result confirmed previous findings that elderly consumers are most concerned about privacy protection (Nunan and Di Domenico, 2019). The relevance of social interaction among consumers has been acknowledged, particularly in reference to elderly reviewers (Altinay *et al.*, 2019; Song *et al.*, 2018). However, the findings of the present study showed that elderly guests were most concerned about their privacy during their hotel stays, indicating a need to investigate the balance between interaction and disclosure in this specific demographic group.

In response to the sub-question *RQ1a* (*What are the main categories of privacy discussed by guests in their reviews?*), the results offered a comprehensive overview of the categories of privacy most frequently discussed in the guests' reviews, with restriction and outcome state being the top two. These findings exhibit how guests tend to express their overall privacy concerns by referring to the behaviors they undertake to protect their privacy during their stays (i.e. restriction) and describing the different behavioral states and coping strategies through which privacy outcomes are reached (i.e. outcome state). This study also provided preliminary information on the associations between guests' privacy concerns and major hotel attributes, with "room," "hotel" and "breakfast" emerging as the most frequently reported themes in association with privacy concerns, thus addressing the sub-question *RQ1b* (*What are the most frequently recurring themes discussed by guests in association with privacy concerns?*).

In response to the second research question (*RQ2: Has the extent of guests' privacy discourse evolved over time?*), the results showed that guests' concerns related to the physical dimensions of privacy did not follow a linear trend, remaining relatively stable over the study period. By analyzing privacy discourse over time, this study advanced the literature on privacy, which is mostly based on cross-sectional studies (Stutzman *et al.*, 2013). Most marketing literature on this topic has confirmed that privacy represents one of the main growing concerns for consumers in the US (Dommeyer and Gross, 2003; Inman and Nikolova, 2017); however, these preliminary findings did not show any particular upward trend with regard to hotel guests' privacy concerns, which seemed to remain relatively steady.

In response to the third research question (*RQ3: What is the* role *of cultural proximity in privacy concerns?*), this study confirmed the role of culture in privacy concerns. Specifically,

this study focused on US hotel guests and their experiences at different hotels in different European cities. By clustering hotels into American hotel chains, non-American chains and independent hotels, the findings offered insights into US guests' privacy concerns in different hotel types. The American guests tended to report fewer privacy concerns when staying at hotels belonging to American chains, whereas independent hotels were associated with the highest levels of privacy concerns reported in the guests' comments. Thus, there is evidence that cultural proximity between hotel guests' backgrounds and the hotel's national culture may influence the overall level of privacy concerns guests experience during their stays. Hotel guests develop motivations and preferences based on their personal notions of privacy, which are influenced by culture. Privacy concerns may affect their decision-making when choosing accommodations abroad. These results were in line with previous findings showing that cultural background influences hotel guests' behaviors and online evaluations when they travel internationally (Hsieh and Tsai, 2009; Leon, 2019; Mariani and Predvoditeleva, 2019; Sann *et al.*, 2020). Furthermore, these results enriched the extant literature on the role of culture in consumers' privacy concerns.

Thus, the present findings confirmed and expanded upon previous research on the importance of cultural traits for hotel chains. Hosts' knowledge of their guests' needs and requirements has been identified as one of the main ownership advantages for international hotel chains (Johnson and Vanetti, 2005) and previous research has documented that cultural proximity may influence hotel chains' choices of market penetration with regard to destinations (Ivanov and Ivanova, 2016). In this vein, knowledge of privacy concerns experienced by guests during their hotel stays represents critical information for both independent and chain hotels aiming to meet customer expectations. In particular, this study showed that US guests reported greater privacy concerns when staying at independent hotels, potentially due to discomfort associated with high levels of cultural distance.

Another contribution of this study relates to the operationalization of privacy concern measurements in offline travel environments (Tussyadiah *et al.*, 2019), providing specific empirical evidence from the hotel industry. From a methodological standpoint, this was the first study to explore hotel guests' privacy concerns through text analytics and content analysis. Publicly available big data have proven to be useful for studying different constructs and offer unobtrusive opportunities to explore tourists' behaviors (Volo, 2018). This study also offered the first application of a privacy dictionary (Gill *et al.*, 2011; Vasalou *et al.*, 2011) in the hospitality domain by specifically focusing on OTRs. By using LIWC to detect the extent of the privacy elements referring to privacy categories and by using Leximancer to cluster the related themes, this study contributed to the ongoing discussion in the tourism and hospitality domain on assessing guests' privacy concerns and their on-site experiential aspects (Tussyadiah *et al.*, 2019).

Practical implications
This contribution offers useful insights for hospitality managers by providing a snapshot of the privacy concerns most frequently discussed by hotel guests in their reviews. These insights can alert hotel owners and managers to aspects of privacy that have been neglected by the literature to date.

First, the results of this study can inform hotel managers about the extent of privacy concerns experienced by their guests during their hotel stays. It is recommended that hotel managers assess guests' privacy concerns by including in their satisfaction surveys some questions about guest privacy in various hotel areas (e.g. rooms, restaurants and common areas) and in their interactions with employees (e.g. managers, front desk staff, housekeepers, room attendants and porters). The results of this study highlighted the

relevance of specific categories discussed by customers when describing their privacy concerns (i.e. restriction and outcome state) and could advance hoteliers' understanding of their guests' most frequently discussed privacy concerns related to hotel and service attributes (i.e. "room," "hotel," "breakfast"). Accordingly, guests mainly reported on the behaviors they undertook to protect their privacy and the outcomes achieved through privacy during their hotel stays. Specific suggestions for hoteliers include providing reassuring settings, for example, by implementing delimited zones in common areas to increase the sense of privacy and using background music and sound-absorbing materials to enhance both comfort levels and auditive privacy. Furthermore, hoteliers should train their staff to provide guests with the highest levels of privacy in select areas. For instance, front desk staff should ensure that guests read the hotel's privacy policy thoroughly and provide any additional information that is necessary.

Second, this paper emphasizes the role of culture – specifically, cultural proximity – in guests' privacy concerns disclosure. When the cultural distance between the hotel and guests is low (i.e. high cultural proximity), the guests exhibit fewer privacy concerns. Local managers of independent hotels should, therefore, try to learn about foreign guests' privacy needs to meet their expectations. Furthermore, hotels could increase the diversity of staff backgrounds, which could help them to reduce cultural gaps with international guests, and thus help them to control guests' privacy concerns at their establishments.

Third, the present study offers implications for marketers working in the hospitality industry. Given that sharing privacy concerns may negatively influence potential customers, it is crucial for reputation managers to rapidly detect and reply to privacy-related reviews to prevent negative electronic word-of-mouth (eWOM) effects (Filieri et al., 2019).

Fourth, the results of this study suggest that hotel managers should harness the value of unobtrusively collected data, such as OTRs, to assess the actual overall level of privacy concerns experienced by their guests. Given the sensitivity of this topic, the use of spontaneously reported data (Volo, 2010) could be beneficial for firms aiming to gather a more reliable view of guest perspectives compared to surveys or interviews.

Fifth, customers frequently mentioned feeling unsafe due to poor protection of their valuables in their hotel rooms. Staff should ensure that all guests have locked safes or consoles in their hotel rooms to store large electronic devices and files. Moreover, guests also frequently mentioned breaches to their privacy caused by hotel staff entering their rooms, even when "DND" signs were on their doors. It is, therefore, recommended that hotel managers train their staff to meet the needs of culturally diverse guests and potentially adopt intelligent access control systems (e.g. facial recognition for room and amenity access) or robot assistants for room cleaning services. These improvements are expected to increase security and reduce privacy issues.

Limitations and future research

This study was not without limitations. First, given the exploratory nature of this study, the data set was based on only one culture. Tourists from different cultures may experience privacy concerns differently. Second, the data set was based solely on TripAdvisor reviews. Although TripAdvisor is the most frequently used travel review platform, comparisons with other online review platforms would be beneficial. Future investigations would benefit from addressing the aforementioned limitations by exploring different platforms, cultures and subcultures. Furthermore, future studies could explore privacy concerns in combination with the different languages used in reviews. Indeed, the literature has shown that review languages have some effects on hotel ratings (Schuckert et al., 2015). Appropriate text analytics would be needed to compare different languages using the privacy lexicon.

This study mainly aimed to provide a perspective on a largely unexplored topic by offering a descriptive viewpoint of guests' privacy concerns. Therefore, this study did not test for causal relationships. Future studies could test the effects of privacy concerns in online reviews on guests' behaviors and on firms' responses. Future research should also consider these elements to better understand the relationship between privacy concerns and the overall guest experience.

Finally, this study focused on the cumulative use of words from a privacy dictionary (Gill *et al.*, 2011; Vasalou *et al.*, 2011); as such, it served as a general privacy metric. Future research could carry out analyses at the individual word level, which would allow scholars to explore the nuances of guest narratives more precisely. This approach could lead to the development of new psychometric measures for hospitality research by identifying context-specific privacy behaviors.

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