The signaling effect of management response in engaging customers: A study of the hotel industry

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HIGHLIGHTS

- Management response is a continuous, dynamic and reciprocal communication process.
- Response attributes shapes the effectiveness of management response by involving different signaling cost.
- The frequency and speed of response show significant signaling effect and enhance customer engagement on social media.
- Signaling effect of management response is more pronounced for budget hotels than for premium hotels.

ARTICLE INFO

ABSTRACT

Hotels today actively respond to online reviews given their tremendous influence on travelers' decisions. Yet, the questions of how to respond to online reviews continue to baffle hotel managers. By focusing on prospective travelers, we propose the effective management response signals hotels' care for customers and quality of service. Particularly, we postulate the frequency, speed and length of response influence the effectiveness of signaling in reducing information asymmetry. Based on the large-scale field data from TripAdvisor, this study demonstrates that the frequency and speed of response significantly enhance travelers' engagement as indicated by more reviews, higher average valence, more votes for helpfulness, and higher popularity ranking. Furthermore, the frequent and speedy response is more effective for budget (vs. premium) hotels. Thus, management response to online reviews serves as a critical channel of communication to engage customers.

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1. Introduction

Given the tremendous influence of online product reviews, firms increasingly monitor online reviews to understand customer perceptions. Online reviews allow customers to exchange their experiences and evaluation of products or firms and have been proven to be more influential in affecting product purchases than traditional marketing communications (Chevalier & Mayzlin, 2006). The success of hospitality firms on many social media platforms depends not only on whether travelers are willing to share their opinions, but also on whether firms can enhance competitive advantages by interacting with travelers (Cantallops & Salvi, 2014). The extent to which customers are willing to engage in conversations with other customers as well as the firm can significantly influence a firm's value, as it affects what customers are prepared to tell others, and what insights they are willing to provide firms (Kumar et al., 2010). Consequently, instead of being passive bystanders, hospitality firms are proactive in responding to online review to foster customer engagement.

As a form of proactive intervention on many review platforms, management response has been on the rise due to its public nature (e.g., Gu & Ye, 2014; Xie, Zhang, & Zhang, 2014). By identifying various boundary conditions, researchers have demonstrated that effective response can promote customers' attitude recovery (Lee & Cranage, 2014; van Laer & de Ruyter, 2010), satisfaction (Min, Lim, & Magnini, 2015), trust (Sparks, So, & Bradley, 2016; Wei, Miao, & Huang, 2013), and brand evaluation (Lee & Song, 2010; Rose &

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Blodgett, 2016; van Noort & Willemsen, 2012). Yet, despite management response now being commonplace, its effectiveness in engaging consumers on social media platforms remains an open question. Most studies have relied on laboratory experiments to examine the effect of a one-time management response (Lee & Cranage, 2014; Min et al., 2015; Sparks et al., 2016; van Laer & de Ruyter, 2010; van Noort & Willemsen, 2012; Wei et al., 2013). Consequently, the current literature has not examined the continuous, dynamic and reciprocal nature of management response as a communication process. Few studies have explored how management response can nurture customer engagement on social media platforms.

This study proposes management response as a continuous, dynamic and reciprocal process of communication that hotels initiate to engage prospective travelers in online communities. By focusing on prospective travelers, we postulate a signaling role of management response in reducing information asymmetry. The signaling literature suggests that signal cost plays a central role in efficacious signaling (Connelly, Certo, Ireland, & Reutzel, 2011; Hawkes & Bliege Bird, 2002). We further posit that different response attributes, which involves differential signal cost, affect the effectiveness of response to signal a hotel's care for customers and its service quality.

Based on a large-scale sample of hotel reviews and responses from San Diego, California (108,410 reviews from 212 hotels), the findings of this study contribute to the literature in several areas. First, by conceptualizing management response as a continuous, dynamic and reciprocal communication process, we concentrate on how the quantitative attributes of management response (i.e., the frequency, speed, and length) influence customer engagement over time. This represents a significant step beyond the existing studies that treat response as a one-time communication and consequently mainly focus on the qualitative attributes (e.g., the source, content, audience, and channel of response) of a particular response (e.g., Sparks et al., 2016; van Laer & de Ruyter, 2010). In contrast, we propose that hotels can engage travelers in a three-way network (Wei et al., 2013) to encourage them to write more reviews, share more positive reviews, and to be more active in voting for helpful reviews. Altogether, these customer engagement behaviors (CEBs) help improve hotels' popularity ranking and gain competitive advantage.

Second, we propose a signaling mechanism of management response to signal both the hotel's care for customers and its service quality. For this reason, we focus on the prospective travelers instead of repeat travelers (i.e., Gu & Ye, 2014) as information asymmetry is prominent among those without previous experience with a hotel. Evaluations of accommodation service are rather subjective due to their experiential nature (Litvin, Goldsmith, & Pan, 2008; Xie et al., 2014), thus the signaling effect may be more pronounced for the hotel industry. Due to differential signal cost, the three attributes affect the signaling effectiveness of response.

Finally, our data and econometric models offer more stylized and fine-grained findings. By treating management responses as continuous, dynamic and reciprocal communication, we focus on three quantitative attributes, which are investigated in holistic models. Although Xie et al. (2014) has examined the accumulative frequency of response, we underscore the information value of recent response by investigating the weekly frequency, speed and length of response. Meanwhile, we show a more profound signaling effect of response for budget (vs. premium) hotels.

The remainder of the paper is organized as follows. First, starting with a brief literature review on management response, we underscore its role in facilitating a continuous and reciprocal communication process for engaging customers online. Second, drawing on the signaling theory, we develop hypotheses on how

three attributes influence the signaling effectiveness of response and the moderating effect of hotel category. Based on the large-scale data, we provide the empirical investigations of the hypothesized effects. Finally, we discuss the main findings, theoretical and managerial implications, limitations and directions for future research.

2. Literature review and theoretical development

The proliferation of review platforms on which consumers share opinions on products has connected consumers effectively (Chen & Xie, 2008). Consequently, to take advantage of online reviews as a new marketing tool, many industries (including tourism) now actively promote, influence, and monitor the generation and distribution of WOM (Kozinets, Wojnicki, Wilner, & De Valck, 2010). For example, many brands intentionally manipulate their reviews by anonymously adding fake positive reviews, deleting or hiding negative reviews, or offering incentives to encourage positive reviews (Dellarocas, 2006). Apparently, these practices may raise ethical concerns, hurt the credibility of social media as a whole and jeopardize firms' long-term relationships with customers (Carl, 2006). As a result, management response on many websites such as TripAdvisor and Yelp has become increasingly pervasive as firms try to proactively and ethically influence the effect of WOM. As management response is initiated publicly and continuously, it has been of great value for prospective consumers in their purchase decisions.

Management response has essentially changed the generation and diffusion of WOM from unidirectional communications to a dynamic and reciprocal process. In contrast to traditional communication models in which tourism firms dominated the communication flow, travelers are now empowered to share both positive and negative WOM online. When hotels are not allowed to, or choose not to, respond, the communication process is essentially one-way and non-interactive, as there is no feedback loop from hotels to travelers. Hotels are merely bystanders, watching events unfold and public opinions form, without any opportunity to influence these processes. Recently, management response from hotels has emerged as an interactive communication channel to engage prospective travelers. Consequently, the completed and reciprocal communication leads to an "adjustment process" that facilitates the gradual convergence of meanings and opinions, resulting in mutual understanding (Roger & Kincaid, 1981).

2.1. Previous literature on management response

As we propose management response as the communication that hotels initiate to engage customers, we organize the previous literature along the five key components in the communication models (e.g., Berlo, 1960; Schramm, 1954). Previous studies have focused on the *effect* of response in terms of *source*, *content*, *audience*, and *channel* (see Table A1 in the Appendix).

Relying on experimental data, researchers examining the response content find that its effectiveness depends on many contextual factors. To deal with negative WOM, tailoring a response to address issues and show empathy is important, as specific response is more effective than generic response (Min et al., 2015; Wei et al., 2013). Several studies distinguish between defensive and accommodative response. For instance, Lee and Cranage (2014) show that defensive response for low consensus WOM or accommodative response for high consensus WOM is more effective in recovering the observing consumers' attitude that may have been hurt by negative WOM. Lee and Song (2010) reveal that accommodative response (vs. defensive or no response) leads to better company evaluations. van Laer and de Ruyter (2010) suggest that

response works better when crafting an accommodative response in the narrative format or defensive response in the analytical format. Other categorizations include the response framed in past or future action (Sparks et al., 2016), or framed in assurance of future satisfaction or corrective action (Rose & Blodgett, 2016).

Different response channels matter. To illustrate, proactive response on brand-generated platform or reactive response on customer-generated platform is effective in countering the effect of negative reviews (van Noort & Willemsen, 2012). Past findings on the source of response are contradictory. van Laer and de Ruyter (2010) find that response initiated by low-position employees outperforms that by senior staff, whereas Sparks et al. (2016) show no difference. Regarding the audience of response, most studies focus on observing consumers who rely on reviews and responses for purchase decisions. Exceptionally, Gu and Ye (2014) focus on repeat consumers and show that response exerts no effect in enhancing their future satisfaction. Yet, it improves the future satisfaction of complainers who receive the response but deteriorates that of complainers who observe response but do not receive themselves.

This study differs from previous research on management response in three aspects. First, by focusing on prospective (vs repeat) consumers, we posit that management response signals a hotel's willingness to care for customers and its service quality. Our perspective differs from Gu and Ye (2014), who demonstrate the effect of response on those that had written negative reviews. Second, using the large-scale field data with one panel across more than 10 years and the other across 35 weeks, we conceptualize management response as a continuous, dynamic and reciprocal communication process and focus on its quantitative attributes (i.e., the frequency, speed, and length). In contrast, previous studies exposed the subjects to a few or just one review in addition to a response in experiments, treated response as a one-time communication, and concentrated on the qualitative attributes (e.g., the source, content, audience, and channel) of a particular response. We also highlight the information value of new responses and thus complement Xie et al.'s (2014) study, in which they examine the accumulative frequency. Third, unlike previous experimental studies that have examined the effect of one-time response on customers' attitude recovery (Lee & Cranage, 2014), satisfaction (Min et al., 2015), trust (Sparks et al., 2016), and brand evaluation (Lee & Song, 2010), our study focuses on the effect of management response in engaging customers in online communities.

2.2. Customer engagement

Customer engagement refers to the strong, enduring psychological connection customers make with other customers, firms, and brands (So, King, Sparks, & Wang, 2014; Wei et al., 2013). Insights into customer engagement are valuable as it allows marketing researchers and practitioners to improve advertising effectiveness (Calder, Malthouse, & Schaedel, 2009) and enhances customer loyalty and purchase intention (e.g., Hollebeek, 2011; Patterson, Yu, & De Ruyter, 2006). However, neglecting them can lead to inaccurate valuation of customers (Kumar et al., 2010), affect marketing metrics and firm values (Verhoef, Reinartz, & Krafft, 2010). CEBs go beyond transactions, and may be defined as a customer's behavioral manifestations that have a brand or firm focus (Bijmolt et al., 2010; van Doorn et al., 2010). CEBs include, but are not limited to, WOM activities, referrals and recommendations, voluntary assistance with other customers, web postings and blogging, participation in brand communities, and co-creation in product development (van Doorn et al., 2010). Particularly, Brodie, Hollebeek, and Conduit (2015) propose different types of CEBs consumers exhibit in social media platforms.

Content creating refers to the situation when consumers make original contributions to social media content by disseminating their knowledge, resources and experiences. By content creating, travelers freely comment and create stories regarding their experiences and perceptions about purchased services and products. On TripAdvisor, writing reviews is the manifestation of content contributing, and can be measured by the valence and volume. Contributing is another type of CEBs when consumers contribute by forwarding or distributing pre-existing content to pass along information to members of their social networks, such as the "sharing" on Facebook and the "re-tweeting" on Twitter. Furthermore, consumers can contribute to the existing content by indicating their preferences through the "Like" on Facebook and the "favorite" on Twitter (Brodie et al., 2015). The voting mechanisms introduced by many websites aim to help firms gain a strategic advantage in consumer attention and "stickiness" (Connors, Mudambi, & Schuff, 2011). A high volume of voting activities signifies active interactions among consumers with common interest in a hotel. Thus, the votes for helpfulness a hotel receives gauges the customer engagement in contributing on TripAdvisor. As popularity ranking is defined by TripAdvisor as a measure of quality, recency, and quantity of online reviews for a specific hotel, it represents an important aggregate measure of CEBs on TripAdvisor. Altogether, these CEBs constitute the key metrics of online reviews to help firms gauge the consumer sentiment and perceptions of their products and to inform their business strategies.

2.3. The signaling of management response

Stiglitz (2000) highlights two broad types of information asymmetry that are particularly important: information about intent and information about product quality. In the hospitality industry, as travelers' evaluations of their consumption experiences are rather subjective due to the experiential nature of services (Litvin et al., 2008; Xie et al., 2014), information asymmetry is even more salient. The online transactions create physical separations between hotels and travelers and diminish travelers' capacity to evaluate hotels' behavioral intention and their service quality.

We propose that management response, as a signaling mechanism, reduces information asymmetry for prospective travelers. There are two important characteristics of efficacious signals: observability and signal cost (Connelly et al., 2011). Compared with other communication channels, such as offline telephone contacts or private online chat, hotels' responses can be easily observed by prospective travelers. The importance of signal cost highlights the fact that some signalers are in a better position than others to absorb the associated costs (Connelly et al., 2011). For example, obtaining ISO9000 certification is less costly for a high-quality manufacturer as compared with a low-quality manufacturer because a low-quality manufacturer would be required to implement considerably more changes to be awarded the certification. Similarly, although both high-quality and low-quality hotels can adopt management response to reduce information asymmetry for their prospective travelers, the former are better at absorbing the incurred cost.

There are many potential sources of signal cost for management response, which are highly influenced by the frequency, speed and length of response. Closely monitoring customer reviews and responding to the selected reviews can incur sufficient human resources, which may involve extra payment for new employees and training cost. When hotels try to address the issues or problems raised in the reviews, they may incur additional cost or loss in revenue. For instance, they may have to investigate the issue or problem before they can solve it. In particular, when deciding to take responsibility, hotels may have to sacrifice future revenue

(such as a discount for future transactions), or incur greater operation cost (such as the extensive renovation). Most importantly, compared with high-quality hotels, those low-quality hotels are more likely to receive complaints, but are less able to afford costly changes. Continuously providing frequent, immediate, or long responses across time is even more resource-consuming as new reviews (usually more negative ones for low-quality hotels) arrive continuously. Thus, high-quality hotels are in a better position than others to absorb the associated costs due to continuously initiating frequent, immediate, or long responses. Therefore, we postulate the frequency, speed and length affect the signaling effectiveness of management response.

2.3.1. Response frequency

Response frequency refers to the number of responses a hotel initiates within a particular period (i.e., per week). Here, we underscore the information value conveyed by the new responses, and differ from Xie et al. (2014) who investigate the influence of accumulative frequency. Information reciprocity refers to the process that enables customers to interact and share information with the firm and that enables the firm to respond to customers (Jayachandran, Sharma, Kaufman, & Raman, 2005). Frequent response enhances information reciprocity between hotels and travelers and thus encourages travelers to create more original contents, as indicated by more reviews. Given that customer reviews may be biased by consumers' heterogeneous preferences (Li & Hitt, 2008), frequent response improves prospective travelers' understanding of customer reviews and facilitate more objective evaluations. These informed expectations formed prior consumption lead to more satisfactory experiences, resulting in more positive reviews (i.e., a higher average valence).

According to the exchange theory of interpersonal communication, an individual who supplies information to another person obligates the recipient, who therefore must furnishes benefits in return (Gatignon & Robertson, 1986, pp. 534–538). Prospective travelers, as the information seeker, receive information from hotels' response and thus feel obligated to reciprocate, including voting for helpful reviews (otherwise, they may not vote). Management response reduces readers' likelihood of drawing negative, but potentially erroneous, inferences (Sparks et al., 2016). Having multiple sources of information facilitates prospective travelers' judgement of informativeness of reviews, leading to more engagement in voting for helpful reviews. Frequent response stimulates more reviews and more positive ones, and enhances the recency, quantity and quality of reviews. Altogether, they form the basis for a better popularity position among its competitors. In sum, frequent response helps invite more reviews, higher ratings, and more voting for helpfulness for a hotel, and gain better popularity among its competitors.

Hypothesis 1. *The frequency of response positively affects the volume of reviews (H1a), average valence of reviews (H1b), volume of voting for helpfulness (H1c), and popularity ranking (H1d).*

2.3.2. Response speed

Response speed refers to how quickly a hotel responds to reviews compared with other hotels. Rapid response allows the information provider to help the information seeker quickly structure the particular issues he or she faces and facilitate decision making (Weiss, Lurie, & MacInnis, 2008). Management response can reach the most prospective consumers only when a hotel responds immediately after a review is posted. Speedy response enhances communication synchronicity, which refers to a shared pattern of coordinated behavior with a common focus. High synchronicity reduces cognitive effort to encode and decode messages, yielding faster message transmissions (Dennis, Fuller, & Valacich, 2008). Thus, speedy response boosts a greater level of interaction and shared focus and prompts travelers to write reviews, leading to a higher volume of reviews. Literature on service failure recovery highlights that an immediate response is central to customer evaluations of service quality and effective in enhancing perceptions of justice or fairness (Pizzutti & Fernandes, 2010; Smith, Bolton, & Wagner, 1999). Prompt response signals that hotels appreciate customers' input, thus inducing more satisfactory consumption as indicated by a higher valence of subsequent reviews.

An immediate response helps clarify ambiguity and provides relevant information to minimize confusion and inconsistent interpretations of the issues (Daft & Lengel, 1984, 1986; Dennis & Kinney, 1998). Weiss et al. (2008) show that speedy responses to inquiries in an online forum are considered more valuable. High synchronicity resulted from speedy response reduces cognitive effort needed to process reviews and response, leading to a directional judgement of review informativeness. Thus, speedy response also attracts more prospective travelers to vote for helpfulness who otherwise may not. With more new reviews and more satisfactory ones, speedy response improves the recency, quantity and quality of reviews, which ultimately help hotels gain competitive advantage as indicated by a better popularity ranking. Thus, speedy response helps invite more reviews, higher ratings, and more voting behaviors, and obtain a better popularity.

Hypothesis 2. *The speed of response positively influences the volume of reviews (H2a), average valence of reviews (H2b), voting volume for helpfulness (H2c), and popularity ranking (H2d).*

2.3.3. Response length

Response length, which is measured by the word count of a response, reveals the amount of information delivered in the response. Schwenk (1986) shows longer messages written by senior managers are more persuasive. The amount of information affects communication outcomes by reducing uncertainty (Daft & Lengel, 1984, 1986). Otondo, Van Scotter, Allen, and Palvia (2008) confirm that the more information conveyed by a communication medium, the greater its capacity to reduce uncertainty. Similarly, when a hotel initiates long response (compared with short response), prospective consumers perceive to a greater extent the hotel's intention to care for its customers. To reciprocate the hotel's good conducts, travelers are more likely to share their experience with the firm and other travelers, leading to more review creating. The information value delivered by long response facilitates prospective travelers to achieve more informed evaluations of the hotel and obtain more satisfactory consumption experience. Thus, we propose long response results in a higher average valence of reviews.

Meanwhile, the larger amount of information conveyed by long response discloses the hotel's characteristics in greater detail. The more specific information supplements that released in the reviews and enables the prospective consumers to form a more clear and accurate evaluation of review helpfulness. Consequently, prospective travelers are more likely to indicate their preference of the review by voting. As long response invites more fresh and favorable reviews, it finally leads to an enhanced hotel popularity ranking.

Hypothesis 3. *The length of response positively impacts the volume of reviews (H3a), average valence of reviews (H3b), volume of voting for helpful reviews (H3c), and popularity ranking (H3d).*

2.3.4. The moderating effect of hotel category

We propose a moderating effect of hotel category (i.e., budget hotels vs. premium hotels) on the signaling effectiveness of management response. Hotels can be categorized into budget or premium hotels, depending on the star ranking. The star ranking of a hotel represents its position in the industry and among consumers, and reflects the long-term strategy it has in its assets (Israeli, 2002). Different star ranks set up different expectations and evaluation standards, in term of brand name, price, and physical appearance and so on, for travelers to judge accommodation quality.

According to Dawar and Parker (1994), among the most prevalent signals studied, the signaling effectiveness of brand names, price, physical appearance, and retail reputation or store name deceases successively. The relative efficacy of different signals is determined by their specificity, or the predictive value, which refers to the extent to which the consumers believes that the signal is predictive of a product's quality. For the hospitality industry, the brand names (e.g., Hilton or Sheraton), higher prices, and pleasant physical appearance are perceived to be more predictive of quality for premium hotels. Consequently, prospective travelers are less likely to rely on management response to infer the quality of premium hotels. In contrast, these alternative signals are less salient in quality inference for budget hotels; consequently, how budget hotels respond to their customer reviews becomes more indicative of hotel quality. Thus, for budget hotels, prospective travelers are more likely to infer a higher quality for those who initiates frequent, speedy, or long responses. Thus, the frequency, speed and length of response signal more information on hotels' care for customers and on service quality for budeget hotels than for premium hotels, inducing a higher level of CEBs.

Hypothesis 4. *The frequent, speedy and long response is more effective for budeget hotels than for preiumiu hotels in enhancing the volue of reviews (H4a), average valence of reviews (H4b), the volume of votes for helpfulness (H4c), and popularity ranking (H4d) to a greater extent*

The above developed hypotheses concerning the signaling effect of management response are summarized in Fig. 1.

3. Empirical investigations

3.1. Data description and statistical summary

Relying on an automatic crawler, we collected the data for the hotels in San Diego from TripAdvisor, which introduced the function of responding for hotels in 2004. We construct two different sets of panel data. The first consists of all the historical (more than 10 years) reviews and responses crawled on 27 August 2014. This is used to assess the effect of management response in week t-1 on the average valence and volume in week t. After matching the response and review data, the final unbalanced weekly panel consists of 212 responding hotels between the 2nd week in 2004 and the 35th week in 2014. The second panel records the weekly votes each hotel receives and popularity ranking of each hotel across 35 weeks from January 1 to August 27, 2014. It examines the influence of response in week t-1 on the number of votes for helpfulness for a hotel's reviews and its popularity ranking in week t.

The data contain each hotel's information (e.g., the name, location, star ranking, and weekly popularity ranking), review information (i.e., the posting date, content, and weekly votes for helpfulness for each review), and response information (i.e., the posting date and content for each response). Table 1 displays the characteristics[3] (i.e., the market class, location segment, operation, and size) of hotels based on the information obtained from Smith Travel Research (STR), a market research firm that provides data to the hotel industry (www.str.com).

The summary in Table 2 reveals an increasing pervasion of management response. While the number of reviews rose from 534 in 2003 to 29,709 in 2013, the percentage of reviews that the hotels responded to had been increasing at an accelerating rate. Whereas the percentage of responded reviews was approximately 1% between 2004 and 2006, this increased dramatically after 2008, and approached 46.69% in 2013. At the regional level, while the percentage of hotels responding to reviews was less than 5% before 2007, it reached 83.40% in 2013. This notable trend suggests that the majority of hotels are now using management response to actively manage customer reviews. Overall, from a total of 275 hotels, 27 hotels never received any reviews and were excluded
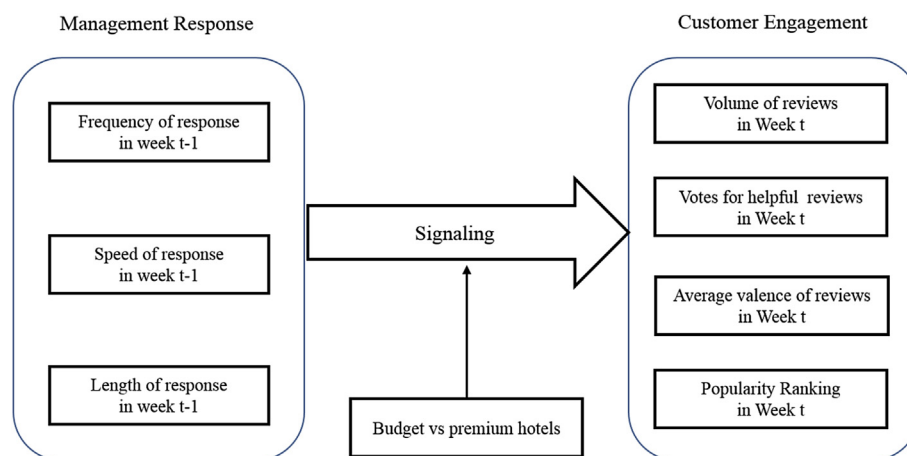

Fig. 1. The signaling effect of management response on customer engagement.

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[3] According to STR, a hotel is assigned a class based on its average daily rate, thus the price information is aggregated into the market class.

Table 1
The characteristics of sampled hotels.

Age		Mean: 35.76 years		Minimum: 2 years		Maximum: 106 years	
Market Class	%	Location Segment	%	Operation	%	Size	%
Luxury	8.33	Urban	23.96	Chain	19.27	<75 Rooms	26.04
Upper Upscale	17.19	Suburban	38.02	Franchised	47.92	75−149 Rooms	32.81
Upscale	26.56	Airport	16.15	Independent	32.81	150−299 Rooms	27.08
Upper Midscale	14.58	Resort	21.88			300−500 Rooms	10.94
Midscale	12.50					>500 Rooms	3.13
Economy	20.83						

Table 2
The increasing pervasion of management response.

Year	No. of Hotels	No. of Reviews	No. of Responses	% of Reviews Responded	No. of Responding Hotels	% of Responding hotels
2003	96	534	–	0.00%	–	–
2004	140	1378	16	1.16%	4	2.86%
2005	159	1885	19	1.01%	2	1.26%
2006	161	2212	37	1.67%	8	4.97%
2007	173	2991	97	3.24%	17	9.83%
2008	182	3555	223	6.27%	28	15.38%
2009	183	4775	554	11.60%	61	33.33%
2010	191	7014	1622	23.13%	90	47.12%
2011	200	11,990	3678	30.68%	125	62.50%
2012	221	19,142	7773	40.61%	157	71.04%
2013	235	29,709	13,872	46.69%	196	83.40%

Note: The summary statistics are based upon the sample crawled on August 27, 2014.

from the subsequent analyses, and 36 hotels never responded to their reviews. Finally, we obtained a sample of 212 hotels that responded to customer reviews.

3.2. Model specifications

3.2.1. Measures for response attributes

As the first response dates of hotels varied greatly, we truncate the original dataset before the week of their first response. We construct three measures for response attributes. The frequency is measured by the total number of responses $hotel_i$ initiated in $week_{t-1}$. The speed at which $hotel_i$ responded to $review_j$, as indexed by $speed_{ij}$, is measured by the following formula: $speed_{ij} = 1 - \frac{delay_{ij} - delay_{min}}{delay_{max} - delay_{min}} = \frac{delay_{max} - delay_{ij}}{delay_{max} - delay_{min}}$, where $delay_{ij}$ is the difference between the posting dates of $review_j$ and $response_j$ for $hotel_i$. $Delay_{max}$ and $delay_{min}$ are the maximum and minimum delays respectively among all responding hotels. $Speed_{i(t-1)}$ captures the average speed of responses for $hotel_i$ in $week_{t-1}$. Finally, the length is measured by the average word counts of responses $hotel_i$ initiated in $week_{t-1}$.

3.2.2. Control variables

Online reviews are organized in a way that consumers can read previous reviews before they make a decision and write a review. TripAdvisor displays prominently the average rating, the total volume and the distribution bars of all reviews for each hotel. Thus, we capture the accumulative effect of all previous reviews by incorporating the average rating, volume, dispersion, and length of all previous reviews up until $week_{t-1}$ and update them upon the new reviews. As this study focuses on the influence of management response in $week_{t-1}$ on customer engagement in $week_t$, we control the effect of previous responses the hotel made before $week_{t-1}$. Three variables are generated by averaging the three attributes of hotel responses (the frequency, speed, and length) across all weeks before $week_{t-1}$.

We include several important control variables when testing our hypotheses about the effect of management response. First, the effectiveness of responses may vary with the level of tailoring: the extent to which their content is pertinent to the responded reviews (Min et al., 2015; Wei et al., 2013). As both content and style elements of text-based communication are relevant in determining diagnosticity and accessibility (Ludwig et al., 2013), we capture the tailoring by measuring the linguistic style matching (LSM) and semantic relevance for each dyad of review and response. LSM measures the use of similar function words between two conversation partners and represents a form of psychological synchrony (Ireland & Pennebaker, 2010; Pickering & Garrod, 2004). Such synchronization increases rapport, credibility, and shared perceptions and enhances subsequent conversations (Ludwig et al., 2013). We generate LSM from the Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, and Francis (2007)) by following the procedures in Ireland and Pennebaker (2010). We obtain the semantic relevance by text similarity analysis using the soft cosine algorithm specified as Equation (1) (Gómez-Adorno & Pinto, 2014).

$$\text{Similarity}_{ij} = \frac{R^i \cdot R^j}{\|R^i\|\|R^j\|} = \frac{\sum_{k=1}^{K} R_k^i \times R_k^j}{\sqrt{\sum_{k=1}^{K} \left(R_k^i\right)^2} \times \sqrt{\sum_{k=1}^{K} \left(R_k^j\right)^2}},$$

(1)

where R^i and R^j the K-dimensional topic probability vector for $Review_i$ and $Response_j$. After obtaining the LSM and semantic relevance for each dyad of response and review, we generate the weekly LSM and weekly similarity for each hotel. Also, since previous studies reveal the effect of a responder's position (e.g., Sparks et al., 2016), we control the proportion of responses in $week_{t-1}$ $week_{t-1}$ issued by senior managers (totally 35,677) and that by junior staff (totally 4,330).

We specify the effect of response attributes on customer engagement and the moderation of hotel category in Equations (2) and (3). Following Chevalier and Mayzlin (2006) who adopted sales

rank as the outcome measure, we transform popularity ranking into $-\ln(\text{popularity ranking})_{it}$ for $hotel_i$ in $week_t$ to measure its popularity. Finally, we use Volume_{it}, Valence_{it}, Votes_{it} and $-\ln(\text{polularity ranking})_{it}$ to gauge CEBs. We dummy code hotel category with 1 for premium hotels (i.e. 3 stars or above, 52.67%) and 0 for budget hotels (i.e., below 3 stars, 47.33%). $X_{i(t-1)}$ includes all the above mentioned control variables.

$$
\begin{aligned}
\text{Customer Engagement}_{it} = {} & \gamma_0 + \gamma_1 \text{Frequency}_{i(t-1)} \\
& + \gamma_2 \text{Speed}_{i(t-1)} + \gamma_3 \text{Length}_{i(t-1)} \\
& + \Gamma X_{i(t-1)} + \varepsilon_{i(t-1)}
\end{aligned}
\tag{2}
$$

$$
\begin{aligned}
\text{Customer Engagement}_{it} = {} & \gamma_0 + \gamma_1 \text{Frequency}_{i(t-1)} \\
& + \gamma_2 \text{Speed}_{i(t-1)} + \gamma_3 \text{Length}_{i(t-1)} \\
& + \gamma_4 \text{Hotel category}_i * \text{Frequency}_{i(t-1)} \\
& + \gamma_5 \text{Hotel category}_i * \text{Speed}_{i(t-1)} \\
& + \gamma_6 \text{Hotel category}_i * \text{Length}_{i(t-1)} \\
& + \Gamma X_{i(t-1)} + \varepsilon_{i(t-1)}
\end{aligned}
\tag{3}
$$

3.3. Empirical results

3.3.1. Signaling effect of management response

Based on the results in Table 3, the frequent response enhances the information reciprocity and thus appeals to travelers to create more original content, as indicated by more reviews (0.126^{***}, $p < 0.01$). Frequent response improves prospective travelers' understanding of any issues mentioned and leads to more satisfactory experiences, resulting in more positive reviews (0.002^{*}, $p < 0.01$). The arrival of new and more positive reviews stimulated by frequent response enhances the recency, quantity and quality of review, which also significantly improves popularity ranking (0.002^{**}, $p < 0.05$). However, frequent response does not encourage more voting for helpfulness (-0.000, $p > 0.5$). The significant positive effect of frequency highlights the important role of signaling and information value conveyed by newly released management responses. Our measure of response frequency on a weekly basis yield results that are different from previous studies that measure cumulative frequency (Xie et al., 2014).

Consistent with the service recovery literature, immediate response is effective in enhancing the consumption satisfaction of prospective travelers as indicated by an increased valence in $week_t$ (0.036^{**}, $p < 0.10$). Immediate response also increases travelers' likelihood of writing reviews (1.265^{***}, $p < 0.01$). It helps to appeal more travelers to engage in voting for helpfulness (0.304^{*}, $p < 0.10$). Our results are consistent with Sparks et al. (2016) and Min et al. (2015), who show that timely response yields more favorable customer evaluations. It also signifies sufficient human resources in customer relationship management, thus signaling a better quality for hotels. An immediate response helps to clarify any ambiguity and minimize any confusion raised by customer reviews and enables future travelers to quickly structure their expectations of accommodation experience. Consequently, the increased volume and enhanced valence of reviews determine the hotel to gain a greater competitive advantage, as shown by a higher popularity (0.015^{*}, $p < 0.10$).

Longer and more elaborate responses are not effective in attenuating the information asymmetry for prospective consumers, as shown by the insignificant effects on volume (0.732, $p > 0.1$),

valence (0.017, $p > 0.1$), voting for helpfulness (0.001, $p > 0.5$), and popularity (-0.000, $p > 0.1$). Thus, we find no evidence for the signaling effect of long response. Perhaps, lengthy response poses cognitive overload and induces even greater equivocality in prospective travelers' information processing, especially when information is unfamiliar or complex (Otondo et al., 2008). Long response may also activate travelers' persuasion knowledge and prompts the travelers to perceive it as hotels' persuasion attempt. Consequently, travelers turn to coping tactics such as ignoring or discounting the value of long responses (Shu & Carlson, 2014).

3.3.2. The moderating effect of hotel category

As pricing, branding or certifications as signals of quality are less available for budget hotels, management response may be more effective for budget hotels than for premium hotels. H4 is partially supported by the interactions between product category and response attributes in Table 3. Response frequency shows a more pronounced effect in signaling for budget hotels than for premium hotels. Frequent response help budget hotels to receive more new reviews (-0.209^{***}, $p < 0.01$), increase the average valence of reviews (-0.008^{*}, $p < 0.10$), and encourage more prospective travelers to engage in voting for helpfulness (-0.011^{*}, $p < 0.10$) to a greater extent. Aggregately, frequent response helps to improve the popularity ranking for budget hotels more than premium hotels (-0.0042^{*}, $p < 0.10$). Similarly, immediate response demonstrates a more effective signaling as it leads to more reviews (-2.10^{***}, $p < 0.01$) and enhance the popularity ranking among competitors (-0.013^{*}, $p < 0.10$) for budget hotels more than for premium hotels. But the effect of response speed does not differ for the valence (0.123, $p > 0.10$) or travelers' voting behavior (-0.051, $p > 0.50$). Response length is found to be similarly ineffective for either premium or budget hotels in these areas.

4. Discussions and implications

This study proposes management response to online reviews as a continuous and reciprocal communication process to engage travelers via the signaling mechanism. Based on the field data, we show that the response attributes affect the signaling effect of management response on CEBs. Although frequent response does not lead to more voting for helpfulness, it encourages more consumers to write reviews for their consumption experience, leads to more satisfactory reviews as manifested by higher ratings, and improves a hotel's popularity ranking. Thus, frequent response from a hotel enhances information reciprocity, stimulates more information exchange and interactions, and plays its signaling role in cultivating customer engagement.

Immediate response is also desirable as it attracts more travelers to more create content and contribute for a hotel, such as writing more reviews and voting more for helpfulness. It also enhances the average valence for new reviews and ultimately the popularity ranking on TripAdvisor. Speedy response signals that hotels care about customers' comments and make conscientious efforts to address their concerns. These results support the findings of previous studies that speedy response promotes customer inferences regarding hotels' trustworthiness and concern for customers (Min et al., 2015; Sparks et al., 2016). This is also consistent with the importance of timeliness documented in service failure recovery literature.

Surprisingly, long response does not help to increase travelers' engagement in wring reviews or voting for helpful reviews. It does not enhance either the ratings of reviews or the hotels' popularity ranking. Although long responses take more effort, too much information may induce cognitive overload and hamper information processing (Otondo et al., 2008). It may also raise consumers' suspicion of a hotel's persuasion motives, thereby activating their

Table 3
The influence of management response on customer engagement.

IV	DV							
	Valence$_{it}$	Volume$_{it}$	Votes for Helpfulness$_{it}$	-ln(Popularity Ranking)$_{it}$	Valence$_{it}$	Volume$_{it}$	Votes for Helpfulness$_{it}$	-ln(Popularity Ranking)$_{it}$
Frequency$_{i(t-1)}$	0.002[*]	0.126[***]	-0.000	0.002[**]	0.007[**]	-0.002	-0.004	0.0002
	(0.001)	(0.039)	(0.005)	(0.0008)	(0.003)	(0.009)	(0.004)	(0.0002)
Speed$_{i(t-1)}$	0.036[*]	1.265[***]	0.304[*]	0.015[*]	0.002	0.092	0.300[*]	-0.001
	(0.02)	(0.336)	(0.161)	(0.008)	(0.099)	(0.199)	(0.165)	(0.009)
Length$_{i(t-1)}$	0.017	0.732	0.001	-0.000	0.111	0.562	0.001	-0.000
	(0.184)	(0.702)	(0.001)	(0.000)	(0.254)	(0.651)	(0.001)	(0.000)
Hotel category$_i$ × Frequency$_{i(t-1)}$	–	–	–	–	-0.008[**]	-0.209[***]	-0.011[*]	-0.0042[*]
					(0.003)	(0.070)	(0.006)	(0.0022)
Hotel category$_i$ × Speed$_{i(t-1)}$	–	–	–	–	0.123	−2.10[***]	-0.051	-0.013[*]
					(0.156)	(0.562)	(0.084)	(0.007)
Hotel category$_i$ × Length$_{i(t-1)}$	–	–	–	–	-0.214	0.066	-0.001	0.0001
					(0.291)	(1.081)	(0.002)	(0.0001)
Control variables								
LSM$_{i(t-1)}$	0.057	0.520	0.305	0.001	0.056	0.560	0.327	0.004
	(0.116)	(0.341)	(0.272)	(0.018)	(0.116)	(0.349)	(0.272)	(0.019)
Similarity$_{i(t-1)}$	0.345[***]	-0.177	-0.088	0.002	0.341[***]	-0.164	-0.034	0.0003
	(0.120)	(0.389)	(0.457)	(0.018)	(0.119)	(0.390)	(0.475)	(0.018)
Proportion of senior staff	-0.057	0.185	0.233	-0.005	-0.059	0.091	0.227	-0.001
	(0.227)	(0.554)	(0.252)	(0.014)	(0.225)	(0.556)	(0.258)	(0.015)
Proportion of junior staff$_{i(t-1)}$	-0.120	0.983	0.220	-0.013	-0.120	0.828	0.225	-0.008
	(0.229)	(0.645)	(0.260)	(0.018)	(0.227)	(0.602)	(0.267)	(0.018)
Valence of previous reviews$_{i(t-1)}$	0.099	0.442[*]	0.048	0.006[***]	0.097	0.611[***]	0.052	0.006[***]
	(0.101)	(0.252)	(0.041)	(0.002)	(0.101)	(0.277)	(0.041)	(0.002)
Volume of previous reviews$_{i(t-1)}$	0.014	1.463[***]	0.004[***]	0.0002[***]	0.016	1.392[***]	0.004[***]	0.0019[***]
	(0.017)	(0.218)	(0.001)	(0.0001)	(0.017)	(0.209)	(0.001)	(0.0006)
Dispersion of previous reviews$_{i(t-1)}$	-0.059	0.028	0.051	-0.0054[***]	-0.059	0.006	0.047	-0.005[***]
	(0.088)	(0.168)	(0.054)	(0.0017)	(0.088)	(0.162)	(0.053)	(0.002)
Length of previous reviews$_{i(t-1)}$	0.034[***]	-0.003	-0.002	-0.0089[***]	0.034[***]	0.005	-0.002	-0.0086[***]
	(0.008)	(0.026)	(0.011)	(0.0003)	(0.008)	(0.025)	(0.011)	(0.0002)
Previous response frequency $_{i(t-1)}$	0.031	-0.291	0.000	0.0006[***]	-0.029	-0.348[*]	0.000	0.0006[***]
	(0.021)	(0.196)	(0.001)	(0.0000)	(0.022)	(0.190)	(0.000)	(0.0000)
Previous response speed$_{i(t-1)}$	0.058	−1.146	0.171[*]	0.0042[**]	0.062	−1.083	0.178[*]	0.003[*]
	(0.181)	(0.722)	(0.097)	(0.0015)	(0.183)	(0.708)	(0.109)	(0.0018)
Previous response length $_{i(t-1)}$	1.334[***]	-0.409	0.024[***]	-0.0003[***]	1.309[***]	0.144	0.023[***]	-0.0002[***]
	(0.419)	(1.435)	(0.008)	(0.0001)	(0.418)	(1.384)	(0.008)	(0.0006)
Month effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	4.479[***]	−2.400[*]	1.67[**]	3.17[**]	4.441[***]	−2.043	1.50[*]	3.02[**]
	(0.54)	(1.446)	(0.821)	(1.584)	(0.552)	(1.368)	(0.801)	(1.500)
R^2	0.2320	0.2046	0.9707	0.1613	0.2427	0.2185	0.9848	0.1721

Note: [*] - marginal significant at 0.10 level; [**] - significant at 0.05 level; [***] - significant at 0.01 level. Figures in the parentheses are the standard errors.

coping tactics such as ignoring or discounting the information value of the message (Shu & Carlson, 2014).

The moderating effect of hotel category suggests that budget hotels should proactively take advantage of response as a way of signaling. Compared with premium hotels, budget hotels should respond in a frequent and timely manner to increase the content creating and contributing of CEBs as well as the popularity. As pricing, branding or certifications are less feasible to signal quality information for budget hotels, management response becomes a promising signaling mechanism to engage customers and leverage competitive advantages.

5. Theoretical implications

The Internet's accessibility, reach, and transparency have empowered marketers who are interested in monitoring and influencing WOM (Kozinets et al., 2010). Without management response, firms are merely bystanders, watching events unfold and public opinions form. This study underscores the prominent role of management response in transforming the organic consumer-consumer WOM into a three-way interactive network between existing customers, firms and perspective consumers. This networked platform not only enhances information sharing among

three parties but also cultivates customer engagement and builds stronger relations among them.

Instead of treating it as one-time communication in previous studies, we highlight management response as a continuous, dynamic and reciprocal communication process. We differ from service failure recovery literature or Gu and Ye (2014) by pinpointing the signaling effect of management response on prospective consumers who lack past experience for decision making. We use a large set of field data over an extended period and obtain the results about three major quantitative attributes of management response (the frequency, speed, and length). Therefore, we highlight the importance of response as a long-term strategy for business to signal the care for customers and their service quality, which in turn enhance customer engagement and improve the bottom-line of firms.

This study is among the first to empirically measure and investigate customer engagement on social media platforms in the hospitality context. Wei et al. (2013) operationalize CEBs as review-writing and examine the effectiveness of generic vs specific response to positive and negative WOM. We suggest that hospitality firms should adopt management response to cultivate more customer engagement. In this study, to gauge two types of CEBs (i.e., content creating and contributing), we adopt four measures

including the volume and valence of reviews, the number of votes for helpful reviews as well as popularity ranking and generate the empirical evidence on the effect of management response to online reviews on the CEBs.

6. Managerial implications

Currently, more companies in the tourism industry treat online platforms as one of the most important channels to reach customers. The power of online platforms lies in their ability to amplify the effect of WOM and social influence among travelers. The hospitality industry has been urged to influence customer engagement and leverage it as a distinctive organizational capability (Wei et al., 2013). Our results provide insight and evidence supporting the adoption of management response as a continuous, dynamic and reciprocal communication process to engage travelers and help brands effectively scale their social presence on online platforms. Our findings shed light on how to respond to online reviews to improve the effectiveness of signaling and enhance customer engagement. Instead of watching on the sidelines, hotels can monitor and actively influence the generation and distribution of WOM. The significant signaling effect of response helps to show a hotel's care for customers and quality services, and underscores it as a channel of promising communication. Management response is more effective for budget (vs. premium) hotels, especially when responding in a frequent and timely manner.

Hotels should adopt responses that are fit for different purposes and situations. A new business with a low level of consumer awareness may respond to customer reviews in a frequent and timely manner to encourage more customer reviews and more votes for helpful reviews, and build a base of loyal customers. Regardless of valence, the more consumers talk about a hotel, the greater the chances that other travelers will become aware of it, leading to a greater number of travelers considering the hotel (Berger & Fitzsimons, 2008; Berger, Sorensen, & Rasmussen, 2010). Speedy response improves the satisfaction of future travelers and enhances customer engagement, thus helping hotels to leverage their popularity and gain competitive advantage. However, lengthy response should be avoided as it is ineffective in enhancing customer engagement in content creating or contributing.

7. Limitations and research directions

Readers should bear in mind several limitations when interpreting our findings. For instance, due to the overflow of reviews on TripAdvisor, we selected San Diego as our target city for data collection. Although choosing typical cities is quite common for WOM research (e.g., Schuckert, Liu, & Law, 2015; Sridhar & Srinivasan, 2012), the generalization of these findings to other cultures or regions should be done with caution. Also, the lack of sales data for the sample limits the external validity of our findings.

Another important question concerns response length. There is no doubt that the longer the response, the more effort a hotel has to devote. However, lengthy responses may backfire, as this study shows. Though this study has controlled some semantic and linguistic characteristics of response, future studies should deliberately examine the content of responses. Most studies on management response provide only experimental evidence on the effectiveness of different response strategies (Min et al., 2015; Sparks et al., 2016; Wei et al., 2013). Future studies should use field data to enhance the external validity. For example, how hotels can tailor their responses according to the nature of negative reviews (Sridhar & Srinivasan, 2012), and whether to apologize and accommodate with a compensatory measure or to adopt an unapologetic and defensive stance, will be of great value to hotel managers in formulating effective responses to minimize the effect of negative reviews.

Additionally, like almost every research relying on field data to investigate WOM or management response, our field data may not able to account for the self-selection issue: travelers self-select whether to stay in a hotel after reading its reviews and responses, or whether to write a review after their stay. Future studies that capture all groups of travelers will significantly fill the research gaps in the current literature.

Appendix

Table A1
Literature Review on Management Responses.

Author (Year)	Component	Focal Variables	Effects	Design	Main Conclusion
Lee & Cranage (2014)	Content Audience	Different response strategies to NWOM (Moderator: NWOM consensus ($\frac{\# \ of \ Neg}{\# \ of \ Pos}$))	Observing consumers' attitude recovery after receiving managerial responses	2 (1/3 vs 3/1) × 3 (no, accommodative, vs defensive) between-subject experiment	A defensive response is the most effective for low NWOM consensus, whereas an accommodative response or no response is more effective for high NWOM consensus.
Wei et al. (2013)	Content Audience	Generic vs specific response (Moderator: valence of review)	Observing consumers' trust and perceived quality of response	A 2 (positive vs negative) × 2 (generic vs specific) between-subject design	For positive reviews, specific response is more effective. But for positive reviews, no difference.
Lee and Song (2010)	Content Audience	Different response strategies to NWOM (Moderator: consensus and vividness of NWOM)	Observing consumers' attribution of NWOM to company and company evaluation	Study 1: 2(low vs high consensus) × 2(low vs high vividness); Study 2: defensive, accommodative vs no response	Defensive response (but accommodative response did not) lead to more attribution to company than no response situation; accommodative response lead to better company evaluation than defensive or no response.
Min et al. (2015)	Content Audience Speed	Different response strategies to NWOM	Observing consumers' satisfaction of the response	A 2 (empathetic vs non-empathetic) × 2 (paraphrased vs nonparaphrased) × 2 (quick vs slow) between-subject experiment	Response with empathy or paraphrasing, or in a quick manner were more favored.
	Content				

Table A1 (*continued*)

Author (Year)	Component	Focal Variables	Effects	Design	Main Conclusion
Van Noort & Willemsen (2012)	Channel Audience	Different response strategies to NWOM (Moderator: Different platforms)	Observing consumers' brand evaluation	A 3 (proactive, reactive vs no response) × 2 (customer-generated vs company blog) between-subject experiment	Response is effective to counter NWOM effect. Proactive response is more effective on brand-generated platform, where reactive response is similarly effective on both platforms. The effect is mediated by consumers' perceived conversational human voice of response.
van Laer and de Ruyter (2010)	Content Source Audience	The content and source of management response	Observing consumers' integrity restoration after integrity violating	Study 1 & 2: 2 (analytical, narrative, vs no) × 2 (apology vs denial); Study 3: narrative apology with low (issued by company spokesman) vs high (issued by employee) empathy	Denial in analytical format and apology in narrative format outperform other combinations (Study 1). The effectiveness is mediated by transportation (Study 2). Response by employees is more effective than that issued by the company's spokesperson (Study 3).
Sparks et al. (2016)	Source Content Audience Speed	Presence or absence of response to NWOM; source, voice, speed, and action frame of response	Observing customers' inferences of a business's trustworthiness and its caring about customers	A 2 (high vs low position) × 2 (professional vs conversational human voice) × 3 (fast, moderate, vs. low speed) × 2 (past vs future action frame) between-subject experiment (no response: control)	The presence (vs. absence) of a response, using a human (vs professional) voice, or a timely (vs moderate or slow) response yield more favorable customer inference of trustworthiness and caring.
Rose and Blodgett (2016)	Content	Presence of response to NWOM and response content (Moderator: $\frac{\# \ of \ Neg}{\# \ of \ Pos}$ and controllability)	Observing consumers' perception of company reputation	Study 1: 2 (1/5 vs 2/5) × 2 (controllable vs uncontrollable) × 2 (response vs no response); Study 2: 2 (1/5 vs 2/3) × 2 (controllable vs uncontrollable) × 2 (assurance of future vs corrective action)	Company reputation was more favorable when hotel responded. The effect of a response was not significant different between 1/5 and 2/5. Response was more effective in enhancing reputation when the problem was controllable (Study 1). The two response with assurance of future or corrective action are equally effective (Study 2).
Mauri & Minazzi (2013)	Audience Audience	Presence of response to NWOM (Moderator: $\frac{\# \ of \ Neg}{\# \ of \ Pos}$)	Observing consumers' purchase intention and expectations	A nested design: (7/3 vs 3/7): (response vs no response)	The presence of response to NWOM hurts observing consumers' purchase intention.
Xie et al. (2014)	Frequency	Total number of responses (Moderator: valence, volume, and variance)	Hotel revenue per available room	A panel data for 843 hotels over 10 quarters (at the hotel level) from TripAdvisor	The number of responses has a significant negative effect on hotel performance. It strengthens the positive effect of location but weakens the positive effect of cleanness, suggesting hotels should selectively respond to specific consumer reviews.
Gu and Ye (2014)	Audience	Presence or absence of response (Moderator: very low rating (i.e., 1 and 2))	The second rating of responded customers and observing customers who observed response to others but did not themselves.	Panel data from Ctrip (316,568 customer reviews for 5831 hotels)	Response exerts no effect in enhancing the second rating of repeated customers. But it helps recover satisfaction of very dissatisfactory customers who receive the response after first ratings but deteriorates satisfaction of very dissatisfactory customers who observe response to others but do not themselves.
Park & Allen (2013)	–	Perceived accuracy of online review, internal communication style, and the management purposes to use online reviews	Whether the hotels respond frequently or never respond	Case studies of 4 high-end hotels (two respond frequently and the other two never respond)	Frequent responders considered online reviews to be an honest gauge of consumer sentiment and adopted a collaborative communication style with regular meetings and consolations but infrequent responder believed reviews represented only extremely positive or negative view, and met only when needed.

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