


Valuing Your Patient's Opinion: Online Patient Reviews and Power Distance

Alan Yang, University of Nevada, Reno, USA*

Caihua Liu, Guilin University of Electronic Technology, China

Amir Talaei-Khoei, University of Nevada, Reno, USA

Guochao Peng, Sun Yat-sen University, China

 <https://orcid.org/0000-0003-1206-5509>

ABSTRACT

Online reviews have a continuing impact across all industries. Even industries with highly skilled workers are affected by online reviews, despite large gaps in experience and skill between reviewers and reviewees. The authors conducted a study amongst physicians in Nevada and China to measure the perception of online patient reviews from the perspective of healthcare providers to explore whether this skill gap affected the perception of online reviews. The authors distributed and collected survey responses from over 200 physicians and used structural equation modeling techniques to evaluate the relationships. These findings show that physician perception of online patient reviews is partially mediated by power distance, direct effects exist between the relationships identified in our model, and that cross-cultural effects are present between physician responses across Nevada and China. This study expands the existing work in the field of review evaluations by operationalizing social-psychological distance into the construct of power distance within the context of healthcare.

KEYWORDS

Culture, Healthcare, Online Reviews, Power Distance

INTRODUCTION

Valuing Your Patient's Opinion: Online Patient Reviews and Power Distance

Online consumer reviews have had an undeniable impact on the way businesses manage their interactions with customers and adapt their operations to feedback (Banerjee et al., 2017). The majority of consumers influenced by online reviews has created a noticeable shift in the way business owners manage expectations and respond to consumer feedback (Sargeant et al., 2008). Online reviews have also shown a significant impact in the field of healthcare. According to Review Trackers (2018), 84% of patients refer to review sites to find a physician. There has been a large body of evidence in literature that online patient reviews (OPR) can predict outcomes of a healthcare provider and can serve as a potentially valuable but inexpensive antecedent for quality of care in healthcare settings (Bardach et al., 2013; Holliday et al., 2017a; Lagu et al., 2019).

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*Corresponding Author

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This research focuses on the provider's perspective on helpfulness of online reviews in the context of the healthcare environment. The popularity of online consumer reviews suggests that these data may have downstream effects on healthcare providers. The authors want to explore the underlying social psychological mechanisms that drive a physician's perception about a review's helpfulness and approach the question of online review efficacy from the side of the service provider rather than the consumer.

In order to understand why an OPR is influential for a physician, it is not sufficient to study the source of the review (Ghose & Ipeirotis, 2010) but it is also necessary to study the reader's interpretation of the review itself (Huang et al., 2011). It has been noted that the effect of online reviews depends on their characteristics. Within the healthcare literature, characteristics of online reviews have focused on the source of the review and patient awareness of quality reporting (He et al., 2022). Similar to the broader online review literature, most of the focus is placed on the consumer-patient side of online reviews (Anhang Price et al., 2014; G. Gao et al., 2012; Hanauer et al., 2014). In an exploration of the interpersonal context of online reviews, a study documented in Hernández-Ortega (2018) examines the role of social psychological distance that explains the receiver's perception of review credibility and subsequent reviewer behavior in reaction to individual reviews. The authors focus specifically on the construct of social psychological distance explored in the paper and relate it to the relationship between patients and physicians. Furthermore, they operationalize the construct of social psychological distance to that of power distance in examining the physician-patient relationship as it relates to perception of OPRs and physician valuation of online reviews.

This paper aims to study whether the power distance perceived by the physician when evaluating an OPR is an underlying mechanism that influences the relationship between review characteristics and the physician's perception about the helpfulness of the review. Therefore, this paper seeks to answer the following research question:

RQ: How does power distance influence physicians' perspective about helpfulness of an online patient review?

Using the theoretical lens of construal level theory (Trope et al., 2007) grounding power distance (Farh et al., 2007), and social-psychological distance constructs, this paper provides two contributions to the literature of online patient reviews. First, the authors examine the phenomenon of online reviews within the healthcare space. While this cross-section of literature is not completely unexplored, there is opportunity for more advancement and analysis of the physicians' perspective as the body of literature mainly focuses on the patients' perspective. The second contribution is the application of social-psychological distance to the space of online reviews and the use of power distance as an operationalization of the construct mediating the effect between reviewer characteristics and perception of a review. Figure 1 positions this work built on top of the model proposed by Hernández-Ortega (2018). The main difference between this work and Hernández-Ortega (2018) is that the authors study the provider's response as opposed to consumers' perception.

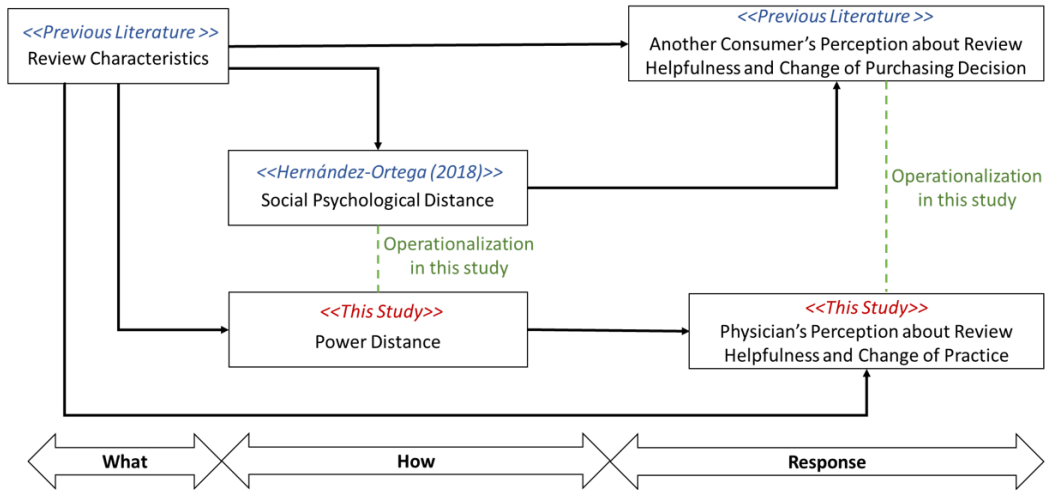
The rest of this paper is organized in the following way: The next section proposes the hypotheses tested in this study based on the supported literature; following this, the authors present their research methodology. The next section provides the results of the present study, and the authors then discuss their research findings and conclusion.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Physician Evaluation

Patient surveys are a common method for determining patient satisfaction and their experiences within a healthcare system. The measures of interest are varied, but a commonality between them is

Figure 1. Contribution space of this study



the purpose of the surveys to measure patient satisfaction (Xanthidis & Xanthidou, 2021; Xia et al., 2020). Multiple instruments exist with a variety of different constructs in order to measure these factors (Davis et al., 1995; Ramsey et al., 1993). Some constructs include patient trust in a physician, patient access to care, physician communication, and patient perception of physician knowledge (Hunt et al., 1998; Yegian et al., 2013). These surveys with data provided by patients are one facet in determining physician performance. Another method of physician evaluation is third-party aggregator sites that provide direct access to online patient reviews.

Physicians often trust reviews from an internal source more than reviews from public or third-party aggregator sites (Lagu et al., 2019). Studies document physicians stating that online and third party reviews are not reflective of their practice due to the lack of standardization across surveys and the insufficient depth of survey questions. Another reason for higher trust in hospital-administered surveys is the perception that patients with negative experiences are more likely to leave anonymous online reviews (Kirkpatrick et al., 2017). Conversely, patients tend to distrust the results of internal hospital surveys. Most individuals reading online reviews with the intent to select a physician tend to place more trust in a review from a public online platform, and will trust a singular, experiential review written by a patient compared to statistics released by a hospital on performance (Widmer et al., 2018)

Online Reviews

There is a growing body of literature focusing on the effect of online consumer reviews on purchase decisions (Guo et al., 2020; Singh et al., 2017). The main approach adopted by these studies promotes the context of communication defined as “who said what to whom and with what effect” (Musah-Surugu et al., 2019; Park & Kim, 2008). Appendix A provides a comprehensive but integrated review of empirical studies on the characteristics of patients’ online reviews and their effect on other patients’ decisions. The variables related to review characteristics have shown significant impact on other patients’ decisions (Xiao et al., 2021; Xiao & Li, 2019). Studies looking into review characteristics as the main antecedent of an effective OPR that can change a patient’s decision on choice of a physician focus on the review as the main stimulus in communication.

The authors’ analysis of literature suggests that studies in this area overlooked the effect of reviews on provider interpretation and response to reviews. Physicians have a broad range of responses to reviews about their performance (Xia et al., 2020). Literature on performance evaluation show that

individuals will be more skeptical and critical of the instruments evaluating their own performance compared to instruments evaluating the performance of others, even if it is within a closely related field (Boroon et al., 2021; Rich et al., 2010). Literature on physician responses to their own evaluations shows that this pattern holds true within the healthcare context (Chen et al., 2018; Holliday et al., 2017b; Segal et al., 2012). The source of the review is noted as another predictor of physician evaluation of patient review helpfulness. However, there is ambiguity around how review characteristics affect physicians' perspective about helpfulness of a review. The authors propose drawing attention to the role of psychological mechanisms to examine the impact of review characteristics on physician perspectives of OPRs.

Psychological Mechanisms

There is a body of literature that highlights the role of the receiver of reviews. These studies state that the same review may engender different effects on different people. They argue the personal characteristics of people may derive different effects of the same review on them (Tsao et al., 2015). Despite the extensive research in this area, there is limited literature on how these characteristics generate different effects on different individuals. Hernández-Ortega (2018) studies social psychological distance between the reviewer and the receiver focusing on similarities and dissimilarities between these individuals as a driver of receivers' response to a same review. They build their study on construal level theory (Trope et al., 2007) and propose that individuals reading a review are more likely to be influenced by the review if they perceive the writer of the review to be similar to themselves.

Construal Level Theory and Psychological Distance

Construal Level Theory (CLT) suggests that an individual has different mental representation of the same object, event, or other people, which is related to the psychological distance that the individual perceives between the object and themselves (Trope & Liberman, 2010). CLT proposes that high psychological distance draws the individual's attention to the primary features of stimuli, while low psychological distance results in increased attention to incidental features. Psychological distance has four different dimensions; namely temporal, special, hypothetical (certainty versus uncertainty), and social distance (Trope et al., 2007).

Hernández-Ortega (2018) studied the influence of receiver's characteristics on the effect of a review focused on social psychological distance between the reviewer and the receiver of the review making a purchasing decision. Research shows that individuals are more likely to be involved in more intimate interactions with individuals they consider socially close. This is because the individual can make a more concrete and accurate mental representation of them than for more socially distant people (Idson & Mischel, 2001).

This study proposes power distance as a construct to operationalize social psychological distance perceived between a provider and a reviewer. This study examines how OPR characteristics influence the physician's responses, including her/his evaluation of review. From this the authors present hypothesis one:

H1: A direct effect exists between a physician's perceived review characteristics and the physician's valuation of the review.

Power Distance and Healthcare

Hofstede et al. (2010) defined power distance as the extent of and individual's acceptance that "power in institutions and organizations is distributed unequally." The concept of social psychological distance adopted by Hernández-Ortega (2018) in online consumer reviews can be extended to the social distance perceived by a provider and their reviewer. However, the definition of social psychological

distance as a way to represent interpersonal dissimilarities may not be a valid, as the provider has a different role than the reviewers and may not empathize completely with them. Power distance is a possible construct through which one can examine this psychological gap.

This study explores the role of power distance as a social-psychological mechanism. Existing literature on power distance and online reviews shows that there is typically a negative association between a higher power distance from a reviewer and the average rating of an online review (B. Gao et al., 2018; Leon, 2019; Stamolampros et al., 2019). The power distance in the context of online reviews is from the perspective of the customer to the service provider, and is a combination of cultural perceptions on both online reviews and the services customers are leaving a review for (Biswas et al., 2021; Fang et al., 2013; Kim, 2019). Appendix B contains a review of contemporary work on power distance and its association with online reviews. In this study, power distance is used as a reflection of the relationship between the patient and physician. The novelty of this proposed design is that the authors emphasize the role of power distance from the perspective of an individual being reviewed.

The power distance relationship between a patient and a physician is inverted when compared to the power distance relationship of hospitality industries, the typical contexts for online review studies. In evaluating feedback, physicians tend to distrust online reviews from third party sources and feel as if they are not reflective of their practice. While this distrust is due to many factors, a major factor is the lack of verifiability of the reviewer providing the review and the lack of expertise on the part of the reviewer compared to the physician being reviewed (Lagu et al., 2019; Widmer et al., 2018). The authors propose that the effect of review characteristics on a physician's valuation of a review can be affected by the amount of power distance the physician feels between themselves and the patient who provided the review. From this discussion, the authors propose hypotheses two and three:

H2: Power distance is negatively related to physician evaluation of online reviews.

H3: The effect between a physician's perceived review characteristics and a physician's evaluation of an online review is moderated by the construct of power distance.

The power distance and its effects on decision making has extensions in the field of healthcare. For example, (Yang et al., 2020) demonstrated that a higher level of power distance is associated with a higher level of fear of medication error reporting. This results in a negative outcome of healthcare providers failing to report medication errors due to being overly concerned with consequences, both real and imagined, due to their internal perception of power distance. This directly results in situations that can adversely affect patient wellbeing. Healthcare providers who were surveyed to be higher in power distance predicted less desire for decision-making influence (Alden et al., 2015). While Polsa et al. (2013) showed that perceived service quality of healthcare providers by patients is dependent on their perception of provider expertise and confidence in decision making. Based on the findings from these prior studies, the authors propose that the effect of power distance on physician decision making extends to the evaluation of OPRs as well, specifically that a physician with a higher perception of power distance between physician and patient is less likely to consider the characteristics of a review, because of this perceived social gap between reviewer and reviewee.

From this analysis, the authors propose hypothesis four:

H4: Power distance is negatively related to physician's perceived review characteristics.

RESEARCH METHODOLOGY

To answer the research question and test their hypotheses, the authors identified the relevant populations to study cultural differences in power distance as it pertains to physicians and OPRs. For this study, they selected China and the State of Nevada in the United States as their data collection

sites due to their generalized differences on cultural values resulting from their own recent economic, democratic, and information technology development (D. Zhu et al., 2017). The authors used a survey to gather information at the physician level to better understand how the construct of power distance might affect the perception of online reviews. Online physician reviews are consistently used across both the United States and China; the authors' focus was to measure the impact these reviews had across cultures and differing levels of perceived power distance between physician and patient.

Country Selection

Individuals in China and the United States generally possess different levels of power distance (Hofstede et al., 2010). As such, both countries were selected in the present study with the intention of utilizing individuals that embrace different cultural values to evaluate the influence of cultural values on physicians' perspective about helpfulness of OPRs. Within the United States, the focus was on the State of Nevada as the source of physician data. The reason for this focused scope is that the healthcare system in the United States can vary greatly in evaluation and standards between states. To minimize the possibility of data being confounded because of different healthcare procedures and standards, the data collection was specified to include only physicians from Nevada. There was no narrowing process for physician responses from China, as the standards and protocols are consistent across healthcare providers across the nation.

Instrumentation

To test the proposed hypotheses, the authors adopted a survey methodology. A three-step process was conducted to determine the most relevant aspects on evaluation of an OPR, as suggested in Hernández-Ortega (2018). First, the authors reviewed the extensive literature on online reviews and OPRs to obtain the most frequently used aspects of online reviews for evaluation, namely, review characteristics. Then they eliminated the aspects not referring to the content of an online review (e.g. review volume and review source). Second, they visited and analyzed the public review platforms related to healthcare (e.g. Haodaifu and Google Maps) and removed the aspects that could have an impact on an individual's perception of cultural values, such as geographical location. Last, the authors conducted a pretest with OPR receivers (i.e. physicians) to see whether the included review's characteristics covered the main aspects of OPR in their evaluation for usefulness of reviews. From the pretest, the authors determined the final review's characteristics used in the survey. Accordingly, the measurement items of this study were operationalized as presented in Table 1. The table also provides definitions for each variable. All survey questions were adapted from the relevant literature.

The questionnaire used to collect data in this study begins with a cover letter that explains the purposes of the study and includes two parts. The first part presents the questions regarding the demographic information of participants and their clinical settings. The second part concerns the measurement items used in this study (see Table 1) based on a 5-point Likert scale as follows: 1 = "Strongly disagree," 2 = "Disagree," 3 = "Neutral," 4 = "Agree," 5 = "Strongly agree." The 5-point Likert scale was used because it allows respondents to express their perspective with unambiguous answers that facilitates data analysis and can be explained without difficulty (Croasmun & Ostrom, 2011; Leung, 2011). The authors first created the survey in English, and then proceeded with the following translation procedures. One coauthor of the paper, whose native language is Chinese, first translated the survey questions from English to Chinese, and another researcher outside the research group, who is bilingual in English and Chinese, reviewed the translation. Then, the coauthor back-translated the survey questions from Chinese into English; the bilingual researcher also reviewed these questions. These steps were repeated twice to validate the accuracy of the translation.

Data Collection

The English version of the survey was created and tracked on the Qualtrics platform and distributed to physicians working in the State of Nevada in the United States between October 13, 2020 and

Table 1. Measure scales of this study

Variable	Definition (reference)	Indicator	Survey Question Adapted	Sources of Survey Questions
Perceived review characteristics	The aspects of evaluating an OPR, including review timeliness, valence (negative/positive), deviation, grammar, length, emotion (objective/subjective), reviewer's gender (see sources of survey questions)	PRC1	Recent reviews are more useful than older ones	Adapted from (Wang et al., 2019)
		PRC2	Negative reviews are more useful than positive ones	Adapted from (Hong et al., 2017)
		PRC3	A review that is different from average reviews is more useful	Adapted from (Hong et al., 2017)
		PRC4	Grammatically correct reviews are more useful than reviews with grammatical errors	Adapted from (Schindler & Bickart, 2012)
		PRC5	Lengthy reviews are more useful than shorter ones	Adapted from (Lee & Choeh, 2018)
		PRC6	Emotionally objective reviews are more useful than emotionally subjective ones	Adapted from (Chen et al., 2018)
		PRC7	Reviews from male reviewers are more useful than reviews from female reviewers	Adapted from (Sethna et al., 2017)
Evaluation of online reviews	Determination of the values of online reviews (adapted from prior studies (Chen et al., 2018; Holliday et al., 2017a, 2017b; Segal et al., 2012))	EVN1	Have you ever visited a physician rating website and looked at online reviews about your practice?	Adapted from Holliday et al. (2017a)
		EVN2	Your online reviews are consistent with how you view your performance	Adapted from (Sargeant et al., 2008)
		EVN3	Reviews from public review sites such as Haodaifu (or google maps) are useful	Adapted from Holliday et al. (2017a)
		EVN4	You would consider changing your practice in accordance with a comment from a review.	Adapted from Holliday et al. (2017a)
Power distance	The extent to which individuals accept power differences between patients and physicians that is distributed unequally (adapted from Hofstede et al. (2010))	PWD1	Patients do not have power and authority to influence their care	Adapted from (Oloko & Ogutu, 2017)
		PWD2	Patients should not disagree with physicians	Adapted from (Oloko & Ogutu, 2017)
		PWD3	Physicians should not seek patient opinion in designing their care plan	Adapted from (Oloko & Ogutu, 2017)
		PWD4	Patients should not deviate from prescribed care plans	Adapted from (Oloko & Ogutu, 2017)
		PWD5	Physicians have authority and power	Adapted from (Oloko & Ogutu, 2017)
		PWD6	Patients place high value on conformity	Adapted from (Oloko & Ogutu, 2017)
		PWD7	There should be a distance between physicians and patients in terms of their authority	Adapted from (Oloko & Ogutu, 2017)
		PWD8	It is frequently necessary for physicians to use authority and power when dealing with patients	Adapted from (Oloko & Ogutu, 2017)

December 12, 2020. The survey was sent to practicing general practitioners in the Nevada area and had a total of 99 respondents. After removing 9 duplicate submissions, the final total of respondents from the United States included in the analysis was 90.

The Chinese version of the survey questionnaire was implemented using the wjx.cn platform (between October 13, 2020 and December 12, 2020). The authors sent the link of the questionnaire to physicians working at Chinese clinical settings and also posted the link at social media platforms such as WeChat Moments, and DXY.cn (one of the largest online healthcare professionals' community in China). These data collection approaches attracted a total of 215 participants to answer the survey questions in China. After discarding three responses derived from the same IP address and 39 responses answered by physicians who either did not use or were unaware of OPRs from the sample, the authors kept a total of 173 questionnaires collection from China for data analysis. A final total of 263 responses were used as the sample for this study. Table 2 gives the demographics of the respondents in this study.

DATA ANALYSIS AND RESULTS

The 263 responses were coded, arranged, and imported by SPSS for data analysis. The authors conducted an exploratory factor analysis with principal component analysis for the Chinese dataset and the Nevada dataset, respectively, to determine the number of factors necessary to account for the variance of the data. This resulted in the removal of the construct measures of PRC1, PRC4, PRC7, EVN1, and EVN4, assisting in improving the internal consistency of the constructs. The results of the revised construct measures indicated that the most variance explained by a single factor was up to 47%, less than the threshold value of 50% (Haneem et al., 2019). This suggested that common method bias was not a major issue in this study. The authors also included several control variables that may influence evaluation of online reviews. These variables were related to the demographics of the survey respondent and are: gender, age, experience of being a physician, and size of clinical settings. The results showed that the characteristics of the participants did not have a significant impact on their evaluation of online reviews. Appendix C contains regression analysis of the control values.

Table 2. Participants profile

Characteristics		China	Nevada	Subtotal (Percent)
		Frequency	Frequency	
Gender	Male	86	33	119 (45%)
	Female	87	57	144 (55%)
Age	<= 40	160	26	186 (71%)
	41 – 45	10	8	18 (7%)
	> 45	3	56	59 (22%)
Experience of being a physician	< 6 years	45	26	71 (26%)
	6 – 9 years	82	8	90 (34%)
	> 9 years	46	56	102 (40%)
Size of clinical setting	<= 2 physicians	3	23	26 (10%)
	3 – 5 physicians	17	42	59 (22%)
	> 5 physicians	153	25	178 (68%)
Total		173	90	263

Power Distance as a Moderator

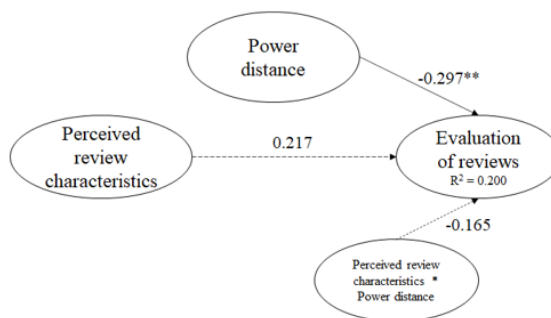
In this study, the moderating effect of power distance was tested in the relationship between perceived review characteristics and evaluation of reviews. Table 3 shows the findings of the moderating effect test.

The Partial Least Squares (PLS) technique was utilized to test the moderating effect in the present study, as PLS works well with ordinal scales, commonly referred to as Likert scales, and provides tools for approaching construct-relational models. A moderating effect exists if the interaction path is significant (i.e. the T statistics of interaction effect must be 1.96 and $p < 0.05$) (Hair et al., 2014). Table 3 demonstrates that the interaction path of perceived review characteristics and power distance (PRC*PWD) towards evaluation of reviews is 0.151, and the corresponding T statistic is 1.017 with a p value above 0.05, for the Nevada dataset. For the Chinese dataset, the interaction path of perceived review characteristics and power distance (PRC*PWD) towards evaluation of reviews is -0.165, and the corresponding T statistic is 0.764 with a p value also above 0.05. Thus, this study rejects the hypothesis (H3) that power distance moderates the relationship between perceived review characteristics and evaluation of reviews for both collected datasets. Figure 2 presents the moderation results in the models.

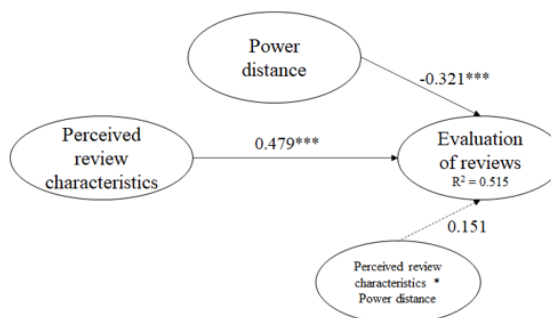
Table 3. The results of the moderating effect test in this study

Dataset	Relationship	Path coefficient	T statistics	P value	Results
Nevada	PRC*PWD ->EVN	0.151	1.017	0.310	Not significant
China	PRC*PWD ->EVN	-0.165	0.764	0.445	Not significant

Figure 2. The results of the moderation tests in this study (Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$)



The results analyzed based on the Nevada dataset



The results analyzed based on the Chinese dataset

Power Distance as a Mediator

Moderation was not supported in the analysis, so the relationship between the constructs within the model was reevaluated. An argument for mediation could be made given the results of the initial analysis. The support for H1 and H2 in the initial analysis indicated that direct effects exist between constructs, an observation that is supported by extant literature and which will be expanded upon in a later section. An exploration into whether mediation effects exist was the logical next step in the development of the model. Although no support for moderating effects was detected, there was a possibility that power distance still influenced a physician’s perception of online review characteristics and their evaluation of review through mediation. This logic was the basis for Hypothesis 5:

H5: The effect between a physician’s perceived review characteristics and a physician’s evaluation of an online review is mediated by the construct of power distance.

Reliability, Convergent and Discriminant Validity of the Model

Testing for a mediation effect began with a test of the validity of the adjusted model. To ensure reliability, a confirmatory factor analysis for the included constructs and their measures was carried out using structural equation modeling (SEM) using the statistical software AMOS 26.0. The results (Table 4) showed that the measurement model demonstrated a good fit to the data.

The reliability of the constructs was tested using composite reliability (CR) coefficient and average variance extracted (AVE). The value for CR was greater than 0.7 and AVE was higher than 0.5, which was acceptable until 0.4 if CR is more than 0.6 (Fornell & Larcker, 1981). Results from validity tests (Table 5) indicate a high level of internal consistency.

With respect to the convergent validity, the results demonstrated that all factor loading estimates for the revised construct measures were greater than 0.5 (accepted threshold value) (Bagozzi & Yi, 1988), as shown in Table 5. As for the discriminant validity of the measurement model, the square root of AVE of the latent variable should be greater than the correlation coefficient of other latent variables (Fornell & Larcker, 1981). Table 6 shows that the results had an adequate discriminant validity.

Based on this evidence, the authors concluded that the measures in the study addressed reliability as well as convergent and discriminant validity, based on the two collected datasets.

Measuring the Mediating Effects

The overall conceptual model was tested using SEM based on the Nevada dataset and the Chinese dataset, respectively. The results of the structural model for the two datasets are shown in Figure 3.

To test for mediation and the hypotheses, the authors referred to the strategies of Hernández-Ortega (2018)’s mediating analyses. They first measured whether the direct effects of online patient review characteristics on evaluation of reviews (H1) were significant without the mediator of power distance (see value ‘d’ in Figure 3). Then they tested whether perception of OPR characteristics significantly affected power distance (see value ‘a’ in Figure 3) (H4). Following this, the direct effects of power distance on evaluation of reviews were assessed (see value ‘b’ in Figure 3) (H2).

Table 4. The results of the model fit in this study

Dataset	CMIN/DF	GFI	CFI	IFI	TLI	RMSEA
Nevada	1.404	0.869	0.962	0.963	0.953	0.067
China	1.978	0.896	0.956	0.956	0.946	0.075
ATV	< 3 is good	> 0.80	> 0.80	> 0.80	> 0.80	< 0.08

Note: ATV = accepted threshold value

Table 5. The results for the reliability and convergent validity in this study

Construct	Nevada dataset				Chinese dataset			
	Factor loading	Cronbach's Alpha	AVE	CR	Factor loading	Cronbach's Alpha	AVE	CR
<i>Perceived review characteristics (PRC)</i>		0.745	0.427	0.748		0.875	0.642	0.877
PRC2	0.69				0.78			
PRC3	0.63				0.74			
PRC5	0.59				0.84			
PRC6	0.70				0.84			
<i>Power distance (PWD)</i>		0.95	0.702	0.949		0.863	0.637	0.933
PWD1	0.82				0.83			
PWD2	0.77				0.78			
PWD3	0.80				0.77			
PWD4	0.84				0.80			
PWD5	0.85				0.77			
PWD6	0.90				0.81			
PWD7	0.85				0.75			
PWD8	0.87				0.87			
<i>Evaluation of reviews (EVN)</i>		0.836	0.742	0.851		0.932	0.764	0.867
EVN2	0.91				0.89			
EVN3	0.81				0.86			

Table 6. The results of the discriminant validity in this study

Construct	Nevada dataset			Chinese dataset		
	PRC	PWD	EVN	PRC	PWD	EVN
PRC	0.652			0.798		
PWD	-0.104	0.841		-0.484	0.797	
EVN	0.215	-0.316	0.847	0.627	-0.565	0.871

Thereafter, the authors validated whether there was a significant relationship between online patient review characteristics and evaluation of reviews when the mediator power distance was introduced (see value 'c' in Figure 3) (H5). Table 7 summarizes the results of the hypothesis testing.

The results showed support for partial mediation. There was a significant relationship between the mediator of power distance and evaluation of reviews, and a significant relationship between online patient review characteristics on evaluation of reviews. The authors were unable to establish full mediation, as the removal of the mediator did not drop the effect of online patient review characteristics on evaluation of reviews to zero. To further validate, the authors calculated the mediating effects based on the indirect and direct effects of online patient review characteristics on evaluation of reviews through the mediator (see values 'ab' and 'c,' respectively in Figure 3). SEM joint tests can help generate values 'a,' 'b,' 'c,' 'ab,' and 'c,' according to Hernández-Ortega (2018).

Figure 3. The results of the mediating effect of power distance in this study (Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$)

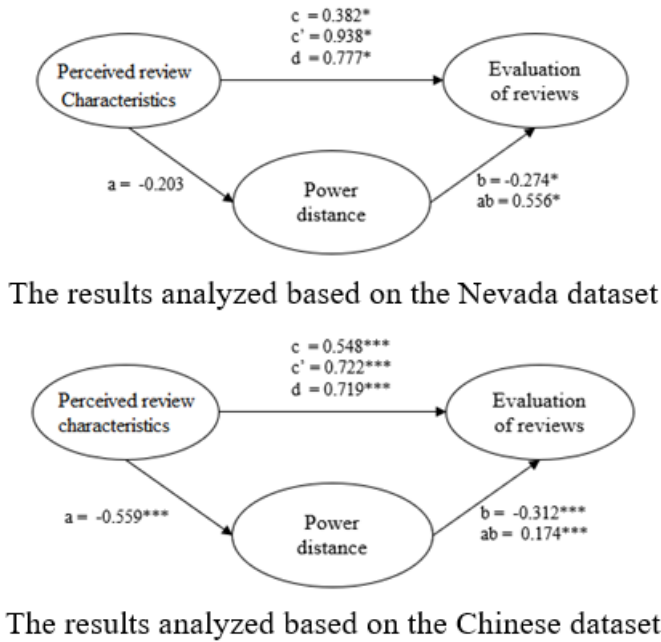


Table 7. Results of the hypotheses testing in this study

Hypothesis	Nevada dataset			Chinese dataset		
	Path coefficient (β)	p value	Hypothesis support?	Path coefficient (β)	p value	Hypothesis support?
H1: PRC → EVN	0.777	< 0.05	Yes	0.719	<0.001	Yes
H4: PRC → PWD	-0.203	> 0.05	No	-0.559	<0.001	Yes
H2: PWD → EVN	-0.274	< 0.05	Yes	-0.312	<0.001	Yes
H5: PRC → PWD->EVN	0.382	< 0.05	Yes	0.548	<0.001	Yes

The results of the data analysis based on the Nevada dataset demonstrated that when the mediator of power distance is absent in the conceptual model, the direct effect of online patient review characteristics on evaluation of reviews still achieves a positive and significant value ($d = 0.777$, $p < 0.05$) (see Figure 3). When the mediator of power distance is introduced, online patient review characteristics have a positive and significant impact on evaluation of reviews ($c = 0.382$, $p < 0.05$). The indirect effects of online patient review characteristics through power distance are positive and significant for evaluation of reviews ($ab = 0.556$, $p < 0.05$). While the total effects of online patient review characteristics on evaluation of reviews are positive and significant ($c' = 0.938$, $p < 0.05$). These results showed that power distance has a partial positive mediation effect on the association between online patient review characteristics and evaluation of reviews.

As for the Chinese dataset, the results of the data analysis showed that in the absence of the mediator power distance, the direct effect of online patient review characteristics on the evaluation of reviews reaches a positive and significant value ($d = 0.719$, $p < 0.001$) (see Figure 3). When the

mediator of power distance is introduced in the model, online patient review characteristics have a direct and significant impact on evaluation of reviews ($c = 0.548, p < 0.001$). The indirect effects of online patient review characteristics on evaluation of reviews through power distance are positive and significant ($ab = 0.174, p < 0.001$). Finally, the total effects of online patient review characteristics on evaluation of reviews are also positive and significant ($c' = 0.722, p < 0.001$). These results revealed that power distance has a partial positive mediation effect on the relationship between online patient review characteristics and the evaluation of reviews.

From analysis of both datasets, there is support for hypothesis 1 and 2, and partial support for hypothesis 4. We also found partial support for hypothesis 5 in the form of partial positive mediation.

DISCUSSION

Theoretical Contribution

The authors examined healthcare providers' response to OPRs in this study. The documented contributions are as follows.

First, the impact of online patient reviews (OPRs) from the side of the service providers, specifically physicians, was examined. The unit of analysis and observation of this study was on the individual physician. The authors observed that positive direct effects exist between physician perception of OPR characteristics and physician evaluation of reviews. This finding shows that physicians that are mindful of review characteristics are more likely to have a higher opinion of online reviews. They also observed that online patient reviews do not influence all physicians in the same way due to a myriad of factors. They explored the importance of the perceived physician-patient relationship in this environment.

A physician reading a patient's review may not recognize the patient, but physicians that value OPR characteristics and have a lower power distance are more likely to psychologically establish a connection with their reviewer with the aim of exchanging information about the patient's experience with the quality of care received.

Second, the authors expanded the work done in Hernández-Ortega (2018) by operationalizing social-psychological distance into the construct of power distance within the context of healthcare. Results from this study showed that the definition of social psychological distance adopted from Hernández-Ortega (2018) as a way to represent interpersonal dissimilarities may not be broadly generalizable to all contexts. By exploring the influence of a specific social construct in power distance, the authors expanded on this work and showed that additional nuances exist in the reviewer/reviewee relationship. Similar to Hernández-Ortega (2018), the authors found a partially negative mediation role of power distance in the association between review characteristics and the physician's evaluation of review. They also found no moderation of power distance in relationship between characteristics of reviews and their evaluation by the physician. From our results, we can state that decreasing physicians' perceived power distance between themselves and their patients is important for review characteristics to influence their evaluation of reviews.

These contributions allow us to conclude that provider evaluation of online reviews is mainly affected by the characteristics of the reviews themselves. Although some providers may feel hierarchical distance with their patients, the association between the review content and their evaluation by providers is only partially mediated by power distance and is not a sole factor explaining OPR valuation.

Managerial Implications

OPRs serve the twofold purpose of providing information and generating feedback to improve quality of care. The analysis of how this information influences physicians' evaluation of OPRs facilitates the identification and implementation of new assessment strategies. From this research, we highlight

three observations related to online physician reviews and offer suggestions for addressing them within a practitioner healthcare setting:

1. Clinics should encourage the sharing of OPRs that are lengthier and more narrative relative to normal reviews.

Our findings also show that physicians are more likely to respond to reviews from patients that are different than the average reviews posted by other patients, regardless of whether the review was positive or negative. Additionally, most physicians did not demonstrate an aversion to lengthy reviews. On the contrary, physicians were more likely to consider the content of lengthy reviews and use the suggestions as actionable feedback. Patients that share their opinions in the form of lengthy reviews can be a way to increase physician awareness of the shortcomings of their performance. Clinics seeking this type of feedback can encourage patients to share information more openly. Examples could include providing examples of other patient reviews, incentivizing reviews through the drawing of prizes, or creating survey templates that offer more free-form responses instead of multiple-choice scales.

2. Clinic policies that prioritize OPRs as an evaluation metric should also seek to decrease perceived power distance between caregivers and patients.

Our study shows that while there is a direct relationship between OPR characteristics and physician evaluation, power distance partially and negatively mediates this association. Given the partial nature of this mediation, it is essential for physicians to have a lower power distance to their patients which will in turn cause them to be more open towards feedback from them in the form of OPRs. This finding is generalizable to an extent towards non-physician healthcare service providers as well. Ultimately, power distance between provider and customer is a construct that should not be ignored when considering the influence of evaluations on service-provider evaluation.

3. Clinics should encourage awareness and visibility of reviews for physicians.

From our results, we see that the awareness of a review will increase the likelihood that a physician will consider the contents of the review regarding their service. Our findings show that OPRs that are negative on the quality of care that the patient has received and criticize the performance of the physicians are more likely to be considered. This finding is contrary to expectations that physicians ignore negative feedback and only look at positive reviews. Making physicians aware of reviews and providing them with a personal feedback score will allow for more focus on both critical feedback and general patient sentiment regarding a physician's performance.

CROSS-CULTURAL FINDINGS

While this study was focused more on individual power distance perceived by physicians, the unique dataset afforded the authors the ability to examine cross-cultural effects across two countries. Literature on power distance and the influence of national culture suggests that national culture is characterized by five cultural values, namely, power distance, long-term orientation, masculinity, uncertainty avoidance, and individualism (Hofstede et al., 2010). There is a large body of research that has examined these cultural values and found that they impact consumers' perception of service quality, service evaluation, and satisfaction (Huang & Crotts, 2019; Khare & Sarkar, 2021; Y. Zhu et al., 2018). These perceptions extend onto the scope of this research study. Across different cultures, reactions to online reviews and perceptions of online reviews can differ despite similar messaging (Ali et al., 2021; Changchit et al., 2021).

Individuals from cultures that accept power distance agree more to an inherent social distance between individuals compared to people coming from a dissimilar level of social hierarchy. Individuals from cultures where power distance is high tend to be more socially distanced from other individuals from a different level or hierarchy (Hofstede et al., 2010; Rouibah et al., 2021). Obal and Kunz (2016) found that when asked to evaluate the helpfulness of online reviews, participants from a culture with high power distance (such as India and China) gave less credit to online reviews compared to participants from a culture with lower power distance (such as the United States and Canada).

Through our cross-cultural comparison, we observe that the effects of power distance on evaluation of reviews are stronger in China than Nevada. At the same time, there are significant differences between China and Nevada on the association between online patient review characteristics and evaluation of reviews when the mediator of power distance is introduced, supplementary analysis is available in Appendix D.

We admit that the cultural comparison is only examined between two different settings and there is no solid statistical ground on establishing a conclusion. Researchers in this area are encouraged to study the role of culture further as the initial results from this study demonstrate observable differences between cultures with different power distance indices.

LIMITATIONS AND FUTURE RESEARCH

Although this study makes several significant contributions, the present work is subjected by four limitations leading to future avenues of research. First, the current study focuses on power distance that is only one dimension of social psychological distance. Our choice of power distance construct was a result of our adherence to the work of Hernández-Ortega (2018) as our theoretical lens. However, the authors recognize the importance of studying other dimensions of social psychological distance and encourage researchers to conduct studies that can evaluate the role of those constructs as well.

Second, limitations of this work stem from the methodology we selected to examine the phenomenon of OPRs. The survey instrument administered to the physicians included in this study required self-reporting of measures of the theoretical constructs. Future research could create a more objective means of evaluating these constructs.

Third, our study is also limited to the individual level of physician analysis from a singular point in time. An objective analysis of the impact of OPRs on the behaviors of healthcare service providers over a period could uncover more relationships between the dynamic of OPRs and practice. Inclusion of additional healthcare service individuals such as nurses and administrative staff could also provide more context to the relationships in the healthcare service environment.

Fourth, our cross-cultural findings were limited to a restricted analysis of two environments, the State of Nevada in the United States and China. The scope of the project was necessitated by time and access restrictions. Future studies can explore a more comprehensive comparison of different cultures and potentially narrow down additional traits that affect either online reviews or perception of constructs such as power distance.

Future work on this topic can explore how online reviews affect the perception of physician performance across different treatment modalities. Patients seeing a physician in-person may have a different experience compared to patients that utilize Telehealth to see a medical professional. Online reviews could also be used as a metric to determine how well physicians and patients are adapting to pandemics or other unique healthcare scenarios (Tang & Zhong, 2022).

CONFLICT OF INTEREST

The authors have no competing interests to declare.

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APPENDIX A

Studies on OPR

Citation	Review Characteristics	Receiver's Factors	Creditability	Behavior
(Holliday et al., 2017b)	The accuracy of data obtained from online patient reviews	age, sex, education, internet access	Agreement with the accuracy of the data	1) from physician's perspective: job stress, physician-patient, relationship, health care overuse, patient-reported experience of care 2) from patient's perspective: the willingness of providing feedback online
(Lagu et al., 2019)	The accuracy of reporting of care quality from online reviews	age, gender	Board certification, Insurance accepted	choosing a physician
(Sargeant et al., 2008)	Positive/negative feedback	not mentioned	Consistency with self-perceptions, perceptions of the professional culture, fairness of the assessment	emotional responses to feedback
(Chen et al., 2018)	Positive/negative feedback	not mentioned	Agreement with the accuracy of the data regarding patient experience	choosing a physician
(Widmer et al., 2018)	Negative online reviews and those without negative reviews	not mentioned		reputation maintenance
(Kirkpatrick et al., 2017)	Reviews given when a patient only had a very good or bad experience	not mentioned	Trust in information from online review, Word of mouth recommendations and insurance participation	choosing a physician
(Segal et al., 2012)	Number of comments, proportion of glowing comments about quality of care, proportion of scathing comments about quality of care	age	Trust	decision-making on surgeon selection

APPENDIX B

Studies on power distance and online consumer reviews

References	Findings	Summary
(Gao et al., 2018)	Consumers from countries with high power distance provide low ratings to hotels; this finding is consistent with those of previous studies that use survey data (Kim and Aggarwal, 2016, Ladhari et al., 2011, Mattila, 2000).	Power distance is negatively related to online review ratings.
(Leon, 2019)	It shows that the customers who tend to deviate from prior average ratings have a high-power distance	Power distance is positively related to deviation from prior average ratings.
(Stamolampros et al., 2019)	Findings document a negative association between the cultural distance of the passenger and the airline company and the accumulated perceived satisfaction from the service quality. This implies that passengers are more satisfied with airline companies that are more closely associated with their cultural values.	Power distance is negatively related to perceived satisfaction about the service quality from online reviews.
(Kim, 2019)	Power distance tended to hinder the effect of review ratings on consumer choice.	Negative association between power distance and online reviews
(Fang et al., 2013)	Results show that: (1) online consumers are influenced by culture difference across countries when providing online reviews, but the effect of power distance with regard to spotlight reviews will become smaller when corresponding books become more popular online; and (2) Chinese consumers are reluctant to engage in the online review systems and “helpfulness” voting mechanism compared with their American counterparts, but they tend to hold more positive attitude towards products or service, provide less extremely negative reviews, and weight more on the negative reviews provided by other online consumers.	Positive association based on cultural differences
(Biswas et al., 2021)	E-commerce users belonging to the USA (where the societal structure has a low power distance) exercise a stronger positive impact of star ratings on the perceived helpfulness than e-commerce users from India, providing evidence against H9b. A possible reason could be the categories of products that were analyzed: Amazon Echo, Samsung Earbuds, JBL Headphones, Kaspersky anti-virus, Amazon Basics battery, WD hard drive, HP printer cartridge, and AmazonBasics Classic Backpack. In India, these are purchased mostly by urban consumers, while the power distance in Indian societies is more prominent in the rural areas. A few rural consumers had possibly purchased these products, limiting the possibility of strong power distance traits.	Negative association between power distance and perceived helpfulness of reviews

APPENDIX C

Regression analysis of control variables

Control Value	Nevada		China	
	Model 1	Model 2	Model 1	Model 2
Gender	0.049	-0.109	0.054	-0.100
Age	0.096	-0.030	-0.258*	-0.112
Experience of being a physician	0.021	0.044	0.206	0.126
Size of clinical settings	0.243	0.109	0.205	0.091

APPENDIX D

Cross-Cultural Comparison

Given the path coefficients in the structural models, the authors then conducted cross-culture comparisons to examine the statistical difference in path coefficients (β) between Nevada, USA, and China, following the procedures taken from (Keil et al., 2000). The relevant results are summarized in the table below.

Test of cross-cultural comparison

Hypothesis	Comparison Between Nevada, USA and China			
	Nevada	China	Difference (<i>t</i> - value)	Significant difference?
	β value	β value		
H1: PRC → PWD	-0.203	-0.559	20.069	Yes (sd)
H2: PWD → EVN	-0.274	-0.312	3.229**	Yes
H3: PRC → PWD->EVN	0.382	0.548	-10.234***	Yes

Note: sd = structurally different (i.e. one path is significant, and the other is not significant in the corresponding conceptual model). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

This shows that the direct effects of online patient review characteristics on power distance ($t = 20.069$, *structurally different*) and the direct effects of power distance on the evaluation of reviews ($t = 3.229$, $p < 0.01$) are stronger in China than Nevada. At the same time, there are significant differences between China and Nevada on the association between online patient review characteristics and evaluation of reviews ($t = -10.234$, $p < 0.001$) when the mediator power distance is introduced.