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Simultaneous effects of multiple cues in restaurant reviews

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Abstract

Purpose – The purpose of this paper is to evaluate how consumers simultaneously process multiple cues for different dining occasions when making a restaurant decision.

Design/methodology/approach – This paper investigates the influence of priming (review prototype), effort (distance) and involvement (occasion) on restaurant evaluations, willingness to drive and willingness to pay for a restaurant meal. A 2 (prototype: negative, positive) × 2 (distance: close, far) × 2 (occasion: casual, special) between-subjects factorial design was used.

Findings – The paper finds that each variable influences a different outcome, whereby people rely on a review prototype for restaurant evaluation and choice, a distance cue for willingness to drive and a dining occasion for willingness to pay.

Practical implications – This paper suggests that restaurant marketers can highlight exemplary service through online reviews, increase profitability by promoting special occasions and geographically expand their market by attracting people to drive for a special dinner.

Originality/value – This paper evaluates the simultaneous interactive effects of multiple cues in service settings. It demonstrates that situational cues moderate the effect of primary cues in online reviews.

Keywords Involvement, Customer reviews, e-WOM, Marketing decision-making, Service expectations

Paper type Research paper

1. Introduction

Service quality is one of the most commonly discussed factors in the services management literature (Cetin and Walls, 2016; Stauss and Mang, 1999). Customers' perceptions of service quality before the service experience determine satisfaction with the primary service after it is provided (Wakefield and Blodgett, 1994) and consequently influence loyalty (Cai and Chi, 2018; Ittamalla and Srinivas Kumar, 2018; Tanford, 2016). In the modern merchant setting, customer reviews create a vicious circle between pre- and post-service attitudes. Online reviews based on prior service experience render service expectations for future experiences (Lee and Ro, 2016). Customers feel satisfaction if the service quality exceeds expectations and dissatisfaction if it falls short (Stauss and Mang, 1999). Consumer satisfaction may not be reflected in overt behaviors such as tipping (Lynn, 2001). Consumers rather express their post-service attitudes by sharing opinions on online review sites.

Online reviews are one form of online customer engagement, which is increasingly important in the co-creation or co-destruction of value (Zhang *et al.*, 2018). When customers have a high level of social currency built through online customer engagement, their visit intentions increase even in the absence of prior experience (Kesgin and Murthy, 2019). As a result, consumers use online reviews as a barometer of service quality.

Market research suggests that making purchase decisions based on online reviews are prevalent across key markets in the USA and Europe. In a recent survey, approximately 94 per cent of US customers and 87 per cent of UK customers responded that online reviews influence their dining decisions (TripAdvisor, 2018). More than 94 per cent of customers believe that online reviews reflect the reviewer's actual dining experience, indicating the information on the review site is perceived as accurate and trustworthy.

When consumers make purchasing decisions, they consider multiple cues simultaneously. These consist of central cues that are directly related to the product and peripheral cues that are not (Petty and Cacioppo, 1986). In the setting of online purchasing, online reviews serve as primary cues, as they provide a direct message about the service product quality.

Many online merchants place a "most helpful" review on the first screen of a product display. Yelp®, which is one of the largest restaurant review sites, recommends customer reviews for the restaurant based on quality, reliability and user activity. A "most helpful" review provides a direct message about the restaurant. Customers can read a single recommended review on the first screen of restaurant reviews before they read the full set of reviews. The most helpful review serves as a prime that influences the interpretation of the remaining reviews. The valence of the most helpful review (positive–negative) stimulates direct

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affective priming that influences judgments about related products (Janiszewski and Wyer, 2014).

When customers make a restaurant selection, distance is one of the critical factors to consider. People invest time and money when they drive or walk to the restaurant. As distance requires effort (Shah and Oppenheimer, 2008), customers need to determine how far they are willing to go after considering several factors. Consumer retail research suggests that customers are encouraged to go farther to seek a better deal when the price of the product is relatively expensive. On the contrary, when the price of the product is not expensive, customers stop searching and rely on salient cues, such as discount information (Darke *et al.*, 1995). The price of a product serves as involvement, which determines the extent to which customers rely on central versus peripheral cues (Chang and Wu, 2012; Petty *et al.*, 1981). In a restaurant choice, the importance of the dining occasion is associated with the level of involvement. The dining occasion can be defined as situational involvement that refers to the emotional feeling associated with the immediate situation (Richins *et al.*, 1992). Occasion serves the same function as price, in that it signifies involvement and influences the weight assigned to multiple simultaneous cues.

This study investigates how consumers process a direct affective cue (most helpful review valence) and a situational cue (distance) simultaneously when evaluating and making a dining choice. This research further examines how the effects of these variables on judgments are moderated by involvement (dining occasion). This study provides new insights into research on online reviews in service settings. Most research on the influence of hospitality reviews focuses on the context of lodging/travel choices. The role of service expectations created by online reviews is magnified in the restaurant setting because the inseparability of the service encounter and the customer experience is paramount (Walter *et al.*, 2010; Zeithaml *et al.*, 1985). The research advances theories of decision-making in an area of growing significance for service industries and provides insight into effective marketing strategies taking into account multiple cues.

2. Literature review

2.1 The influence of customer reviews

In the service industry, consumers are motivated to research service products before purchase because they cannot experience them in advance (Cetin and Walls, 2016). Advances in internet development allow consumers to assess a considerable amount of information about the service product with a minimum of effort (Lu and Gursoy, 2015). However, consumers do not process all available information because of limited cognitive capacity (Cowan, 2010). Instead, they rely on selective information such as customer reviews to reduce cognitive effort (Gursoy, 2019; Kardes *et al.*, 2004). Some argue that online customer reviews and ratings may not provide objective quality information, as they reflect both objective and subjective quality (de Langhe, *et al.*, 2016). This makes customer reviews more powerful in the service industry, which often involves hedonic products. Customers perceive that reviews containing subjective evaluations (e.g. affective reaction) are more helpful when the product is for hedonic consumption (Moore, 2015). Moreover, consumers seeking to

reduce cognitive effort are more likely to rely on qualitative/subjective review content rather than quantitative/objective ratings (Gursoy, 2019). Ample evidence indicates that customer reviews influence service quality perceptions, purchase intentions and price perceptions in service industries (Kwok *et al.*, 2017; Ögüt and Onur Taş, 2012; Wang, 2011). Furthermore, customer reviews function to reduce risk associated with hedonic purchases (He and Bond, 2015).

Although research on customer reviews is plentiful, research on restaurant online reviews often centers around the content of reviews themselves rather than their influence on consumer purchase decisions. Such research identifies the factors consumers include in their reviews (Pantelidis, 2010; Zhu *et al.*, 2019) and the way in which consumers evaluate reviews written by others (Chen and Lurie, 2013; Hlee *et al.*, 2018; Ong, 2012). Previous research found that consumers' decisions to use specific reviews are influenced by the types of review content (Ong, 2012; Pantelidis, 2010), content richness and source credibility (Hlee *et al.*, 2018) and temporal contiguity cues (Chen and Lurie, 2013). Restaurant consumers who receive a discount give higher ratings, whereas reviews from regular consumers have more diverse content (Zhu *et al.*, 2019). Data mining of reviews and text analytics have been used to analyze the competitive environment with the goal of improving restaurant services (Gao *et al.*, 2018).

While content analysis focuses on the factors that influence a consumer's review utilization, a few studies demonstrate the psychological effect of customer reviews on attitudes and purchasing decisions for restaurants (Lee and Cranage, 2014; Zhang and Hanks, 2018). Restaurants exemplify hedonic services (Ng *et al.*, 2007), but the majority of research on hospitality reviews focuses on hotels (Kwok *et al.*, 2017). In a study done before the existence of online reviews, reviews of critics influenced diners' restaurant selection, although recommendations of friends had greater influence than critics (Barrows *et al.*, 1989). Previous research on online customer reviews reported that negative online restaurant reviews lead to changes in potential customers' attitudes and attributions (Lee and Cranage, 2014). The influence of restaurant reviews can be moderated by individual and cultural differences. Consumers with high cosmopolitan status are more likely to select the restaurant when the reviews are posted by dissimilar reviewers (Zhang and Hanks, 2018). Conversely, Chinese customers are more likely to follow restaurant recommendations from reviews posted by an in-group versus an out-group, whereas American customers do not exhibit this tendency (Fan *et al.*, 2018).

In summary, research on restaurant reviews provides insight into their content and the way in which characteristics of the reviews, the reviewer and the individual affect judgments. Less is known about the situational factors that moderate the influence of restaurant reviews. The current state of knowledge calls for increased attention to the information processing underlying the effects of reviews on purchase decisions (Gursoy, 2019). To that end, this research posits three psychological principles that operate in response to cues when processing restaurant reviews.

2.2 Theoretical background

2.2.1 Priming

Priming occurs when the content of an initial piece of information makes subsequent information that is consistent with the prime more accessible. This, in turn, makes the information more likely to influence consumer evaluations and choices (Janiszewski and Wyer, 2014). One form of priming is affective priming, in which affective content such as valence (positive, negative) affects evaluations of related products and services (Janiszewski and Wyer, 2014). Asymmetry effects suggest that negative information is more likely to evoke an emotional response (Taylor, 1991); therefore, stronger priming effects are expected for negative versus positive primes. When evaluating a travel destination, participants had less favorable evaluations when they ranked identical destination attributes from worst to best versus best to worst (Shen and Wyer, 2008). Affective priming is more likely to occur for hedonic/experiential services, such as restaurant dining, compared to instrumental services such as a computer class (Pham, 1998).

Research on customer reviews suggests that priming can occur as a function of review valence. Two studies define “framing” as presenting a set of identical reviews starting with two positive or two negative reviews (Browning *et al.*, 2013; Sparks and Browning, 2011). The framing manipulation more closely represents priming as defined in the literature, as framing typically takes the form of perspective (e.g. 90 per cent positive versus 10 per cent negative). Consumers had lower booking intentions and less trust for a hotel when primed with negative versus positive reviews (Sparks and Browning, 2011). Moreover, priming negative review valence produced lower evaluations of service quality attributes (e.g. staff service) but not core hotel attributes (e.g. hotel room condition) compared to positive priming (Browning *et al.*, 2013).

This research defines priming as a review prototype, which is “the most helpful review” that online review sites place on the first product screen. Some online merchants such as Amazon feature a “most helpful” positive and negative review on the first screen. Moreover, Yelp.com and TripAdvisor display an initial list of restaurants accompanied by a partial review that can be positive or negative, and the reader must click “more” to view the full set of reviews. The initial review provides a prime that could influence the evaluation of subsequent reviews or even whether the consumer decides to investigate that restaurant further. In previous research, hotel reviews were predominantly positive or negative and framing was defined as which reviews came first in the sequence (Browning *et al.*, 2013; Sparks and Browning, 2011). In this research, the prototype is separated from the full set of restaurant reviews, which are ambiguous in valence (half positive, half negative) and identical in all conditions. The valence of the prototype is expected to influence judgments because of priming effects:

- H1. Participants will be more likely to choose a restaurant with a positive prototype versus a negative prototype when the full set of reviews is identical.
- H2. Participants will evaluate a restaurant more favorably with a positive prototype versus a negative prototype when the full set of reviews is identical.

2.2.2 Distance/effort

Location is a key determinant of a restaurant’s success (Tzeng *et al.*, 2002). A location close to the workplace or home is one of the most important reasons for patronizing a specific restaurant (Moschis *et al.*, 2003). Moreover, a convenient location influences perceived service quality (Parasuraman *et al.*, 1985). However, psychological distance can lead to more favorable evaluations of a location or event that is farther away (Huang *et al.*, 2016). Psychological distance can be spatial (geographic) or temporal (time-based). A content analysis of online restaurant reviews found that the delay between the restaurant experience and the review date (temporal distance) and the distance between the reviewer’s home and the restaurant (spatial distance) were positively related to positive review valence (Huang *et al.*, 2016). Conversely, consumers consider reviews on Yelp.com to be more helpful when the temporal distance is short (Chen and Lurie, 2013). Research in a lodging context indicates that consumers will travel a farther distance to avoid a hotel with negative reviews than they will to seek a hotel with positive reviews (Tanford and Kim, 2019). Clearly, the relationship between distance and review valence can be a critical factor in consumers’ choice of a service provider.

Distance requires effort, which can be considered an indicator of quality (Kruger *et al.*, 2004). The effort justification principle holds that people have more favorable evaluations of alternatives for which they exert greater effort (Petty *et al.*, 1976). However, when faced with multiple cues, people seek to reduce effort by examining fewer cues (Shah and Oppenheimer, 2008). This phenomenon occurs in online shopping environments, in which consumers limit the number of cues by narrowing the alternatives to make better decisions with less effort (Häubl and Trifts, 2000). In this research, there are two simultaneous cues: distance, which requires effort, and the review prototype, which primes a positive or negative expectation. The availability principle suggests that people will focus on whichever cue is more salient (Tversky and Kahneman, 1974). When the distance to a restaurant is far, people will perceive the distance cue is salient. The effort of driving a far distance creates uncertainty about the judgment, and people are expected to rely on the valence of the prototype to determine if the experience is worth the effort. Applying the effort reduction principle, people examine fewer cues and the full set of reviews receives less weight than the prototype. On the contrary, when the restaurant is close to home, distance is no longer a salient cue. Therefore, people rely less heavily on the prototype and use the full set of reviews to inform their decisions:

- H3a. When distance is far, participants will be willing to drive farther for a restaurant with a positive versus a negative prototype.
- H3b. When distance is close, the effect of the prototype on willingness-to-drive will be reduced.

2.2.3 Involvement

Motivation to process information can be conceptualized as an individual’s involvement with an object, situation or action determined by the degree of perceived personal relevance

(Petty *et al.*, 1981). A high level of involvement directs the focus of cognitive processing, such as attention and comprehension (Celsi and Olson, 1988). Customers with a low level of involvement are affected by the number of reviews, while customers with a high level of involvement are affected by quantity and quality of the reviews (Park *et al.*, 2007). Shoppers were willing to walk farther to seek a discount for a more expensive product, as the larger purchase entails greater risk and higher involvement (Darke *et al.*, 1995).

Involvement is a key attribute in services that are co-created by the customer and the service provider, which characterizes the restaurant experience (Walter *et al.*, 2010). Moreover, involvement with restaurant brands leads to satisfaction and loyalty (Kim and Lee, 2017). Customer engagement extends to the online environment, where it can be negative and lead to value co-destruction or positive and lead to value co-creation (Zhang *et al.*, 2018). As such, involvement can influence responses to positive and negative online reviews.

The current research defines involvement as the occasion for dining at a restaurant. Previous research argues that the occasion of service consumption is a situational factor that influences consumer's pre-purchase evaluations (Ostrom and Iacobucci, 1995). Service consumption associated with high risk increases the level of involvement (Laurent and Kapferer, 1985), and this increased situational involvement affects consumers' purchasing behaviors (Clarke and Belk, 1978). Therefore, a casual dining occasion associated with low risk reflects low involvement, whereas a special dining occasion associated with higher risk reflects high involvement. Negative reviews tend to be more powerful than positive reviews and outweigh other cues in the online environment (Book *et al.*, 2016, 2018; Chen and Lurie, 2013; Park and Nicolau, 2015; Tanford and Kim, 2019). Following the same logic, an asymmetry effects is expected for involvement. Therefore, an interaction between occasion and prototype valence is expected. That is, occasion becomes the salient cue when the prototype is positive, but valence is the dominant cue when reviews are negative, leading to the following hypotheses:

H4a. When the prototype is positive, consumers will be willing to drive farther for a special versus a casual occasion.

H4b. When the prototype is negative, occasion will not influence willingness-to-drive.

Consumers seek to justify the purchase of hedonic goods and are willing to expend more time and money to do so (Okada, 2005). When the restaurant is far, the location information is salient, and the extra effort to visit the restaurant is justified when it is a special occasion. As consumers associate effort with quality (Kruger *et al.*, 2004), they will be willing to pay more for the restaurant at a far distance. The level of involvement associated with a special occasion justifies the extra effort and expense (Petty *et al.*, 1981). However, when the location is close, the location information is not salient, and the level of involvement should not differentially influence willingness-to-pay:

H5a. When distance is far, participants will be willing to pay more for a special versus a casual occasion.

H5b. When distance is close, occasion will not influence willingness-to-pay.

3. Method

3.1 Design

A 2 (prototype: negative, positive) × 2 (distance: 10 minutes, 60 minutes) × 2 (occasion: casual, special) between-subjects factorial design was used. The prototype was defined as a "Customer Top Review" shown on the first screen of the scenario, which was either negative or positive. Distance was defined as the distance to the restaurant from the participant's home, which was depicted as either 4 miles (10 minutes) or 36 miles (60 minutes) from home. Occasion was defined as "a special dinner with your friends to celebrate your birthday on Saturday night" (special) or "a casual dinner with your friends on Tuesday night" (casual).

3.2 Subjects

A total of 208 participants were recruited through Qualtrics, with 26 subjects randomly assigned to each of the 8 experimental conditions using the Qualtrics software capabilities. The sample size yields a statistical power of 0.948 to detect medium size or larger effects. To be eligible, respondents had to be at least 18 years old and they had to have read restaurant online reviews in the past 2 months. The sample was 80.7 per cent female and 19.3 per cent male, and 53 per cent of the sample was married. Age ranges were 18-29 (28.5 per cent), 30-39 (21.7 per cent), 40-49 (16.4 per cent), 50-59 (14.0 per cent) and 60 or over (19.3 per cent). The majority of the sample (52.9 per cent) had a two-year or four-year college degree. The median annual income was approximately \$60,000. The majority of the sample was Caucasian (76.4 per cent) followed by African American (11.1 per cent), Hispanic (6.3 per cent) and Asian (4.8 per cent).

3.3 Stimuli and pretesting

The stimuli consisted of a simulated online restaurant review website that resembles existing sites. Participants were instructed to assume they were planning a casual weeknight dinner out or a special weekend dinner for a birthday celebration. The first screen contained a picture of the restaurant and the sample review (prototype) along with the map indicating the current location (home) and the restaurant location. Distance was labeled next to the picture as 4 miles (10 minute drive) or 36 miles (60 minute drive) from home. The distance-time relationships are equivalent for a suburban setting using Google maps. The second screen contained the restaurant photo and a description of the restaurant. The distance manipulation was repeated next to the photo. Underneath the description, there was a set of six reviews, half of which were positive and half of which were negative. The reviews were identical for all conditions and contained the prototype, which was in the third (positive) or fourth (negative) position. This was done to ensure that the full set of reviews was

identical in all conditions. An overview of the experimental design is shown in Table I.

Pre-testing was conducted to identify the effective stimuli. Approximately 35 subjects rated 16 restaurants that had different names, photos and descriptions on seven-point disagree-agree Likert scales. The selected restaurant (Jay's Table) had a 5.32 average for the two evaluations: "I am likely to choose this restaurant for my dinner" and "This restaurant is appealing to me". For restaurant reviews, 35 subjects were randomly assigned to one of two sets of 15 restaurant reviews, which they rated on favorability (1 = extremely unfavorable, 7 = extremely favorable). Three positive reviews (P1: 6.40; P2: 6.31; P3: 6.47) and three negative reviews (N1: 2.38; N2: 2.38; N3: 2.67) were selected for the stimuli. Reviews P2 and N2 served as the prototypes.

3.4 Measures

Participants rated the likelihood to choose the restaurant on a seven-point numerical scale (extremely unlikely-extremely likely). They provided three restaurant evaluations on seven-point Likert scales from strongly disagree to strongly agree: "This restaurant is appealing to me", "After reading the reviews, I expect the food will be good" and "After reading the reviews, I expect the service will be good". Willingness-to-pay for each restaurant per person was rated on a sliding scale from \$0 to \$100. Willingness-to-drive to each restaurant was rated in minutes and miles with open-ended questions. The survey concluded with demographics and manipulation checks.

4. Results

4.1 Manipulation checks

Participants rated how far in minute-drive the restaurant was from home on a 14-point scale in 5-minute increments from 0 to more than 60. A one-way ANOVA shows a significant effect of distance ($F_{1, 207} = 6,487.02, p < 0.001, \eta^2 = 0.964$), with means of 3.30 and 13.00 on the distance scale for the 10- and 60-minute conditions. There is a large and significant effect on distance in miles rated in open-ended format ($F_{1, 207} = 411.56, p < 0.001, \eta^2 = 0.666$). Means for 10-minute (4 miles) and 60-minute (36 miles) conditions are 8.28 and 34.74 miles, respectively. The effect of occasion on the type of occasion, which is on a scale of 1 (casual) to 7 (special), is large and significant ($F_{1, 207} = 1,707.19, p < 0.001, \eta^2 = 0.892$), with means of 1.84 for casual and 6.41 for special occasion. Hence, the manipulations were highly effective.

4.2 Restaurant evaluations

A three-way prototype \times distance \times occasion MANOVA was conducted on the likelihood to choose and the three restaurant

evaluations. The correlations among the four dependent variables range between 0.622 and 0.777, indicating that the data are appropriate for MANOVA. Each group has an equal sample size (26); thus, it does not violate the homogeneity assumption for the MANOVA (Hair et al., 2010). Moreover, Levene's test of equality of error variances was not significant for any measure. Significant multivariate effects were found for prototype and there were no other main effects or interactions. The MANOVA tests of Pillai's Trace (0.206) and Wilks' Lambda (0.794) are significant ($F_{4, 197} = 12.75, p < 0.0001, \eta^2 = 0.206$). This indicates that the mean vectors of the two groups are different and that the effect is large in magnitude.

The significant multivariate effect justifies examining the univariate effects for each measure. The analysis reveals that there is a significant main effect of review prototype on all four ratings, and these effects are large in magnitude (Cohen, 1977). As shown in Table II, participants are more likely to choose the restaurant, consider the restaurant more appealing and have more favorable expectations of food and service when the prototype is positive versus negative. It is important to emphasize that everyone received the identical set of reviews; the only variation was which review served as the prototype. This finding supports H1 and H2.

4.3 Willingness-to-drive

A three-way ANOVA was conducted on willingness-to-drive in miles. There were no significant interactions, so H3 and H4 were not supported. There were significant main effects of prototype ($F_{1, 200} = 18.42, p < 0.001, \eta^2 = 0.084$) and distance ($F_{1, 200} = 12.59, p < 0.001, \eta^2 = 0.059$). Participants are willing to drive farther when the prototype review is positive (M = 16.56 miles) versus neutral (M = 10.01 miles) and are willing to go a farther distance when informed that the restaurant is far (M = 15.99 miles) versus close (M = 10.58 miles).

Significant effects of prototype ($F_{1, 200} = 18.15, p < 0.001, \eta^2 = 0.083$) and distance ($F_{1, 200} = 36.32, p < 0.001, \eta^2 = 0.154$) were again found for willingness-to-drive in minutes.

Table II Effect of prototype on restaurant evaluation

Rating	Prototype		F (1, 200)	Eta ²
	Negative n = 104	Positive n = 104		
Likelihood to select	2.84	3.93	32.23***	0.139
Appealing	3.24	4.22	33.86***	0.145
Food expectation	3.82	5.24	45.34***	0.185
Service expectation	3.21	4.43	33.85***	0.145

Note: ***p < 0.001

Table I Experimental design

Distance	Prototype			
	Negative (N ₂)		Positive (P ₂)	
	10 minutes	60 minutes	10 minutes	60 minutes
Occasion				
Casual	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃
Special	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃	P ₁ N ₁ P ₂ N ₂ P ₃ N ₃

However, the main effects are qualified by a significant prototype \times distance interaction ($F_{1, 200} = 4.19, p < 0.005, \eta^2 = 0.020$). The simple effect of prototype at each level of distance was analyzed to determine the source of the effect, which is shown in Figure 1. There is a significant effect of prototype at the 10-minute ($F_{1, 100} = 7.37, p = 0.008, \eta^2 = 0.069$) and 60-minute ($F_{1, 100} = 11.93, p = 0.001, \eta^2 = 0.107$) distances. In both cases, participants are willing to drive a farther distance when the prototype is positive versus negative. However, the effect of the prototype is stronger when the restaurant is 60 minutes versus 10 minutes from home. Therefore, people rely more heavily on the primary cue (prototype) when the restaurant is located farther away. This finding supports the predicted interaction in *H3a* and *H3b*. There was no interaction between occasion and valence, so *H4a* and *H4b* were not supported.

4.4 Willingness-to-pay

Participants indicated how much they were willing to pay for dinner per person in dollars. A three-way ANOVA for willingness-to-pay revealed a significant effect of occasion ($F_{1, 200} = 7.03, p = 0.009, \eta^2 = 0.034$). Participants are willing to pay more when the occasion is special ($M = \$20.24$) versus casual ($M = \15.68). There was a significant occasion \times distance interaction on willingness-to-pay ($F_{1, 200} = 11.11, p = 0.001, \eta^2 = 0.053$). To determine its source, the simple effect of occasion at each level of distance was analyzed. There is no effect of occasion at the 10-minute distance ($F < 1$), as shown in Figure 2. When the restaurant is 60 minutes away, participants are willing to pay more for a special ($M = \$24.29$) compared a casual ($M = \14.00) occasion ($F_{1, 102} = 15.04, p = 0.000, \eta^2 = 0.128$). Therefore, the interaction hypothesized in *H5a* and *H5b* is supported.

Figure 1 Effect of prototype by distance on willingness-to-drive

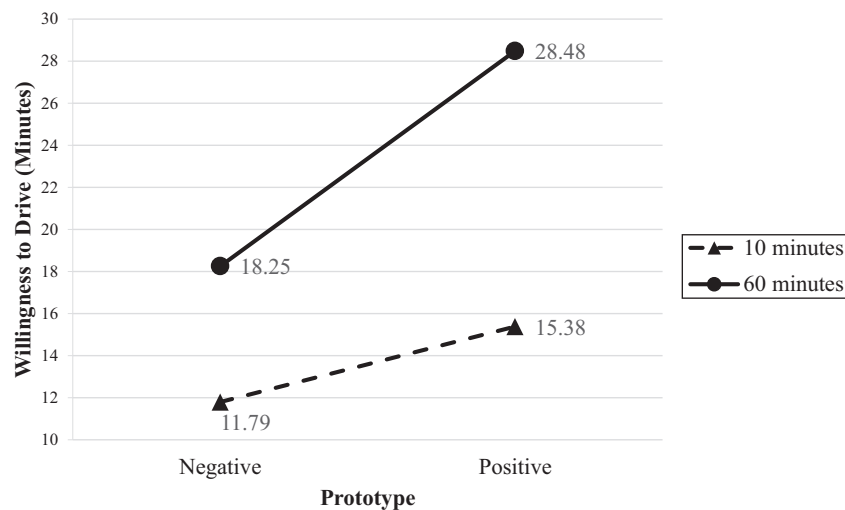
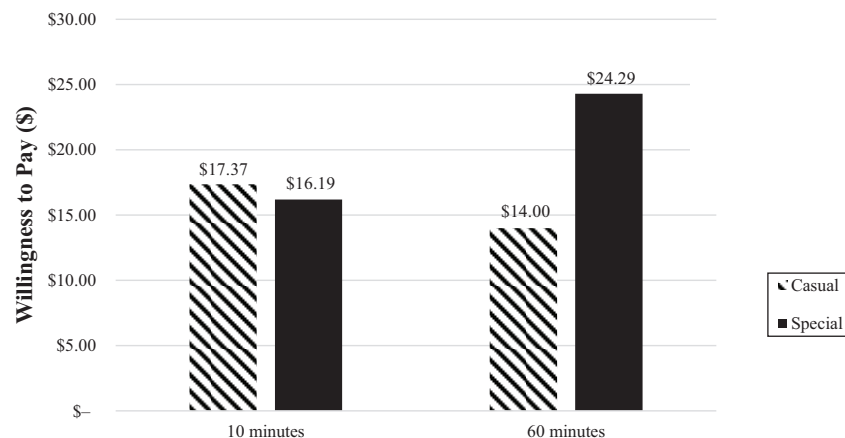


Figure 2 Effect of occasion by distance on willingness-to-pay



Note: The effect of occasion is significant for 60 minutes and not significant for 10 minutes

5. Discussion

The purchase decision process requires considering multiple cues simultaneously. This research demonstrates how consumers process primary cues and subsequent cues simultaneously when they make a purchase decision online. Specifically, the research examines the effects of priming (prototype valence), effort (distance) and involvement (occasion) on a dining out decision in the context of a restaurant online review site. Rather than focus on whether multiple cues influence a simple decision of “dine or not dine”, this study discovered that each cue influences different outcomes. It is an unexpected finding because each cue was initially expected to influence either all of the decision outcomes or none of them. Each outcome represents a different stage of the purchasing process (restaurant evaluation: pre-choice; likelihood to choose: choice; and willingness-to-drive and willingness-to-pay: post-choice). Consumers are differently motivated by the stages of the purchasing process, which may result in simultaneous cues influencing different outcomes (Shen *et al.*, 2014). Specifically, priming, defined as a positive or negative prototype, primarily influences restaurant evaluations and likelihood to choose. Effort, defined as distance, influences willingness-to-drive. Involvement, defined as a special or casual occasion, influences willingness-to-pay. However, these cues do not operate in isolation; rather, they are moderated by the presence of simultaneous cues. To that end, priming and involvement have stronger effects under high effort conditions.

The prototype influences the interpretation of subsequent information through priming effects (Janiszewski and Wyer, 2014). Consumers primarily seek information in the pre-choice stage and make the actual purchase in the choice stage. In the post-choice stage, they decide whether to maintain the relationship with the provider and make a repeat purchase (Frambach *et al.*, 2007). As previously discussed, people are motivated to seek a reward when they focus on the process of purchasing rather than evaluating the outcome (Shen *et al.*, 2014). People focus on the process of purchasing in pre-choice and choice stages and, therefore, are expected to seek a reward.

How do multiple cues influence judgments in an online setting? The findings demonstrate priming effects (Janiszewski and Wyer, 2014) in that a single positive or negative prototype influences evaluations of the full set of reviews that are identical in all conditions. Previous research demonstrates framing by the order and position of customer reviews (Browning *et al.*, 2013), such that earlier/more prominent information receives more weight. This research uses a “most helpful” review that is presented separately on the initial product screen. The prototype influences the interpretation of subsequent information through priming effects (Janiszewski and Wyer, 2014).

The findings show that the effect of the primary cue (prototype) is moderated by situational cues. One of these cues is distance, which equates to effort. In this study, people rely on prototype valence only when the restaurant is far from home. The distance that people are willing to drive is farther when the prototype is positive versus negative. However, people rely on prototype valence only when they need to drive a farther distance. This finding supports effort reduction, whereby

people do not fully integrate multiple attributes (i.e. all the reviews) but instead rely on a single salient cue (i.e. the prototype) (Shah and Oppenheimer, 2008). Such effort reduction is maximized when the situational cue is salient. Far distance is perceived as a salient situational cue, which induces people to rely on a primary cue subsequently, instead of reading the full set of reviews.

The other situational cue is involvement. In theory, involvement should be a powerful determinant of restaurant selection, as it is a key element of the restaurant experience (Kim and Lee, 2017; Walter *et al.*, 2010). The interesting finding in the current research is that involvement is not a powerful determinant of decisions under low effort conditions. Specifically, involvement increases willingness-to-pay for a special occasion, but only when the distance is far and not when it is close. Involvement did not moderate the effect of priming on any outcome. These findings add to the growing body of literature which indicates that reviews prevail over other external factors, including price (Book *et al.*, 2016, 2018). Our findings extend the pervasive influence of reviews to internal cues (involvement), which are outweighed by the review prototype when it comes to product evaluations and willingness-to-drive. However, once the choice is made, driving farther justifies paying a higher price for a special occasion. This may be explained by the effort justification principle (Petty *et al.*, 1976) in conjunction with the effort–quality relationship (Kruger *et al.*, 2004). Distance plays a role as an indicator of quality because it requires effort. When driving a farther distance for a special occasion, consumers seek a higher quality dining experience and expect to pay more of it.

How do multiple cues interact in cognitive processing? The results indicate that the salient cue activates the consequent use of other cues. The operation of the prototype was activated when the distance cue was salient, thereby increasing willingness-to-drive (*H3a*). Similarly, the reliance on involvement was enhanced when the distance was far, thereby increasing willingness-to-pay (*H5a*). In other words, when multiple cues are available, one salient cue enhances the reliance on another cue. In contrast, close distance is not salient and requires limited effort, which results in the reduced influence of prototype valence (*H3b*) and involvement (*H5b*).

The findings of the research can be expanded beyond the restaurant setting to other services sectors that require similar considerations. Restaurants exemplify the service setting, in that the experience is defined by the service encounter (Walter *et al.*, 2010) and co-created by the customer and the service provider (Grönroos and Voima, 2013). Similar conditions apply to other service businesses such as spas, beauty salons or healthcare. Consumers research the service quality of such service businesses utilizing the online customer reviews in the pre-choice stage. Once they make a choice of the service business, consumers need to exert effort to drive to there. Such effects can be different by how psychologically important the associated occasion is. For example, consumers will be willing to exert more effort and pay more to visit a beauty salon for a wedding versus a routine haircut. Therefore, as found in this research, the priming effect of the prototype may play a predominant role in consumers’ pre-choice and choice stage of the decision process. Subsequently, similar interactions among

distance and involvement can be expected once the choice is made.

5.1 Theoretical implications

The research enhances our understanding of the psychological processes underlying the influence of restaurant reviews in service settings. Previous research on restaurant reviews focuses on review content and characteristics directly related to the product or service. As noted by [Gursoy \(2019\)](#), multiple information sources within the online review environment can lead to information overload and the tendency to attend selectively to certain cues. The reviews themselves are primary information sources, and characteristics such as length, argument quality and source credibility pertain to the primary source. However, situational factors outside of the review environment have received less attention. In this research, direct affective priming of review valence influenced restaurant choice and expectations based on identical review content. This could be interpreted as primary information influencing primary judgments. However, distance and involvement moderated the effect of priming on willingness-to-drive and willingness-to-pay. This could be interpreted as situational factors influencing secondary judgments. That is, having selected a desirable restaurant, situational factors can determine how much effort people will make and how much they will pay.

The research introduces involvement as a situational moderator in the online review environment. Customer engagement can lead to co-creation or co-destruction of value depending on the valence of online behaviors ([Zhang et al., 2018](#)). The research introduces distance as effort and provides further verification of the asymmetry effect for positively and negatively valenced information ([Taylor, 1991](#)). The findings suggest that asymmetry effects extend to priming, as both are enhanced when negative stimuli evoke an emotional reaction ([Janiszewski and Wyer, 2014](#)).

This study considers the simultaneous effects of multiple cues, which is critical to understanding consumer behavior in service settings ([Sweeney et al., 2016](#)). Previous research investigates the use of specific cues in isolation or multiple content-related cues. Our findings indicate how peripheral cues interact with central cues when formulating decisions. The effort reduction principle suggests that people examine fewer cues to reduce cognitive effort ([Shah and Oppenheimer, 2008](#)). However, this study suggests that salient cues can be an ignition point of activating other cues in the decision process. Restaurant decisions require less time and effort than travel purchases but demand higher customer involvement to ensure a satisfying experience ([Kim et al., 2004](#); [Walter et al., 2010](#)). This highlights a need to investigate theoretical principles in a variety of decision contexts, as there may be fundamental differences in the decision process.

5.2 Practical implications

Given that the prototype outweighs the full set of reviews, service business managers need to go beyond monitoring online reviews. The most helpful review or a sample review is typically placed at the top or on a separate screen, and users must click or scroll to see more reviews. A favorable prototype can mitigate the impact of negative reviews. Marketers may pick the most

positive review and use it as an advertisement. The research shows that one negative prototype can reduce likelihood to select a restaurant or the amount people are willing to pay, although the overall ratings are identical. To minimize the impact of a negative prototype, service providers are encouraged to respond promptly with appropriate compensation, so that others can see how the service was recovered. A manager's genuine responses to negative feedback will decrease negative perceptions about the business while increasing the credence of online reviews ([Sparks et al., 2016](#)). A "canned" response without compensation may be perceived as not genuine, whereas providing tangible service recovery may enhance the service providers' reputation.

The growing popularity of social media can be leveraged to generate positive messages that mitigate the effects of negative review prototypes. Social media marketing is common in service industries; however, customer-generated content is perceived as more credible and persuasive than company-generated content ([Goh et al., 2013](#)). Positive expectations can be created through pieces of quick customer-generated information, such as Instagram posts or Twitter tweets. Service business operators can incentivize customers to make positive postings by offering a complimentary item or discount. For example, customers could be encouraged to post an Instagram or Snapchat photo of their service experience, as photos in social media messages are more effective than text only ([Kwok and Yu, 2013](#)). This "consumer-generated advertising" may be more influential in service provider choice than advertising delivered by the operator.

The research shows that people are willing to pay more for a special occasion. Service marketers may promote special event deals, such as birthday, wedding or anniversary packages, to attract consumers and increase willingness-to-pay. For example, a beauty salon could provide a wedding package with special pricing and amenities for an entire wedding party. The findings suggest that high involvement leads to a willingness-to-drive farther. Service providers can expand their geographic target market because people are likely to pay more when they travel a farther distance to consume the service. To motivate customers to drive farther for a special occasion, marketers may provide special features such as a VIP parking area. They could offer a rewards program where gas gift cards are awarded to frequent visitors. Better yet, they could provide reward points based on miles driven using customers' zip codes.

Cross-marketing can be done to entice customers to visit a farther away location operated by the same company. For example, if a restaurant has brands with different themes or ethnic specialties, then people may drive farther to try a sister location. This strategy would be effective for a higher-end location, as people may be willing to pay more for a special occasion if the service provider has established its reputation through customer reviews. It could be a way to introduce a new branch at a different location by using a prototype review from an existing location in advertising the new venue.

5.3 Limitations and future research

This study adopts a hypothetical dining decision using scenarios designed to resemble a review website. While this approach allows for control of experimental variables, participants did not spend money or drive to the restaurant.

Future research can conduct a field study to investigate similar phenomena in a real restaurant setting. For example, researchers could partner with an online review site and manipulate prototype and distance cues and measure their effects on restaurant performance. Analysis of secondary data from reservation sites such as Open Table could reveal how far people are traveling, whether it was a special occasion, and if a reservation was made. This study examined customer's willingness-to-pay to as a post-choice restaurant behavior. Previous research suggests that service quality may not be directly related to discretionary spending such as tipping (Lynn, 2001). However, this research found that the review prototype influences expectations of service quality. Future research could investigate whether cues in the online review environment indirectly influence discretionary spending behaviors through customer expectations.

A strength of this study is the use of simultaneous cues, but it was necessary to limit the number of cues to examine all main effects and interactions in a manageable design. Most online review sites provide the overall ratings for the restaurant, as well as numerous other cues that could affect decisions. Customers have different motivations for restaurant visits. Thus, future research should investigate how other factors on online review sites influence consumer decisions and how these effects differ based on authenticity (Curran *et al.*, 2018) and hedonic versus utilitarian (Prebensen and Rosengren, 2016) motivations. This study is limited to a single restaurant choice. In reality, customers narrow down the possible options after comparing multiple cues. Distance may influence choices between restaurants that vary in review valence and content. Future research that explores how different cues influence choice between restaurants could provide insights into the relative weight placed on different cues.

Within the service sector, the vast majority of online review research focuses on hospitality and tourism. This is not surprising, as consumers read more online reviews for restaurants and hotels than any other service (Statista, 2018). However, consumers are increasingly using reviews to evaluate other services, such as healthcare, financial services, beauty salons, auto services and many others (Statista, 2018). Future research should examine the influence of customer reviews along with other cues in the online environment for different services. One example is a content analysis of reviews for security brokerage services, which revealed 16 service quality dimensions that could lead to satisfaction or dissatisfaction (Yang and Fang, 2004).

This study approaches online reviews from the perspective of consumer behavior. Consumers face a variety of issues, while they are searching on the review site such as credibility (Kusumasondaja *et al.*, 2012) and helpfulness (Moore, 2015) of the reviews. Future research may integrate the perspectives of consumers and review site operators to provide guidance for operators to maximize the sites' effectiveness.

In today's complex purchasing environment, it is no longer prudent to consider classic theoretical principles in isolation. This research demonstrates that:

- different cues influence different outcomes; and
- multiple cues operate simultaneously to influence decision processes.

This research provides a cornerstone to advancing knowledge about decision-making while providing insight into contemporary services marketing issues.

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