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An Empirical Investigation of Culture's Influence in Online Service Ratings: From the Perspective of Uncertainty Avoidance

(Full Paper)

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ABSTRACT

In order to figure out the influence of consumers' cultural background on their online review generation behavior, this study aims to investigate how consumers' uncertainty avoidance values influence their online ratings. Utilizing data collected from a major travel review website, TripAdvisor, we find a negative relationship between uncertainty avoidance degree and online review rating. Consumers' travel type and hotel star are found to have a moderating effect between consumers' uncertainty avoidance and their online ratings. Moreover, the negative effect of uncertainty avoidance value on review rating is weaker for consumers on business travel, and this effect also decreases for upscale hotels. The results are further confirmed by a robustness check using another method. From a theoretical perspective, our study enriches existing literature dealing with online reviews. From a practical perspective, our research findings provide helpful insights to hotel practitioners.

Keywords: Service evaluation, online ratings, cultural differences, uncertainty avoidance, hotel industry.

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INTRODUCTION

With the fast development of information technologies, the role of consumers as receivers of online information has changed. Nowadays, numerous online platforms allow consumers to post online reviews about the merchant, products or service, enabling consumers to share their experiences and opinions with others (Burtch & Hong, 2014). Consumers are increasingly interacting with the Internet as creators by generating user-generated content rather than just accessing the content on the Internet (Gretzel, Fesenmaier, & O'leary, 2006). Online reviews have become to play an important role in consumers' travel-related decision making, especially in hospitality sector (Mauri & Minazzi, 2013) because their products are intangible products, which are more difficult to evaluate before consumers' consumption (Litvin, Goldsmith, & Pan, 2008). Hence, online reviews have been generally accepted as a new marketing strategy (Chen & Xie, 2008). Typically, an online review includes a numerical star rating (usually ranges from 1 star to 5 stars) and an open-ended text comment about the experience of using a product or service and the critique of product or service features (Mudambi & Schuff, 2010). The review ratings are a timely reflection of consumer satisfaction online, usually quantified on a five-point scale from 1 (i.e., very unsatisfied) to 5 (i.e., very satisfied) (Schuckert, Liu, & Law, 2015). Review rating given by a consumer can be used to indicate his or her overall satisfaction with the product or service (Yin, Zhang, & Li, 2014), therefore, review rating can be regarded as a proxy measure of consumers' satisfaction.

According to Hofstede's cultural theory (Hofstede, Hofstede, & Minkov, 2010), the culture of a nation differs from that of others in five dimensions, namely, power distance, long-term orientation, masculinity, uncertainty avoidance, and individualism. A new dimension called indulgence is added to Hofstede's cultural theory recently (Geert Hofstede). Large volume of online reviews enables researchers to investigate consumers' satisfaction, which is reflected by online ratings, through big data analytics. However, scarce research has studied how consumers' cultural background determines consumers' online rating behavior. Gao *et al.* (2018) investigate the influence of consumers' power distance on online ratings in the hotel sector. Hong *et al.* (2016) find that consumers' individualism affects their propensity to conform to the emotionality of prior opinion. Investigating the influence of consumers' cultural background on consumers' rating behavior is particularly important in the hotel industry as the hotel industry has a high level of globalization and involves consumers with different cultural background (Gao *et al.*, 2018). Our work will focus on how the customers' cultural background affects their online rating behavior. Using online hotel review data obtained from TripAdvisor, our study tries to investigate the antecedents of online ratings by figuring out the following two research questions: (1) Will consumers' uncertainty avoidance impact consumers' post-consumption behavior (i.e., consumers' online rating behavior)? (2)

Will hotel class and consumers' travel type moderate the relationship between consumers' uncertainty avoidance and online rating behavior?

The rest of this paper is structured as follows. We first review existing studies related to travelers' behavior and consumers' online review behavior, and then put forward our research hypotheses in Section 2. In Section 3 we present our research methodology and data collection process. In Section 4, we report the empirical results and discuss our main findings. In the final section, we conclude our paper by discussing the contributions, limitations, and future directions of our study.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

The Impact of Uncertainty Avoidance on Online Ratings

Uncertainty avoidance is the degree to which members of a nation feel afraid with the uncertain or unknown situations (Hofstede, 1985). It was introduced as one of the five dimensions (i.e., power distance, long-term orientation, masculinity, uncertainty avoidance, and individualism) of individuals' national culture value (Hofstede *et al.*, 2010). Hofstede (2001) uses a scale ranged from 0 (i.e., very low) to 100 (i.e., very high) to measure the degree of a consumer's uncertainty avoidance. Customers from cultures with a relatively high degree of uncertainty avoidance have a much lower tolerance for ambiguity (Hofstede, 1980, 2001). In contrast, customers coming from cultures with a relatively low degree of uncertainty avoidance have a much higher tolerance for ambiguity (Hofstede, 1980, 2001). Consumers with higher level of uncertainty avoidance would expect more from the service provider.

According to expectation-confirmation theory (ECT) (Oliver, 1980), which is widely used in the consumer behavior field, it is easier for consumers with high expectation to be disappointed. Consumers with too high expectations are easier to be disappointed and feel disconfirmation of their expectations. For example, Wang *et al.* (2008) find Asian travelers usually travel to more developed countries and may have higher expectations of hotel service, the gap between their expectations and the service delivered may lead to lower ratings. Travelers from different cultures have different expectations (Schuckert *et al.*, 2015). Given their high expectations and tougher evaluations, consumers with higher uncertainty avoidance level usually perceived lower product or services quality (Raajpoot, 2004). This will lead to lower consumer satisfaction, which is reflected by lower review rating. Therefore, we put forward our first hypothesis:

H1: Consumers with higher uncertainty avoidance values tend to provide lower review ratings than those with lower uncertainty avoidance values.

The Moderating Role of Hotel Class

Hotel class is an official indicator of a hotel's quality and it may serve as a reference for consumers to adjust their product and service expectations (Xie, Zhang, Zhang, Singh, & Lee, 2016). Generally, all hotels can be divided into five categories ranging from 1 star to 5 stars to indicate the degree of the service that a guest can expect. Mobil Travel Guide clearly defines that can be expected for different levels of hotels (Guide). A Mobil One-Star Lodging Establishment is a limited service Hotel/Motel that is considered a clean, comfortable and reliable establishment. A Mobil Two-Star Lodging Establishment is a Hotel/Resort that is considered a clean, comfortable and reliable establishment, but also has expanded amenities, such as a full-service restaurant on the property. A Mobil Three-Star Lodging Establishment is a Hotel/Resort which is well-appointed, with a full-service restaurant and expanded amenities, such as, but not limited to: fitness center, golf course, tennis courts, 24-hour room service, and optional turndown service. A Mobil Four-Star Lodging Establishment is a Hotel/Resort/Inn which provides a luxury experience with expanded amenities in a distinctive environment. Services may include, but are not limited to: automatic turndown service, 24-hour room service, and valet parking. A Mobil Five-Star Lodging Establishment provides consistently superlative service in an exceptionally distinctive luxury environment with expanded services. Attention to detail is evident throughout the Hotel/Resort/Inn from the bed linens to staff uniforms. Zhang *et al.* (2012) divide hotels into three major categories: economy hotels with 1 star to 2.5 stars, midscale hotels with 3 and 3.5 stars, and luxury hotels with 4, 4.5, and 5 stars. Consumers tend to expect a higher level of service expectations for upscale hotels than low-tier hotels while booking hotels (Zhang *et al.*, 2012).

There is no doubt that consumers' expectations would influence consumers' satisfaction, consequently, Xu and Li (2017) find that consumer satisfaction and dissatisfaction may vary among various types of hotels. Schuckert *et al.* (2015) find that lower class hotels are more likely to generate different satisfaction degrees, indicating hotel class may influence the relationship between consumers' culture values and review ratings. Upscale hotels are believed to have more chance to accommodate travelers from different countries. For example, only hotels with no less than 3 stars are allowed to accommodate foreigners in China. Hence, upscale hotels have more experience in dealing with cultural issues to satisfy consumers. Consequently, the negative influence of consumers' uncertainty avoidance level on online ratings will decrease for upscale hotels. On the other hand, upscale hotels have more support for staff culture training, so employees of upscale hotels have access to knowledge about handling different demands of consumers from different countries. Hence, we propose the following hypothesis:

H2: Hotel class mitigates the negative influence of consumers' uncertainty avoidance on their review ratings.

The Moderating Role of Travel Type

A common method to segment travelers is based on their purpose for traveling, such as business or leisure (Liang, Schuckert, & Law, 2017). Many studies compare travelers for different purpose and find that hotel attributes have different effects on the selection made by travelers with different purpose (Ananth, DeMicco, Moreo, & Howey, 1992; Clow, Garretson, & Kurtz, 1995). Radojevic *et al.* (2015) explore the characteristics of four different categories of hotel consumers including solo travelers, groups of friends, couples, and families, and find that solo travelers assign higher ratings than family travelers. The influence mechanisms of customer satisfaction are different for travelers with different travel purpose (Ye, Li, Wang, & Law, 2014). Travelers for business may pay more attention to work instead of the hotel service they experience, and thus they are less responsive to the uncertainty during their stay in the hotel. In contrary, hotel staying is an important part of travel experience for travelers with leisure purpose, and they are much more sensitive to the uncertainty in the service process. Hence, it is reasonable to argue that the influence of consumers' uncertainty avoidance value on consumers' rating behavior may be different for consumers with different travel purpose. Consequently, we put forward the following hypothesis:

H3: The negative influence of uncertainty avoidance on review ratings is weaker for consumers on business travel than those on leisure travel.

Our research model and hypotheses that explain how uncertainty impacts consumers' online service ratings are shown in Figure 1.

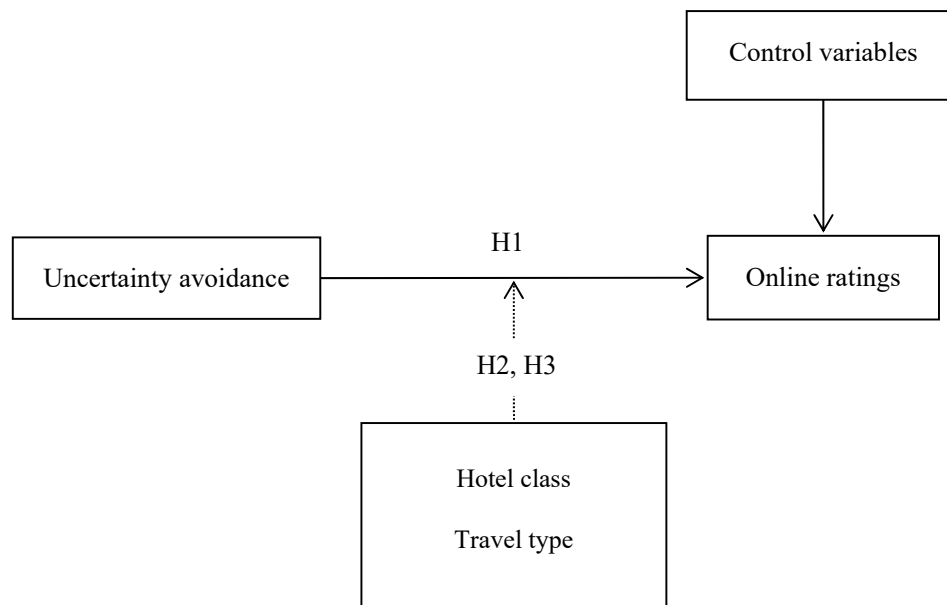


Figure 1: Research Model

RESEARCH METHODOLOGY

Data

TripAdvisor (www.tripadvisor.com), which provides travelers with the wisdom of the crowds to help them make better travel decisions, enables us to investigate our research question. TripAdvisor was founded in 2000 and has become the world's largest travel website with 630 million reviews and opinions covering approximately 7.5 million accommodations, airlines, experience, and restaurants (TripAdvisor). In this research, we developed a crawler to collect review data of hotels from TripAdvisor. In this research, we developed a crawler to collect data of hotel reviews for a matched set of hotels from TripAdvisor. We randomly selected hotels in Texas as our research sample. The data collection procedure was conducted in September, 2017. Every consumer review for a hotel since the hotel joined TripAdvisor was collected. The data contain time stamps and review content (ratings and texts), in addition to reviewer profile and hotel information. We obtained 545,443 reviews in total and the data set includes reviews posted from October, 2002 to April, 2017. As most of reviews are written by reviewers from USA, in order to balance the reviewers' culture background in our data set, we decide to delete observations written by American reviewers. After deleting observations with missing data and reviews written by American reviewers, 30,306 reviews were included in our study. Uncertainty avoidance index data for reviewers were obtained from "The Hofstede Centre" (geert-hofstede.com). The data sources for this study are summarized in Table 1.

Table 1: Data Sources

Data	Data Source
Review, reviewer, hotel data	TripAdvisor
Uncertainty avoidance index	The Hofstede Centre

Main Variables

Dependent variable

Review rating is an integer, ranging from 1 star to 5 stars based on the five-star rating scale of TripAdvisor. Review rating given by a consumer indicates his/her evaluation score for a specific product or service and it can be used to indicate his or her satisfaction with the product (Yin *et al.*, 2014). Theoretically, the higher the rating of a product is, the more positive the consumer's attitudes towards the product is (Lu, Ba, Huang, & Feng, 2013).

Independent variable

Uncertainty avoidance means a society's tolerance for uncertainty and ambiguity (Hofstede *et al.*, 2010). It deals with anxiety and distrust in the face of the unknown, and conversely, with a wish to have fixed habits and rituals, and to know the truth (Hofstede *et al.*, 2010). The uncertainty avoidance level of a country can be determined by the uncertainty avoidance index, which can be obtained from "The Hofstede Centre" (Hofstede). Reviewers' home country data were extracted from self-reported personal information on TripAdvisor.

Moderating variables

We treat hotel class and consumers' travel type as moderators in our study to how they work collectively with consumers' uncertainty avoidance value for impacting consumers' review behavior. *Hotel_Class* is the diamond star of a hotel that indicates the grade of hotels, ranging from 1 star to 5 stars. *Travel_Type* is a reviewer's self-reported travel type for a focal review, including business, family, couple, and so on. Following Ye *et al.* (2014), we divided consumers' travel types into two categories: business travel and leisure travel. Therefore, *Travel_Type* is binary variable with 1 indicating business travel and 0 otherwise.

Control variables

To robustly test the research hypotheses, we also included a comprehensive set of review-, hotel- and reviewer-related control variables.

Review-related control variables include the average rating observed by the reviewers before writing online reviews (*Obs_Avg_Rating*), mobile review, and the observed review volume. The observed average rating is treated as a control variable for studies on online rating behavior because it can be used to capture the effects of social influence among users (Gao *et al.*, 2018; Hong *et al.*, 2016; Ma, Khansa, Deng, & Kim, 2013; Sridhar & Srinivasan, 2012). Mobile review is dummy variable used to measure whether a review is submitted via a mobile device or not, and it equals 1 if the review is written by a mobile device and 0 otherwise. Burch and Hong (2014) find a variety of differences in reviews that are submitted via mobile devices; hence, we take *mobile review* as a review-related control variable. Reviewers' observed review number is also controlled, and the observed review volume (*Obs_Rev_Num*) must also be controlled according to attention-grabbing theory (Shen, Hu, & Ulmer, 2015), which contends that reviewers tend to deviate from the average rating when the review volume of product is large.

Reviewer-related control variables include member age or reviewer tenure, reviewer's review number or reviewer experience, reviewer's power distance and identity information disclosure. *Member_age* is measured by the time interval days between the time when the reviewer registered to become a Dianping user and the time when he/she posted the review, and we controlled for consumer tenure because consumers may grow more positive or negative as they accumulate review experience (Hong *et al.*, 2016). Reviewer's review number (*Reviewer_Rev_Num*) is measured by the number of reviews the reviewer has posted on TripAdvisor. Given that the reviewers' rating behavior may vary as their online experience increases (Goes, Lin, & Au Yeung, 2014; Janze & Siering, 2015), it is reasonable to control reviewers' online experience which is measured by historical review number. Reviewer's *power distance* is defined as "the extent to which a society accepts the fact that power in institutions and organizations is distributed equally" (Hofstede, 2001). Gao *et al.* (2018) confirm that the reviewers from countries with higher power distance tend to provide lower online ratings. Therefore, we take reviewers' power distance value as a reviewer-related control variable. On TripAdvisor, reviewers can decide whether to disclose their personal information, including their location, age, and gender. Given that whether a reviewer disclose his or her identity information may affect the reviewers' online rating behavior (Forman, Ghose, & Wiesenfeld, 2008; Gao, Hu, & Bose, 2017), we used a dummy variable, *Identity_Disclosure*, to denote whether the reviewer has disclosed their gender or age. This variable is equal to 1 if the reviewer has disclosed his/her gender or age, while it is equal to 0 otherwise.

We also include a hotel-related variable, hotel price, as a control variable. Price is found to not only influence consumers' pre-purchase perceptions but also their post-purchase satisfaction (Ye *et al.*, 2014). Hotel price is the average cost per person for the dinner in the restaurant and it is self-reported by restaurants on TripAdvisor. Table 2 provides a summary description for the variables included in our study.

Empirical Model

The Ordinary Least Squares (OLS) estimates are biased because the dependent variable, online rating, is an ordered and censored variable. Consistent with existing literature, we employ the Ordinal Logit model (Gao *et al.*, 2018; Hu & Li, 2011; Huang, Burtch, Hong, & Polman, 2016; Sridhar & Srinivasan, 2012).

Table 2: Variable Description

Variable Type	Variable	Description
Dependent variable	<i>Rating</i>	The overall rating of the hotel given by the reviewer (ranges from one star to five stars).
Independent variable	<i>Uncertainty_avoidance</i>	Hofstede uncertainty avoidance value for a reviewer from a country.
Moderating variable	<i>Hotel_class</i>	The class level of the hotel, ranging from one star to five stars.
	<i>Business_Travel</i>	A binary variable with 1 indicating the reviewer was on business travel and 0 otherwise (for leisure).
Control variable	<i>Obs_Avg_Rating</i>	The average rating of a hotel at the time just before a reviewer posted the review.
	<i>Hotel_Price</i>	Hotel price is the average price of a hotel. It is self-reported by hotels.
	<i>Mobile_Review</i>	A binary variable indicates whether the review was written through a mobile device.
	<i>Obs_Rev_Num</i>	The total number of reviews for a hotel at the time just before a reviewer posted his or her review.
	<i>Identity_Disclosure</i>	A binary variable indicates whether a reviewer disclose his/her identity information.
	<i>Power_Distance</i>	Hofstede power distance value for a reviewer.
	<i>Reviewer_Rev_Num</i>	Up to the time we collected data, the total number of reviews the reviewer has posted on TripAdvisor.
	<i>Member_Age</i>	The number of days in the interval between the day when reviewer was registered to become a TripAdvisor user and the day when he/she posted the review.

RESULTS

Descriptive Analysis

Table 3: Descriptive Statistics of Key Variables

Variable	Obs#	Mean	Std. Dev	Min	Max
<i>Rating</i>	30,306	3.972	1.080	1	5
<i>Uncertainty_Avoidance</i>	30,306	52.075	18.886	8	112
<i>Hotel_Class</i>	30,306	3.155	0.740	1	5
<i>Hotel_Price</i>	30,306	194.651	104.362	42	1196.5
<i>Mobile_Review</i>	30,306	0.130	0.337	0	1
<i>Obs_Rev_Num</i>	30,306	422.483	562.110	1	4001
<i>Obs_Avg_Rating</i>	30,306	4.006	0.567	1	5
<i>Identity_Disclosure</i>	30,306	0.515	0.500	0	1
<i>Power_Distance</i>	30,306	46.585	18.302	11	104
<i>Reviewer_Rev_Num</i>	30,306	67.268	117.873	1	1840
<i>Member_Age</i>	30,306	1207.621	1076.971	0	5305
<i>Business_Travel</i>	30,306	0.353	0.478	0	1

Table 3 reports the descriptive statistics of key variables in our study. As we can see from Table 3, the average value of *rating* is 3.972; *Uncertainty_Avoidance* ranges from 8 to 112, and the mean and standard deviation value of it are 52.075 and 18.886;

Hotel_Class ranges from 1 star to 5 stars and the average value is 3.155; *Hotel_Price* ranges from 42 dollars to 1196.5 dollars with the mean value of 194.651; About 13% reviews are posted through mobile devices; The average value of observed review number is 422.483 and the average rating of observed reviews is 4.006; More than half (51.5%) of reviewers disclose their identity information; *Power_Distance* ranges from 11 to 104, and the average value of it is 46.585; There are large differences in reviewers' online experience, which is measured by *Reviewer_Rev_Num* and *Member_Age*; 35.3% of reviews are written by reviewers on business travel. In order to reduce the skewness of *Reviewer_Rev_Num*, we use its logarithm value in the correlation matrix and regression analysis.

Table 4 provides the correlation matrix and Variance Inflation Factor (VIF) values of main variables in our main study. All the correlations are smaller than 0.7 and all VIFs are smaller than 5, therefore, multicollinearity is not a threat to our study (Mason & Perreault Jr, 1991).

Table 4: Correlation Matrix and VIF Values of Key Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.00													
2	-0.03	1.00												
3	0.16	-0.06	1.00											
4	0.19	-0.09	0.71	1.00										
5	-0.03	-0.00	0.03	0.03	1.00									
6	0.10	-0.04	0.46	0.39	0.11	1.00								
7	0.38	-0.04	0.33	0.33	0.04	0.24	1.00							
8	-0.01	-0.10	0.05	0.05	-0.02	-0.05	0.01	1.00						
9	-0.03	0.49	-0.04	-0.09	-0.02	-0.05	-0.04	-0.07	1.00					
10	-0.03	-0.12	0.08	0.09	0.14	0.00	0.05	0.54	-0.13	1.00				
11	-0.02	-0.09	0.06	0.07	0.12	0.14	0.08	0.32	-0.09	0.44	1.00			
12	-0.00	0.02	0.22	0.13	-0.05	0.04	0.10	-0.03	0.09	-0.07	-0.09	1.00		
13	0.03	-0.03	-0.00	-0.00	0.02	0.01	0.02	0.02	-0.06	0.05	0.02	-0.01	1.00	
14	0.00	0.62	-0.04	-0.05	0.01	-0.01	-0.01	-0.04	0.20	-0.05	-0.04	0.02	0.16	1.00
VIF		2.16	2.31	2.09	1.05	1.36	1.16	1.45	1.37	1.64	1.31	1.08	1.06	1.76

Notes: 1: *Rating*; 2: *Uncertainty_Avoidance*; 3: *Hotel_Class*; 4: *Hotel_Price*; 5: *Mobile_Review*; 6: *Obs_Rev_Num*; 7: *Obs_Avg_Rating*; 8: *Identity_Disclosure*; 9: *Power_Distance*; 10: *Ln_Reviewer_Rev_Num*; 11: *Member_Age*; 12: *Business_Travel*; 13: *Uncertainty_Avoidance * Hotel_Class*; 14: *Uncertainty_Avoidance * Business_Travel*

Table 5: Effects of Uncertainty Avoidance on Online Ratings

Variable	Coef.	Std. Err.	z	P> z
<i>Uncertainty_Avoidance</i>	-0.002***	0.001	-2.65	0.008
<i>Uncertainty_Avoidance * Hotel_Class</i>	0.002***	0.0008	2.97	0.003
<i>Uncertainty_Avoidance * Business_Travel</i>	0.003***	0.001	2.81	0.005
<i>Hotel_Class</i>	0.011	0.022	0.50	0.614
<i>Hotel_Price</i>	0.002***	0.0002	12.55	0.000
<i>Mobile_Review</i>	-0.161***	0.032	-4.96	0.000
<i>Obs_Rev_Num</i>	-0.0001**	0.00002	-2.91	0.004
<i>Obs_Avg_Rating</i>	1.249***	0.022	57.75	0.000
<i>Identity_Disclosure</i>	0.054**	0.026	2.11	0.035
<i>Power_Distance</i>	-0.0002	0.007	-0.34	0.737
<i>Ln_Reviewer_Rev_Num</i>	-0.123***	0.008	-15.58	0.000
<i>Member_Age</i>	-0.00007***	0.00001	-6.24	0.000
<i>Business_Travel</i>	-0.314***	0.023	-13.39	0.000
Cut 1	1.309***	0.101		
Cut 2	2.255***	0.100		
Cut 3	3.552***	0.101		
Cut 4	5.278***	0.104		
Obs#	30,306			
LR Chi ²	5178.71***			
Pseudo R ²	0.0642			

Notes: *: $p < 0.1$; **: $p < 0.05$; ***: $p < 0.01$.

Main Analysis

Stata 14.0 is used to process our data set, and the final results are reported in Table 5. As shown in Table 5, the coefficient of uncertainty avoidance on ratings is significantly negative, supporting the hypothesis of the negative relationship between uncertainty avoidance and online ratings (*H1*). Both interaction terms are significantly positive, indicating hotel class and the reviewer’s travel type (whether he or she is on business travel) mitigate the negative influence of uncertainty on online ratings. Hence, *H2* and *H3* are supported.

Robustness Check

We also check the robustness of our findings using an alternative estimation method, which is ordinary least square (OLS) regression. Table 6 presents the results of robustness check. The results are consistent with those of our main analysis. Therefore, the various estimation methods demonstrate robustness of our study.

Table 6: Results of Robust Test

Variable	Coef.	Std. Err.	t	P> t
<i>Uncertainty_Avoidance</i>	-0.002***	0.0004	-3.68	0.000
<i>Uncertainty_Avoidance * Hotel_Class</i>	0.001***	0.0004	2.82	0.005
<i>Uncertainty_Avoidance * Business_Travel</i>	0.002***	0.0006	3.41	0.001
<i>Hotel_Class</i>	0.016	0.012	1.37	0.171
<i>Hotel_Price</i>	0.001***	0.00008	10.76	0.000
<i>Mobile_Review</i>	-0.106***	0.017	-6.12	0.000
<i>Obs_Rev_Num</i>	-0.00003***	0.00001	-2.67	0.008
<i>Obs_Avg_Rating</i>	0.683***	0.011	63.06	0.000
<i>Identity_Disclosure</i>	0.038***	0.011	2.76	0.006
<i>Power_Distance</i>	-0.0001	0.0004	-0.35	0.728
<i>Ln_Reviewer_Rev_Num</i>	-0.029***	0.004	-7.06	0.000
<i>Member_Age</i>	-0.00004***	0.000006	-6.07	0.000
<i>Business_Travel</i>	-0.132***	0.012	-10.63	0.000
Obs#	30,306			
F (13, 30292)	427.19***			
Adjusted R ²	0.1546			

Notes: *: $p < 0.1$; **: $p < 0.05$; ***: $p < 0.01$.

CONCLUSIONS AND DISCUSSIONS

Conclusions

The main purpose of this study is to figure out the collective influence of consumers’ culture value, hotel class, and consumers’ travel type on rating behavior. The results of the hypotheses testing are reported in Table 7. Our findings show that consumers’ uncertainty avoidance degree has negative influence on consumers’ online rating behavior. Moreover, the negative effect of uncertainty avoidance on review rating is weaker for consumers on business travel, and this effect also decreases for upscale hotels.

Table 7: Summary of Hypotheses Testing

Hypothesis	Result
<i>H1: Consumers with higher uncertainty avoidance values tend to provide lower review ratings than those with lower uncertainty avoidance values.</i>	Supported
<i>H2: Hotel class mitigates the negative influence of consumers’ uncertainty avoidance on their review ratings.</i>	Supported
<i>H3: The negative influence of uncertainty avoidance on review ratings is weaker for consumers on business travel than those on leisure travel.</i>	Supported

Implications

Our study has both theoretical and practical contributions. From a theoretical perspective, our study offers insights for existing literature dealing with online reviews. First of all, our study focuses on online review generation mechanism, which is often neglected by researchers. Second, our work demonstrates the value of consumers’ uncertainty avoidance on consumers’ online review writing. From a practical perspective, our research findings provide helpful insights to hotel practitioners. Given that consumers’ uncertainty avoidance value has a negative impact on consumers’ online ratings for hotels, hence, hotel managers should pay more attention to online reviews written by reviewers from higher uncertainty avoidance value nations and provide

timey managerial response to the negative reviews. Also, in order to obtain accurate and objective feedback from consumers, hotel managers must synthesize the online ratings provided by reviewers from countries with various levels of uncertainty avoidance values.

Limitations and Future Work

This study inevitably is subject to some limitations. First, a convenience sampling method was used. We used hotels in Texas as our research sample, which is just a small part of hotels registered on TripAdvisor. Future work should include more hotels from cities worldwide to improve the generalizability of the results. Second, we test our hypotheses only in the context of hotel business and in other platform of TripAdvisor, and we can empirically test our research model in other domains such as catering industry and in other online review platforms to obtain better external validity in the next step. Third, besides consumers' travel type and hotel class, other factors related to consumers or hotels may also have moderating effect for the relationship between consumers' uncertainty avoidance and online ratings. Therefore, it is advisable to consider more factors and conduct a more comprehensive research model to investigate consumers' online rating behavior during travel to enrich our study.

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