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## **The Influence of Online Reviews on Consumers' Attributions of Service Quality and Control for Service Standards in Hotels**

**ABSTRACT.** Online travel reviews are emerging as a powerful source of information affecting tourists' pre-purchase evaluation of a hotel organization. This trend has highlighted the need for a greater understanding of the impact of online reviews on consumer attitudes and behaviors. In view of this need, we investigate the influence of online hotel reviews on consumers' attributions of service quality and firms' ability to control service delivery. An experimental design was used to examine the effects of four independent variables: framing; valence; ratings; and target. The results suggest that in reviews evaluating a hotel, remarks related to core services are more likely to induce positive service quality attributions. Recent reviews affect customers' attributions of controllability for service delivery, with negative reviews exerting an unfavorable influence on consumers' perceptions. The findings highlight the importance of managing the core service and the need for managers to act promptly in addressing customer service problems.

**KEYWORDS.** Online reviews; e-complaints; travel choice; attributions; word of mouth; service quality; service failure

## ***INTRODUCTION***

The internet is being used increasingly by consumers to inform their decisions on which holiday destination to visit or hotel to book. Without actually experiencing the hotel or holiday destination, travelers have limited opportunity to assess the quality of service they will receive and whether it will meet their expectations. Holidays are intangible products that are produced and consumed concurrently and therefore difficult to evaluate prior to their consumption (Litvin, Goldsmith, & Pan, 2008; Papathanassis & Knolle, 2011). In making their decision, consumers often obtain recommendations from friends through word of mouth, refer to the media including advertising and marketing campaigns, or consult sources on the Internet. The Internet in particular provides easy access to reviews posted anonymously by multiple consumers evaluating hotels and holiday resorts throughout the world (Buhalis & Law, 2008). These reviews offer potential consumers a way to assess the experience of a holiday destination or of staying in a particular hotel without actually having been there.

Online consumer reviews as a form of electronic word of mouth (eWOM) are experiencing massive growth (Brown, Broderick, & Lee, 2007) and are one of the most relied on sources of information for choosing holiday destinations (Murphy, Mascardo, & Benckendorff, 2007). Research shows that consumers are willing to have faith in this eWOM to provide them with information on which to base their perceptions of firms and subsequently their purchasing decisions (Hennig-Thurau et al., 2004; Li & Bernoff, 2008). Common platforms for travelers to share their travel experiences include online review websites such as TripAdvisor, Yahoo! Travel, Iggogo, and Lonely planet (Lee, Law, & Murphy, 2011).

Consumers' use of third-party online review sites presents a challenge to many service firms in the tourism industry (Xiang & Gretzel, 2010). Reviews provide both positive and negative evaluations of a firm's service and often remain on sites for a long period of time, exerting a lasting impact on a firm's reputation (Hennig-Thurau et al., 2004). Of critical importance, then, is consideration of how online review sites may influence consumers' perception of firms' quality of service and of how best to manage these sites to reduce the impact of negative reviews on the firm's reputation.

While previous studies have mainly focused on the increased use of review sites and the influence that online reviews have on firm performance indicators such as hotel room bookings (Ye, Law, & Gu, 2009; Ye et al., 2011) and restaurant popularity (Zhang et al., 2010), or consumer outcomes such as consideration of hotel (Vermeulen & Seegers, 2009) and trust in the hotel and intention to book the hotel (Sparks & Browning, 2011), there is still a limited understanding of the interaction between the factors linked to the presentation and content of online reviews on the customer's attributions of service quality and which factors would be important to address to reduce the potential damage to the brand and reputation of the hotel and holiday destination. Our research takes an experimental approach to test the effect of four variables inherent within an online review: the order of presentation (whether positive or negative reviews appear first), the general valence of the reviews (whether they are predominantly positive or negative), the focus of the content of the review (on more tangible features or on the relationship aspect of service), and the presence of other heuristic information, such as ratings, that may affect a consumer's attribution of service quality and attribution of controllability for service delivery at the target hotel.

## ***CONCEPTUAL BACKGROUND***

### ***Service Quality and Service Failure***

Customers base their assessment of the quality of service on whether the organization has met or even exceeded their expectations (Parasuraman, Zeithaml, & Berry, 1985, 1988; Zeithaml, Parasuraman, & Berry, 1990). Service quality is a comparison of performance to expectations and, regardless of the type of service, customers use similar criteria to evaluate service quality (Parasuraman et al., 1985, 1988; Zeithaml et al., 1990). These criteria fall into 10 categories of “service quality determinants” (Parasuraman et al., 1985, p. 46): reliability, responsiveness to the customer, competence of the frontline staff, accessibility of the service, courtesy, understandable communication of the service, credibility, security, understanding and knowing the customer, and tangibles such as the physical facilities and appearance of staff. These standards for determining the quality of services differ from criteria used for goods, which can be tangible attributes such as smell, taste, and price that may be discernible prior to purchase.

Satisfaction with service, however, depends primarily on the consumer’s experience, and only after experiencing the service can the consumer assess the quality. For hotels in particular, the consumer can assess many aspects of service only after checking in, such as the quality of the facilities provided, the cleanliness of the rooms, and the friendliness of the staff. Thus, for many potential customers the search and decision stage in selecting an accommodation property will entail making some assessment about existing service quality.

Online reviews offer consumers insight into the service experience without having to actually be present. Negative reviews can be especially potent: previous

research into the structure and content of online reviews suggests that complainants brought the readers into the experience by using highly descriptive language, allowing readers to feel that they were re-living the experience (Sparks & Browning, 2010).

Service failures, which are breakdowns in the delivery of service that result in a shortfall in meeting customer service expectations (Hoffman & Bateson, 1997), tend to occur in the hospitality industry on a fairly regular basis (Sparks & Fredline, 2007). These failures often entail service quality concerns, reservation issues, and room accommodation problems (see for example, Mattila & Mount, 2003), and result in low customer satisfaction, a tendency to engage in negative word of mouth, and an inclination to switch to other firms (Folkes, 1984; Keaveney, 1995; McCollough, Berry, & Yadav, 2000).

### ***Attribution Theory***

Customers often base their decision on whether to purchase or continue to use a product or service on who they believe is responsible for the service failure (Folkes, Koletsky, & Graham, 1987). Attribution theory asserts that consumers make inferences as to the causes of service problems along three dimensions: locus of causality, stability, and control (Weiner, 2000). The locus of causality is related to whether the consumer believes the cause lies with the firm or the consumer (Vázquez-Casielles, del Río-Lanza, & Díaz-Martín, 2007). If the consumer believes the responsibility for service failure lies with the firm (internal locus), he/she is more likely to be angry and dissatisfied and to expect the firm to take some action to rectify the situation (Folkes, 1984, 1988; Iglesias, 2009), and is likely to be less inclined to purchase from the firm.

Stability refers to whether the consumer views the cause of the service experience as temporary or predictable and predetermined. The attribution principle of subjective likelihood of success (satisfaction) after goal attainment or nonattainment suggests that if consumers ascribe an outcome to a stable cause, they are likely to expect the same outcome in the future (Weiner, 2000). On the other hand, ascription to an unstable cause implies that the future may not be the same as the past, suggesting that subsequent outcomes remain uncertain or that the future will differ from the immediate past. The consumer is more likely to be dissatisfied with the service if the failure is attributed to a stable cause such as ongoing and previous service failures (Bitner, 1990; Vázquez-Casielles et al., 2007).

Control attribution, or controllability, refers to the extent to which the consumer believes that provision of quality service is under the control of the firm (Weiner, 2000). Consumers are likely to infer that a firm that has provided high-quality service in the past would have had little if any control over a more recent failure (Hess, Ganesan, & Klein, 2003).

The consumer's prior knowledge of, and experience with, the service organization can also influence attribution of a service failure. More specifically, the brand name and the customer's associations with it influence brand evaluations through the cognitive mechanism of attribution processing (Laczniak, DeCarlo, & Ramaswami, 2001). When service problems arise with a firm that has a reputation for providing excellent customer service, the consumer would most likely see the service failure as a one-off event.

The theoretical framework of attribution theory has been widely used to investigate and understand the inferences consumers draw from word-of-mouth activity (e.g., Chatterjee, 2001). The attribution theory paradigm maintains that



consumers' perceived usefulness of e-WOM product reviews is based on causal inferences they make regarding the reviewer's motivation in posting the review (Sen & Lerman, 2007). Consistent with this principle, research suggests that the recipient's causal inference that the communicator has a reporting bias determines the persuasiveness of a message (Eagly, Wood, & Chaiken, 1978). Research also suggests that the process by which consumers make attributions to a brand after reading a review affects the outcomes of consumer evaluation. For instance, using attribution theory, investigators examining how consumers react to negative word-of-mouth communication found that brand evaluations are lower when receivers attribute the negativity of the message to the brand. However, brand evaluations are higher if receivers attribute the negativity to the communicator (Laczniak et al., 2001).

Attribution as a process is related to consumer decision making and describes the way individuals use information in making causal inferences (Mizerski, Golden, & Kernan, 1979). The attribution process has been demonstrated to play a significant role not only in consumers' evaluation of online reviews (Sen & Lerman, 2007) but also in their subsequent attitudes and behaviors (Folkes, 1988; Weber & Sparks, 2010).

Given the mounting number of travel reviews available in the virtual world, further understanding of the impact of online reviews on consumer behavior requires consideration of consumer attribution processes (Vermeulen & Seegers, 2009). The sections that follow discuss the relationship between the attribution process and perceptions of service quality, framing, valence, and ratings.

### *Service versus Core Features*

The content of a review can encompass a range of product dimensions but generally refers to two aspects of service: the core service and relational service. The core service represents the firm's basic reason for being in the market and comprises the firm's fundamental competency in creating value with and for the customer (Ferguson et al., 1999). In a hotel context, core service includes, for example, providing a comfortable room and offering a suitable meal in a restaurant. The relational component of service arises from customer–employee interaction (Butcher, Sparks, & O'Callaghan, 2003), which supports or facilitates the delivery of the core offering, such as customer services and interpersonal skills of service staff. Service failures can therefore be either core service system failures such as unclean rooms, inedible food, and shoddy appearance of the hotel or, at a more interpersonal level, inappropriate employee behaviors such as being rude or unhelpful (Chung & Hoffman, 1998; Keaveney, 1995).

Analysis of hotel complaint behavior showed that a majority of complaints related to problems associated with hotel employees and physical facilities (Manickas & Shea, 1997; Sparks & Browning, 2010). Similarly, research into online complaints regarding Hong Kong hotels found the highest complaint category to be failures related to service delivery, accounting for 54% of the recorded complaint cases (Au, Buhalis, & Law, 2009). These complaints involved aspects of staff behavior such as being rude or inordinately slow in response to guest requests. Another study also found that the most common e-complaints of hotel guests concerned service delivery failures relating to rude behaviors of service employees, poor service quality, and lack of service (Lee & Hu, 2005).

Research suggests that core and service elements have differential effects on customer evaluation of a service offering. For example, Danaher and Mattsson (1994, 1998) examined the relative importance of various elements of a hotel experience in determining customer satisfaction and concluded that customers' evaluation of the service delivery depends largely on the room and breakfast, which are the core of the hotel service offering. It has been argued that, although the relationship component of service delivery adds value to the service package, it is not a substitute for having strong core service (Crosby & Stephens, 1987). Thus, despite the added value of the service or relational elements, from a consumer's perspective, the core of a service offering still dominates customer service evaluation, as it satisfies the fundamental needs for which a customer enters a service transaction. For example, having a clean and comfort room is often considered more important to hotel customers than having friendly employees at the front desk. We therefore expect that while reviews referring to either core or service elements will have an effect on consumer perceptions of the hotel, those referring to the core service will have a greater effect.

*Hypothesis 1.* Customers are more likely to (1a) make positive service quality attributions and less likely to (1b) believe any problems are controllable by the hotel when the hotel reviews are predominantly about *core* service rather than *staff* service.

### ***Framing***

How information is presented seems to have an important influence on consumer evaluations. Framing refers to “the context within which the information is presented” (Donovan & Jalleh, 1999, p. 613), and whether information is framed

positively or negatively can influence a consumer's perceptions of a product or service (see Dardis & Shen, 2008; Donovan & Jalleh, 1999; Grewal, Gotlieb, & Marmorstein, 1994; Kahneman & Tversky, 1984). Positively framed information highlights a product's advantages or potential gains for consumers, whereas negatively framed information focuses on disadvantages of a product or potential losses for consumers (Grewal et al., 1994).

An early study found that information conveyed with positive frames resulted in the target receiving higher ratings than with negative frames (Levin, 1987). Subsequent research suggests that negative information tends to be over-emphasized and is more influential in creating impressions (see Fiske, 1993). Research in cognitive psychology holds that the order in which people receive information also has a substantial effect on subsequent judgment, known as the primacy effect (e.g., Dennis & Ahn, 2001; Hendrick & Costantini, 1970). Empirical evidence consistently shows that information presented first will have more impact on impressions than information that follows (Pennington, 2000). We could therefore expect (irrespective of the overall tone of reviews) that whether online reviews are framed positively or negatively might influence consumer evaluations with the initial reviews, particularly negative reviews, having more impact than subsequent reviews.

*Hypothesis 2.* When the series of hotel reviews are *framed* with negative reviews, customers are less likely to (2a) make positive service quality attributions and more likely to (2b) believe any problems are controllable by the hotel than when the reviews are *framed* with positive reviews.

## *Valence*

Valence refers to whether the review itself (or collection of reviews) is positive or negative. Positively valenced messages are pleasant, vivid, or novel descriptions of experiences whereas negatively valenced messages contain private complaining, unpleasantness, or denigration of products (Anderson, 1998). Positive online reviews contribute significantly to an increase in hotel bookings (Ye et al., 2009) and yield more positive attitudes toward lesser known hotels, while negative reviews result in consumers' developing a negative attitude to hotels (Vermeulen & Seegers, 2009). The balance between positive and negative reviews of a product presented on a website could influence consumer evaluations.

While the overall valence can be neutral, impartiality is unlikely in the case of reviews, which by their nature focus on a good or bad customer experience. Negative reviews seem to have more impact than positive reviews (Papathanassis & Knolle, 2011) because service failures, described in negative reviews, are perceived as losses and receive a more negative weighting from a consumer (Smith, Bolton, & Wagner, 1999). Furthermore, such negative information is considered more informative and consequential compared to positive or neutral information (Fiske, 1980; Herr, Kardes, & Kim, 1991). From a consumer's perspective, negative information about a product is often perceived as a characteristic of only a low quality product. In contrast, positive and neutral information is linked to high, average, and even low-quality products (Herr et al., 1991; Lee, Park, & Han, 2008). As the proportion of negative reviews increases so does the negative attitude of consumers (Lee et al., 2008). Therefore, we argue that a collection of reviews that is predominantly positive will result in more favorable evaluations than a collection of predominantly negative reviews.

*Hypothesis 3.* Customers are more likely to (3a) make positive service quality attributions and less likely to (3b) believe any problems are controllable by the hotel when the hotel reviews are predominantly positive than when the reviews are predominantly negative.

### ***The Role of Numerical Ratings***

To provide further evaluative information to future customers, online review sites often include quantitative consumer ratings of a product or service as well as star ratings for firms such as hotels (Gerdes, Stringam, & Brookshire, 2008). Faced with a range of information on an online site plus the need to make a quick and efficient decision, customers may use ratings as a way to make evaluations without having to seek out further information. The heuristic-systematic information processing model (cf. Chaiken, 1980; Chaiken, Liberman, & Eagly, 1989) suggests that when individuals lack either sufficient motivation or sufficient cognitive resources (e.g., detailed information or prior knowledge), they tend to rely on heuristics to arrive at a judgment of a message or product (Park & Kim, 2009; Todorov, Chaiken, & Henderson, 2002) and use simple decision rules to formulate their judgments quickly and efficiently (Maheswaran & Chaiken, 1991). This avenue can be especially attractive since people are essentially “cognitive misers” (Fiske & Taylor, 1991) and take shortcuts by using readily available information to inform their decisions (Pennington, 2000). Consumers may turn to ratings as a quick and easy way to evaluate service particularly when faced with limited or ambiguous information (Dardis & Shen, 2008; Fiske, 1992). A pragmatic perspective to perception argues that customers will employ “workable strategies with adequate outcomes for their

own purposes,” using what is simple and familiar to create a picture adequate for decision and evaluation (Fiske, 1992).

This discussion leads us to suggest that customers will rely on ratings over and above other sources of information available on an online review site as a means to assess and evaluate the service being provided by a hotel.

*Hypothesis 4.* Ratings will moderate the influence of framing, valence, and target of reviews (service or core) on (4a) service quality attribution and (4b) controllability attribution.

## ***METHOD***

To investigate the main and interactive effects of the independent variables (e.g., target of complaint) on the change in the outcomes variables (e.g., perceptions of service quality), this investigation employed an experimental approach. Experimental designs are useful for generalizing about theoretical effects of variables rather than generalizing statistical effects to wider population (Highhouse, 2009) and are therefore appropriate for this study.

### ***Simulation Material and Manipulation of Independent Variables***

The research relied on a 2 (target: core or staff) × 2 (valence: positive or negative) × 2 (frame: positive or negative) × 2 (ratings: present or absent) independent-groups factorial design.

To effectively manipulate the selected independent variables, the experiment involved the development of a simulated website. To ensure the realism of the experiment, a professional graphic designer was hired to create the travel review website in consultation with the researchers. The final simulated website, which was

pre-tested over a number of iterations, included several standard features: the name of the website, a photo of the exterior of an unidentifiable hotel, links to other parts of the website, and a description of the hotel being reviewed. To control for the effects of other elements presented on the website, all aspects of the simulated website were held constant across treatments except the manipulated variables of valence, complaint target (service or core features), frame, and ratings. As the materials employed reflected a realistic website, the final design was deemed to have reasonable ecological validity (Viswanathan, 2005). In addition, short reviews were used to avoid long narrative. This approach was suitable for the task and consistent with previous research, which has suggested that customers prefer to see short review content (Papathanassis & Knolle, 2011). The experiment used a total of 16 simulated websites, each containing 12 reviews.

### ***Participants***

Any decision on who should be eligible to participate in an experimental design study should be made by matching the sample participants' knowledge to the task (Viswanathan, 2005). With this requirement in mind, a nonstudent sample was drawn from a national database of residents. The sample comprised 554 respondents who were randomly assigned to one of 16 conditions. The sample was 56% females and 32% males, with the remaining 12% not indicating their gender. Ages ranged from 22 to 82 years, with an average age of 47. Of the participants, 93% had experience with booking accommodations online and 63% indicated they relied on reviews when making a hotel booking. Therefore, the sample was well matched to the task.



## ***Design and Measures***

### *Independent Variables*

*Target of Complaint.* The target of the review was operationalized as either customer service or core features of the hotel. Service-targeted reviews included descriptions such as fantastic/dreadful staff, unwelcoming/welcoming staff, or great/no customer service. Core-targeted reviews included descriptions such as excellent refurbishment/badly needs refurbishing, spotlessly clean/dirty rooms, or bright and cheery/like a dark cave. These phrases were developed from existing reviews, pre-tests, and pilot testing.

*Overall Valence of Ratings.* Each simulated website included 12 reviews, with eight varied on positive or negative valence and the remaining four held constant as “filler” reviews. Predominance of valence was operationalized by varying the valence of the eight reviews: 42% (positive or negative) versus 25% (positive or negative) with the remaining reviews held neutral (33%). In the predominantly positive treatment, the set of 12 reviews included five positive, three negative, and four neutral reviews. In the negative condition, the proportions of positive and negative evaluations were reversed. In addition, positive and negative reviews were paired and made the opposite of each other where possible, as for example, “Great spacious room: the room easily accommodated four people” versus “Small size, very pokey: the room was supposed to accommodate four people.” This approach resulted in paired opposite reviews that were similar in length and wording. For this reason, they were not contained within the same condition. Therefore, to ensure realistic online reviews, the factor of valence was manipulated as predominantly positive or negative, rather than all positive or all negative reviews.

*Frame.* The independent variable of framing was manipulated using an order approach whereby each condition started with either two positive or negative reviews. All 16 conditions ended with a neutral review.

*Ratings.* The independent variable of ratings was operationalized as either presenting a numerical rating on a five-point scale next to the heading or omitting the rating information. In treatments where ratings were present, 1.5 was used for the negative reviews, and 3 and 4.5 were included for the neutral reviews and the positive reviews, respectively.

### *Dependent Variables*

We measured two types of attributions as the dependent variables for the main analysis (i.e., the attribution of service quality and the attribution of controllability). Service quality attribution comprised seven items which were summed and averaged with higher scores to indicate that the hotel and its personnel were perceived as having a strong focus on delivering service quality of a consistently high standard as well as how stable the service problems might be. The items were mainly devised for this study and rated on a seven-point Likert scale from 1 = strongly disagree to 7 = strongly agree. Two of the service quality attributions were to do with stability and adapted from previous studies including Hess et al. (2003), Russell (1982), and Vázquez-Casielles et al. (2007). The alpha coefficient for attribution of service quality scale was .94. Appendix A contains the full list of service quality attribution items.

Controllability comprised four items that were summed and averaged, with higher scores indicating that the hotel and personnel had little control over the causes for the service failure. The items for this scale were adapted from Vázquez-Casielles et al. (2007) and rated on a seven-point Likert scale from 1 = strongly disagree to 7 =

strongly agree. The alpha coefficient for controllability scale was .79. Appendix A contains the full list of controllability items.

### *Manipulation Check and Believability Variables*

To develop and test the independent variables and the external validity of the study, a series of pre-tests was conducted in which participants were assigned to the various conditions and asked to provide feedback on the clarity of the task as well as the effectiveness of the manipulations. Three separate pre-tests were applied, with the last including a “think aloud” task about the study. The simulated website design was then pilot-tested with a small convenience sample using both forced-choice scale items and open-ended feedback questions with respect to the study. In each pre-test and pilot phase, undergraduate and post-graduate business or psychology students participated, as did selected “expert” respondents (Marketing, Tourism, and Psychology faculty members). Several refinements relating to minor wording, star rating levels, or clarity of instructions were made over the development period prior to the main study. The pre-test and pilot phase confirmed the realism of the task.

Because the independent variable of consumer ratings in the reviews was operationalized as either present or absent, no specific manipulation check was used in the main study. Similarly, framing was operationalized by placing the first two reviews as either negative or positive. Therefore no additional tests were conducted in the main study. However, additional manipulation checks were applied to the other two manipulations (valence and target) as they were more abstract in their operationalization.

Specifically, the manipulation of valence was checked using a question asking subjects to indicate the extent to which they agreed that the reviews were more

positive than negative on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). Similarly, the target manipulation was checked using two items: “Overall, any complaints made by the reviewers were mainly about the service” and “Overall, any complaints made by the reviewers were mainly about the rooms” (1 = strongly disagree to 7 = strongly agree). Three believability questions were also included to check whether participants perceived the websites to be realistic (see Appendix A).

### *Procedure*

To test our proposed hypotheses, we purchased a total of 5500 names from a consumer mailing list sampling frame, with equal representation of males and females. In each gender group, 916 respondents were drawn from each of the following age groups: 20-34; 35-44; and 45 and over. Each respondent received an e-mail containing a link to the experiment website. By clicking this link, each respondent was randomly assigned to one of 16 conditions. Participants were first provided information about the research and then instructed to read the online reviews contained on the simulated website page. After exposure to the review stimulus page, they were asked to respond to the questions regarding their attributions of service quality at the hotel and of controllability, as well as a series of manipulation questions. All responses were anonymous.

## ***RESULTS***

After collecting the research data, preliminary screening resulted in elimination of 29 cases owing to a large number of missing values, leaving a total of 525 participants. To ensure that the underlying assumptions of analysis of variance

(MANOVA) were satisfied, examination for outliers was conducted and no evidence was found.

### ***Manipulation Checks***

Manipulation checks were performed following the procedure recommended by Perdue and Summers (1986). Specifically, to assess the experimental manipulation of valence, a 2 (valence) x 2 (target) ANOVA on the valence manipulation check item was conducted. This analysis indicated a main effect for valence but not target (see Table 1). Similarly, for the target manipulation, a 2 (valence) x 2 (target) ANOVA on the target (core) manipulation check item was conducted, indicating a main effect for target but not for valence (see Table 1). The ANOVA results provided evidence of convergent validity for the manipulations tested.

Participants in the core target condition reported a significantly higher mean score than did those in the service condition. In addition, participants in the positive valence condition rated their treatment as significantly more positive than those in the negative valence condition.

Discriminant validity was also supported as the treatments demonstrated a significant effect on the manipulation check variables but not the confound variables. In terms of the strength of manipulations, the results indicated moderate to strong effect size for the manipulations (8% of variance for valence and 43% of variance for core target, respectively), as shown in Table 1. In sum, the manipulation checks indicated that the manipulation of the independent variables of target and valence was successful.

*Insert Table 1 about here*

As this study involved asking participants to respond to reviews posted on a simulated webpage, three believability manipulation check items were included to determine the realism of the experimental material. A mean score was computed for these items, with a high score indicating greater believability (Cronbach's alpha = .79). A one-sample  $t$  test showed the mean believability score ( $M = 5.21$ ,  $SD = 1.03$ ) to be significantly higher than the neutral scale point,  $t(486) = 25.85$ ,  $p < .001$ , with 85.6% of the respondents having a mean score of greater than 4. An ANOVA demonstrated the believability means were not significantly different across the 16 simulated conditions,  $F(15, 471) = 783$ ,  $p = .70$ . Therefore, the believability of the simulated task was supported.

Taken together, the manipulation and believability results suggest the manipulation of the independent variables of target and valence were perceived as intended and were not confounded. Similarly, the believability of the simulated task was satisfactory and consistent across conditions.

### ***Influence of Reviews on Attributions of Service Quality and Controllability***

A multivariate analysis of variance (MANOVA) was conducted on the two dependent variables—service quality attribution and controllability. Results showed a significant main effect for valence manipulation,  $F(2, 453) = 6.65$ ,  $p < .01$ , partial  $\eta^2 = 0.29$ , and target manipulation,  $F(2, 453) = 17.78$ ,  $p < .001$ , partial  $\eta^2 = 0.73$ , with no main effect evident for frame or ratings. Interaction effects also emerged for frame x target,  $F(2, 453) = 5.05$ ,  $p < .05$ , partial  $\eta^2 = .022$ , and frame x target x ratings,  $F(2, 543) = 5.20$ ,  $p < .05$ , partial  $\eta^2 = .022$ .

#### ***Service Quality Attribution***

At the univariate level, results showed a significant main effect for valence on the dependent variable of service quality attribution (H3a),  $F(1,454) = 11.83, p < .01$ , partial  $\eta^2 = 0.25$ ). Attributions of service quality were higher in the positive valence ( $M = 3.62, SD = 1.19$ ) than in negative valence ( $M = 3.26, SD = 1.27$ ) condition. When the reviews are predominantly positive (positive valence), consumers are more likely to perceive the hotel's ability to deliver quality service more positively.

A significant main effect for target on the dependent variable of service quality attribution was also present (H1a),  $F(1,454) = 23.33, p < .001$ , partial  $\eta^2 = .049$ . Service quality attributions were higher when the reviews were about core ( $M = 3.67, SD = 1.16$ ) rather than service features ( $M = 3.18, SD = 1.29$ ). There is no main effect for ratings or frame (H2a) on service quality attribution.

A significant two-way interaction emerged for frame x target,  $F(1,454) = 10,07, p < .05$  partial  $\eta^2 = .022$ , for service quality attribution. A simple effects tests,  $F(1,454) = 32.3, p < .001$ , showed that evaluations for core features were significantly higher within the negatively framed condition than those for service features (see Table 2). No significant difference occurred within the positively framed condition,  $F(1,454) = 1.36, p = .24$ . Follow-up tests evaluated pair-wise differences among means. A Bonferoni post hoc procedure revealed a significant difference between the means for service features in both the negative and positive frames ( $p < .01$ ) but no significant difference in the means for core features.

*Insert Table 2 about here*

Most relevant was a significant three-way interaction between frame x target x rating,  $F(1,454) = 7.13, p < .01$  partial  $\eta^2 = .015$  on service quality attribution. To probe this three-way interaction, we conducted simple effects tests, with the sample being split into two groups—ratings included and ratings excluded. When ratings

were excluded, a simple effects test,  $F(1,229) = 24.7, p < .001$ , showed that within the negative frame, evaluations for core features were higher than those for service features (see Table 3). No significant difference occurred within the positively framed condition,  $F(1,299) = .76, p = .38$ . See Figure 1.

*Insert Table 3 about here*

*Insert Figure 1 about here*

When the ratings were included, a simple effects test,  $F(1,231) = 9.7, p < .05$ , showed that within a negative frame evaluations for core features were higher than for service features (see Table 3). For the positively framed condition, a simple effects test,  $F(1,231) = 4.3, p < .05$ , again showed evaluations for core features were higher than those for service features. See Figure 2.

*Insert Figure 2 about here*

Follow-up tests evaluated pair-wise differences among means. A Bonferoni post hoc procedure revealed a significant difference between the means for core and service features in the negative frame when the ratings were excluded ( $p < .001$ ). When ratings were included, a significant difference was present between the means for core and service features for both the negative ( $p < .01$ ) and positive frames ( $p < .05$ ). See Table 3.

### *Controllability*

At the univariate level, no main effects were found. However, a significant two-way interaction was present between frame x target,  $F(1,454) = 4.60, p < .05$ , partial  $\eta^2 = .010$ . As illustrated in Figure 3, a cross-over or complete interaction effect is evident (Keppel, 1991) demonstrating that the effects of frame and target depend



completely upon each other for assessments of controllability. Such an interaction suggests that when commentary is about service, less control is attributed to the hotel when framed positively but more control is attributed to the hotel when framed negatively; the reverse is true when commentary is about core aspects of the service.

*Insert Figure 3 about here*

Follow-up tests evaluated pair-wise differences among means. A Bonferoni post hoc procedure revealed a significant difference ( $p < .10$ ) between the means for service features in both the negative and positive frame, but no significant difference between the means for core features in either negative or positive frames. See Table 4. In addition, the hypotheses and the results of testing are summarized in Table 5.

*Insert Table 4 about here*

*Insert Table 5 about here*

## **DISCUSSION**

As a result of the increasing popularity of the Internet, online travel reviews have become a major source of information, which allows tourists to make more effective pre-purchase evaluations of a hotel firm in the holiday destination. This significant trend has emphasized the need for greater knowledge of the influences that online reviews have on consumer perceptions of hotel firms. Previous research has examined the effect of online reviews on consumer outcomes such as consumers' consideration of hotel (Vermeulen & Seegers, 2009) as well as their trust and intention to book the hotel (Sparks & Browning, 2011). There is limited research exist to investigate the effect of online reviews from a consumer attributional perspective, a critical process that determines consumer attitudes and behaviors (Sen & Lerman, 2007; Weber & Sparks, 2010). Our study extends previous research by testing the

influence of online reviews on customers' attribution of service quality and controllability for service delivery.

In the present study, attributions of service quality were higher when the reviews were predominantly positive, a finding that emphasizes the persuasive role played by positive consumer feedback on the perceptions of future customers (Donovan & Jalleh, 1999). A similar effect was found for target of complaint, where service quality attributions were higher when the reviews focused on core features rather than staff service features. Such a finding highlights the dominant role of the core elements of a service offering in a customer's service quality attributions.

A two-way interaction was evident for frame and target indicating that when initial reviews are positive there is no difference in terms of service quality attribution irrespective of target (core or service). However, when the initial reviews are negative the effect on service quality attribution for the target of service results in a lower mean than core. This finding suggests that a priming effect occurs for negatively framed reviews, which affects service evaluations more than core. However, the picture is more complex as shown by the three-way interaction for frame, target, and ratings. When customers have access to ratings, their service quality attributions are higher for core service features than for staff service features in both the positively and negatively framed conditions, which is consistent with the significant main effect for target, suggesting that reviews relating the core service offering exerts a stronger influence than those relating to service elements. In addition, consistent with the main effect for framing, attributions of service quality are higher for both core and service features when the most recent reviews are positive. However, once ratings are removed this effect is only evident when the set of reviews is negatively framed. This result shows that while ratings may be a point of reference when reviews are framed

positively, this is not the case when they are framed negatively. Recent negative reviews will affect a customer's attribution of service quality whether ratings are present or not, showing that recent negative reviews will override the impact of the other variables, such as ratings, as a source of information for customers. In the absence of direct first-hand experience, framing has an especially strong effect on consumers' evaluation (Levin & Gaeth, 1988). The negative frame in particular may alter an individual's reference point (Donovan & Jalleh, 1999). While negative reviews seem to have more impact than positive reviews (Lee et al., 2008), the presence of negative reviews offsets the herding effect (conforming to the opinion of others) (Huang & Chen, 2006).

In terms of attributions of controllability for service delivery, a significant finding of this study is the cross-over interaction occurring between framing and target of complaint, suggesting that the effects of the two factors depend upon each other for consumer attributions of controllability in the service delivery. This finding contributes to the extant literature by demonstrating that the effect for framing on consumer controllability attribution changes depending on the online review target, or vice versa. In addition, when the reviews are targeted on services or employees, consumers are more likely to believe that the hotel should be able to control the service failure when the reviews are framed negatively than when they are framed positively. Thus, recent reviews influence customers' attributions of controllability in the service delivery, with recent negative reviews having an unfavorable influence on consumers' perceptions. However, consumers were less likely to attribute controllability for core service failure when the set of reviews is framed negatively. Overall, these findings demonstrate that framing has a strong moderating effect on

consumers' perceptions and that customers tend to hold the firm more accountable for service problems than core problems in a negative frame condition.

### ***Practical Implications***

These findings emphasize the important role played by recent negative reviews (negative frame) on customers' attribution of service quality and controllability for service failure relating to staff service, and highlight the need for service managers to act promptly in addressing customer service problems (Snellman & Vihtkari, 2003). An important finding from this research is that hotel firms are urged to take timely action to rectify service deficiencies or failures in order to induce a more favorable assessment of a firm's level of staff service. By minimizing service failures and addressing service problems in a timely manner, hotel firms can create the possibility that consumers will post more positive reviews on the Internet, as well as reduce the number of negative reviews provided by dissatisfied customers. In fact, changing the balance of reviews to be predominantly more positive overall (positive valence) is likely to have a positive impact on customers' assessment of the quality of service provided. Notably, a sufficiently large number of positive comments will offset negative comments (Huang & Chen, 2006). In a time when managers are challenged by online review content and often complaining about the negative impact of forums such as TripAdvisor (Xiang & Gretzel, 2010), our finding suggests brand recovery is possible by improving service and generating more positive posts. Although this may appear obvious, there is plenty of evidence on web based forums that such advice is not always heeded. From their interviews with corporate executives, Martin and Bennet (2008) report that most organizations tend to ignore the negative on line reviews or 'online attacks'. Companies who take a more proactive

approach creating a culture of caring for the customer and employee and also for responding promptly and directly to the source of the review tend to experience fewer 'online attacks'.

Another message from the research findings generated as a result of this study is that while service features are important, a much more significant impact on customers' attributions of service quality comes from improving the core service provided by the hotel. This is because the core component of a service represents the key reason that motivates a consumer to engage in a service purchase transaction. While it is still important to invest in brand-building through advertising and marketing, it is as equally important to invest in identifying, designing, and maintaining quality core service elements in hotels due to their dominant role in customer evaluations of hotel service quality, as demonstrated in the present study. By offering a superior core service, firms can protect themselves from impact of web based criticism on the brand and reputation of the organization. While core service shows a stronger impact on service quality attribution, such a result should not be interpreted to negate the importance of the service elements of a hotel experience, as positive reviews, irrespective of target, do affect consumer perceptions. High-performing service organizations recruit and select customer service staff who exhibit specific attitudes that fit with a strong customer focus and who have an innate desire to provide customer service of a high quality. These firms also provide ongoing and relevant training in customer service and supply adequate resources and management support to enable customer service staff to carry out their jobs to the best of their ability (Browning et al., 2009). Rishi and Guar (2012) point out that even though the travel and tourism industry has recognized the importance of training and development of their staff, customers still report rude and unhelpful service from

employees and as such it is important that this is an ongoing strategy. Monitoring review sites, rectifying any reported deficiencies and encouraging future guest comments can potentially be brand enhancing.

Online review sites can provide firms with a richly informative source of consumer feedback that will allow them to pinpoint the key areas needing staff training and corrective actions. Online reviews represent a potentially valuable tool for firms to monitor customer attitudes in real time and to make corresponding changes in how they deliver their service (Dellarocas, Zhang, & Awad, 2007). Firms can also actively engage in these sites to initiate conversations with consumers to directly address the service quality issues (Martin & Bennett, 2008). As Sparks and Browning (2010) suggest, property owners have the chance to respond to reviews on TripAdvisor. Developing a damage control strategy (van Noort & Willemsen, 2011) in respect of negative eWoM is something that hotels need to consider.

### ***Limitations and Future Research***

The current research contributes to an emerging field of study regarding the impact of online reviews on consumer behavior. Specifically, this investigation increases the understanding of the influence of online reviews on consumer perceptions of service quality and how this influence can inform the corrective action taken by service firms.

The current study has some limitations. Although every effort was made to present a realistic website, a simulated website is limited in how much information can be activated. Further, while the experimental approach is a robust research design, it does restrict the number of variables that can be examined at one time, and several other variables might also influence the dependent variables studied here. For

example, future research could examine whether hotels with a reputation for good service would be assessed differently from those with a bad or mixed reputation.

Also of interest is whether the credibility of the complaint would have any impact on how the consumer might respond to the review, and whether characteristics of the complainant, such as age, gender, and nationality, would affect credibility of the review or reviewer. A particularly intriguing service recovery question is whether posting the response of a manager or frontline employee responsible for the service failure would have any effect on customer perceptions. Lastly, further research could seek to establish whether certain aspects of core or staff service features may have more impact than others on a customer's attribution of service quality.

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## Appendix A

### Service quality attribution

---

The hotel seems to have employee(s) that are highly competent

The hotel seems to have employee(s) who are caring

It would seem that service problems are a rare event at this hotel

I believe that quality service would be a common occurrence at this hotel

This hotel seems to be well managed

Quality control standards at this hotel seem to be high

Staff appear well trained at this hotel

---

1 = strongly disagree through to 7 = strongly agree.

Cronbach's alpha = .94

### Controllability

---

The cause of the problems outlined in some reviews could not have been predicted by this hotel

Any problems described in the reviews were controllable by this hotel (R)

Nobody in this hotel could have stopped the problems, described in these reviews, from happening

Little could be done by this hotel to stop the problems described in these reviews

---

1 = strongly disagree through to 7 = strongly agree.

Cronbach's alpha = .79

### Believability items

---

I think the hotel review site was realistic

I felt I could imagine myself using a website like this to search for hotels

For the purpose of this survey I was able to imagine using this website to evaluate this hotel

---

1 = strongly disagree through to 7 = strongly agree.

Cronbach's alpha = .79

TABLE 1. Manipulation Checks

Check type	IV	Mean	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>Partial η<sup>2</sup></i>
Dependent variable: <b>Target core</b>							
Confounding	Valence			1,488	3.26	0.07	0.007
	Positive	4.37	1.56				
	Negative	4.23	1.70				
Manipulation	Target			1,488	362.07	<0.001	0.43
	Core	5.31	1.20				
	Service	3.19	1.28				
Check type	IV	Mean	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>Partial η<sup>2</sup></i>
Dependent variable: <b>Valence</b>							
Confounding	Target			1,485	1.48	0.23	0.003
	Core	3.54	1.68				
	Service	3.73	1.68				
Manipulation	Valence			1,485	43.46	<0.001	0.08
	Positive	4.11	1.65				
	Negative	3.15	1.57				



TABLE 2. Summary of Pair-wise Comparisons for Frame x Target Interaction

Dependent variable	By target	By frame	Mean	<i>SD</i>
Service quality attribution	Service	Negative	2.91	1.21
		Positive	3.43	1.31
	Core	Negative	3.75	1.15
		Positive	3.58	1.18

TABLE 3. Summary of Pair-wise Comparisons for Frame x Target x Ratings  
Interaction with Service Quality Attribution

Dependent variable	Ratings excluded		Mean	<i>SD</i>	Ratings included		Mean	<i>SD</i>
Service quality attribution	Frame	Target			Frame	Target		
	Negative	Core	3.87	1.21	Negative	Core	3.65	1.10
		Service	2.75	1.24		Service	3.06	1.17
	Positive	Core	3.27	0.98	Positive	Core	3.92	1.28
Service		3.45	1.35	Service		3.40	1.27	

TABLE 4. Summary of Pair-wise Comparisons for Frame x Target x Ratings  
Interaction with Controllability

Dependent variable	By target	By frame	Mean	<i>SD</i>
Controllability	Service	Negative	2.70	1.13
		Positive	2.95	1.11
	Core	Negative	2.91	1.07
		Positive	2.73	1.00

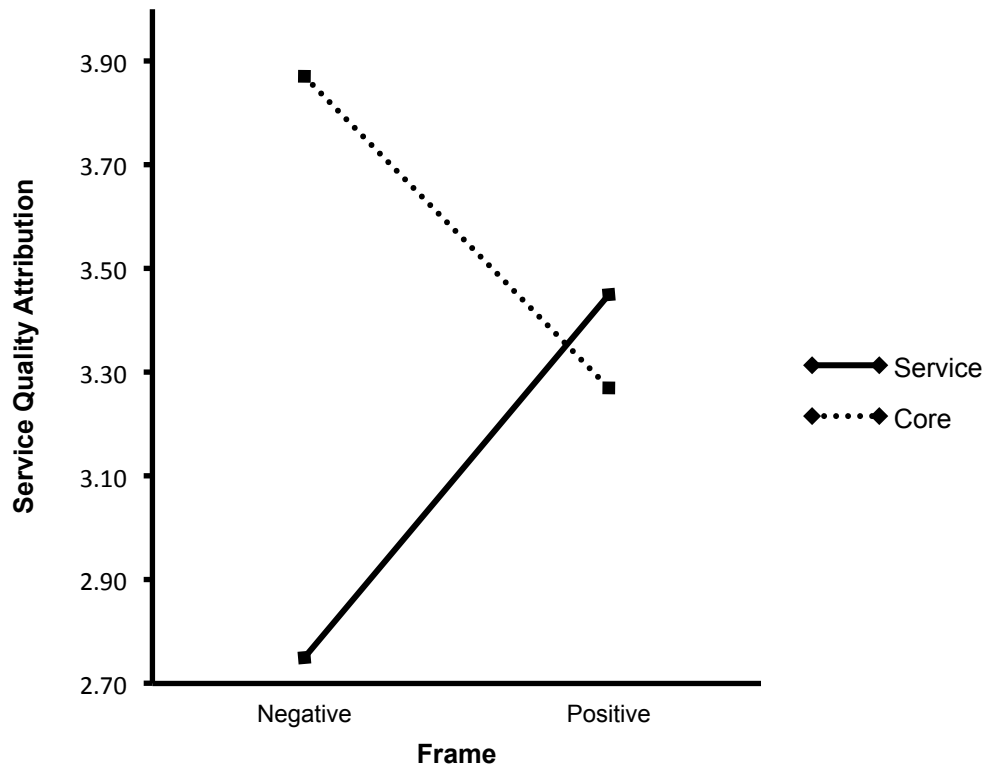


FIGURE 1. Frame × Target × Ratings (Excluded) Interaction Effect for Service Quality Attribution

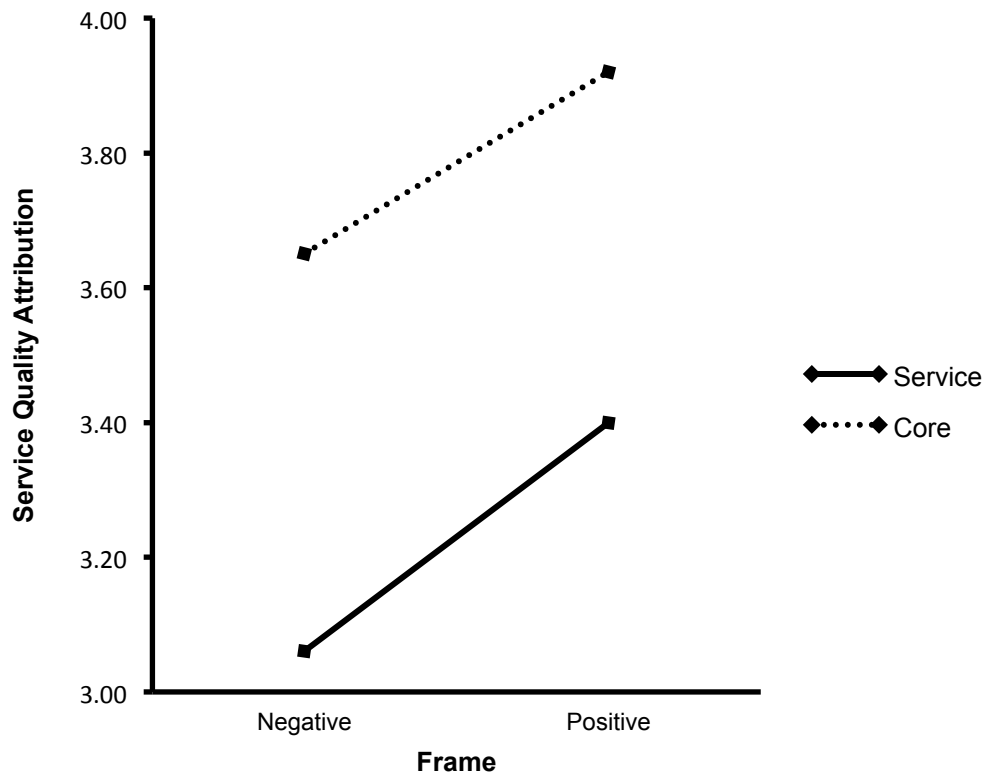


FIGURE 2. Frame  $\times$  Target  $\times$  Ratings (included) Interaction Effect with Service Quality Attribution

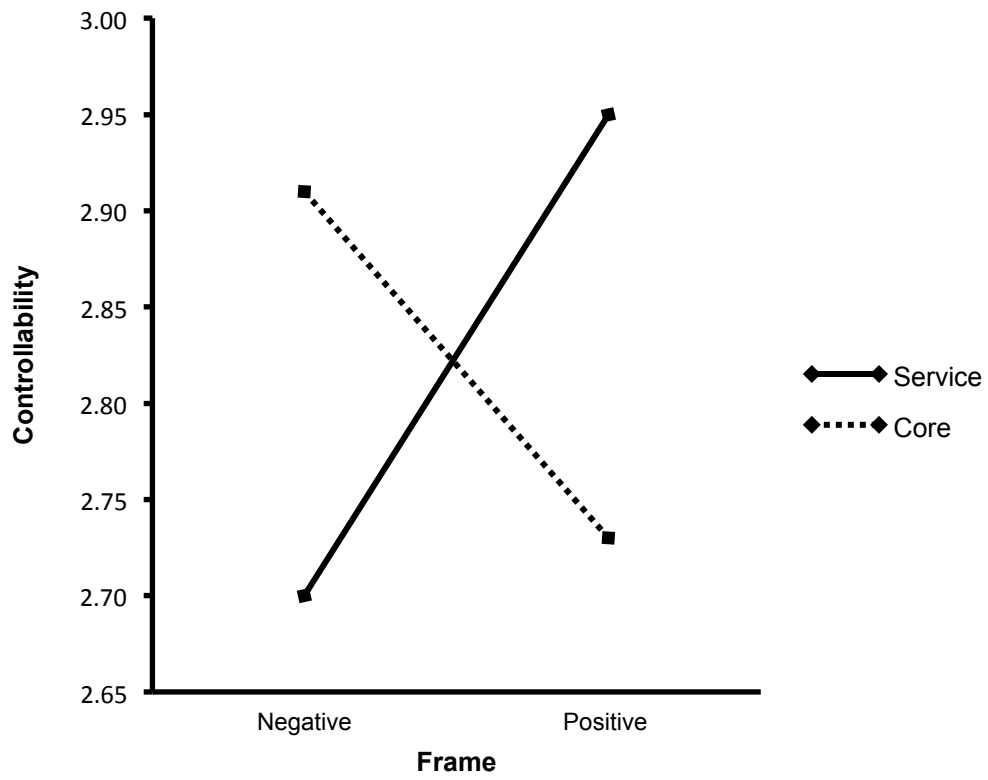


FIGURE 3. Frame  $\times$  Target Interaction with Controllability

TABLE 5. Summary of Hypothesis Testing Results

Hypothesis	Result
Hypothesis 1a. Customers are more likely to make positive service quality attributions when the hotel reviews are predominantly about core service rather than staff service.	Supported
Hypothesis 1b. Customers are less likely to believe any problems are controllable by the hotel when the hotel reviews are predominantly about core service rather than staff service.	Main effect not supported but interaction effect with frame
Hypothesis 2a. When the series of hotel reviews are framed with negative reviews, customers are less likely to make positive service quality attributions than when the reviews are framed with positive reviews.	Main effect not supported but interaction effect with target
Hypothesis 2b. When the series of hotel reviews are framed with negative reviews, customers are more likely to believe any problems are controllable by the hotel than when the reviews are framed with positive reviews.	Main effect not supported but interaction effect with target
Hypothesis 3a. Customers are more likely to make positive service quality attributions when the hotel reviews are predominantly positive than when the reviews are predominantly negative.	Supported
Hypothesis 3b. Customers are less likely to believe any problems are controllable by the hotel when the hotel reviews are predominantly positive than when the reviews are predominantly negative.	Not supported
Hypothesis 4a. Ratings will moderate the influence of framing, valence, and target of reviews (service or core) on service quality attribution.	Supported for ratings x frame x target interaction
Hypothesis 4b. Ratings will moderate the influence of framing, valence, and target of reviews (service or core) on controllability attribution.	Not supported