Seeking reward or avoiding risk from restaurant reviews: does distance matter?

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Abstract

Purpose – The purpose of this paper is to evaluate the extent to which consumers will exert more effort to avoid risk (negative reviews) versus seek reward (positive reviews) when making a restaurant decision.

Design/methodology/approach – This study investigates the influence of distance and review valence on restaurant decisions. A 2 (base restaurant review valence: negative, neutral) × 2 (target restaurant review valence: neutral, positive) × 2 (distance: 30 min, 60 min) between-subjects factorial design was used.

Findings – People exert more effort to seek a reward versus avoid a risk. People will drive any distance to dine at a restaurant with positive reviews. However, the tendency to avoid a restaurant with negative reviews declines as distance increases.

Practical implications – This study emphasizes the critical role of positive reviews in the restaurant industry. This research provides guidance to operators to manage online reviews effectively. The marketing strategy taking into account review valence and distance allows the business to attract new customers and grow its customer base.

Originality/value – This research synthesizes asymmetry effects and prospect theory with the level of risk associated with the outcome. This research is theoretically noteworthy since the finding of a reverse asymmetry principle is in contrast with the traditional belief of risk-avoidance when comparing gains and losses.

Keywords Effort, Heuristics, Asymmetry, Online reviews, Reward-seeking, Risk-avoidance

Paper type Research paper

Introduction

The competitiveness of the restaurant industry is intensifying as new substitutes for the dining experience emerge. People can enjoy a restaurant-style meal without leaving their homes through Uber Eats and other food delivery services. Even if restaurants participate in this distribution channel, their profitability declines due to third-party charges (Keng, 2018). Moreover, people expect their food within a short period, so restaurants cannot expand their geographic reach through food delivery distribution (Keng, 2018). Why then, with convenience at their doorstep, would consumers venture out to dine at a restaurant some distance away?

The answer lies in the concurrent trend by consumers to seek a unique dining experience. The Millennial generation in particular, which is the largest US demographic, is looking for an authentic dining adventure (Mealey, 2018). How can consumers ensure that they will have a memorable dining experience? Many customers rely on online reviews as a source of pre-dining expectations. According to consumer research, 97 per cent of consumers read online reviews for local business and almost 60 per cent of consumers read restaurant reviews (BrightLocal, 2017). Customers read restaurant reviews more than any other service sector, including hotels. Moreover, Yelp is tied with Facebook as the most trusted consumer review site (BrightLocal, 2017).
It is not enough to ask whether restaurant reviews influence decisions, we should ask why. This research considers three factors: risk-avoidance, reward-seeking and effort. There is an asymmetry effect for customer reviews, whereby consumers perceive a negative review as more powerful than a positive review (Lee and Cranage, 2014). Prospect Theory predicts risk-avoidance in decision making, such that losses are weighted more heavily than gains (Tversky and Kahneman, 1974). Particularly in the lodging industry, customers are more likely to engage in risk-avoiding behaviors by not choosing a travel product with negative reviews versus choosing a product with positive reviews (Book et al., 2016, 2018; Tanford and Kim, 2018).

It has been argued that risk-avoidance does not occur consistently over the decision-making process (Shen et al., 2014). When the outcome of the decision is not significantly risky, people tend to focus on the process of the decision and not the outcome. In doing so, they are more likely to pursue a reward than to avoid a risk. A restaurant choice is relatively less risky than booking a hotel, so consumers may instead engage in reward-seeking. Therefore, this research proposes a “reverse asymmetry” effect of restaurant reviews.

Distance is an important factor because it requires effort. People make different amounts of effort based on the risk associated with a purchase decision (Darke et al., 1995). A lodging choice requires substantial time, money and effort; therefore, the level of risk is relatively high, which induces customers to be risk-averse (Tanford and Kim, 2018). A restaurant choice is less risky, and people may exert more effort to seek a reward. This research makes the link between effort and risk-avoidance by combining distance with review valence. The relative distance consumers will drive to avoid a restaurant with negative reviews or seek a restaurant with positive reviews can identify whether their behavior is risk-avoidance or reward-seeking.

The research seeks to answer three questions that are critical to restaurant operators in today’s society. First, the research asks how review valence and distance influence consumers’ expectations about the restaurant experience. This is important because the new generation of customers seeks a unique dining experience, so it is not enough to avoid negative publicity. Customer reviews are a primary source of pre-choice information and may determine whether the customer chooses to make the trip. Second, the research asks whether consumers will drive farther to avoid a negative dining experience or seek a positive dining experience. This is important because people do not have to travel at all due to the proliferation of home delivery services. Third, the research asks whether review valence influences the amount customers are willing to pay. This question links the first two, that is, the food itself becomes a commodity, and reviews provide insight into the authenticity of the dining experience that allows operators to charge a premium. The findings are essential to restaurant operators because most studies focus on the lodging sector and the need to mitigate the impact of negative reviews. This research highlights the importance of positive reviews in an increasingly competitive restaurant industry in which substitutes threaten patronage and profitability.

**Literature review**

*Decision processes for online reviews*

Online customer reviews play a critical role in hospitality purchase decisions (Book et al., 2016, 2018; Kim and Park, 2017; Noone and McGuire, 2014; Sparks and Browning, 2011; Tanford and Montgomery, 2015). Although a growing body of research has accumulated on the role of customer reviews, the majority of hospitality research focuses on lodging (Book et al., 2016, 2018; Noone and McGuire, 2014; Sparks and Bradley, 2017; Sparks and Browning, 2011; Zhao et al., 2015). A classification of hospitality review studies published through 2015 revealed that 72 per cent focus on hotels, 12 per cent involve restaurants, and
16 per cent address other topics (Kwok et al., 2017). Research on restaurant reviews focuses primarily on content analysis of reviews, rather than their influence on customer purchase decisions (Chen and Lurie, 2013; Li et al., 2018; Pantelidis, 2010; Yang et al., 2017). Therefore, there is a lack of knowledge about the role of online reviews in the restaurant setting. There are fundamental differences between dining and lodging choices, so it cannot be assumed that reviews operate in the same manner.

The tendency to rely on customer reviews can be explained by principles of heuristics (Tversky and Kahneman, 1974). According to dual processing systems, humans have two ways of thinking, which are heuristic processing and systematic processing (Chaiken, 1980; Kahneman, 2011). Systematic processing is effortful and slow, and is used in situations where deliberate thinking is required. On the contrary, heuristic processing is automatic and intuitive because people rely on a few salient cues to make a decision due to limited mental capacity. Therefore, heuristic processing provides a mental shortcut by simplifying the decision process (Tversky and Kahneman, 1974). When making online purchases, customers must consider several factors to make the ideal decision. There is a plethora of information available from online merchants. Humans have limited cognitive capacity, making it difficult to process all of the information (Gao et al., 2012). This is especially problematic for experiential products, as there is greater uncertainty about the decision (Gao et al., 2012). Therefore, customers rely on online reviews, which can be considered heuristic cues that simplify the decision process.

Research demonstrates the use of heuristics as a function of online hospitality reviews. Customers’ willingness-pay for a positively reviewed resort was higher when the reference price was extremely high, which reflects anchoring effects (Book et al., 2016). Customers tend to rely on easy-to-process information, such that hotel evaluations are influenced by the order of review valence, which produces negative or positive framing (Sparks and Browning, 2011). Evidence for dual processing systems was found for the influence of hotel reviews, whereby effortful processing of review content decreased reliance on heuristics (Book et al., 2018). The current research advances the findings of previous studies by demonstrating how customers use heuristic cues (restaurant reviews) under different goals: avoiding a bad dining choice or seeking a good dining choice.

Risk avoidance vs reward-seeking. According to asymmetry effects, people place more weight on negative cues compared to positive cues (Taylor, 1991). Prospect Theory explains that people are risk-averse, and are likely to perceive the value of a loss to be larger than the value of again, even when the absolute value is identical (Kahneman and Tversky, 1979). The asymmetry effect can be connected to the differential effect of negative and positive online reviews. There is ample evidence that negative reviews have a greater influence on customers’ product evaluations than positive reviews (Book et al., 2016, 2018; Chen and Lurie, 2013; Lee and Cranage, 2014). People consider negative reviews to be more diagnostic, useful, and persuasive than positive reviews (Lee and Cranage, 2014; Park and Nicolau, 2015). Even a single negative review can significantly reduce a customer’s likelihood to choose a travel product (Book et al., 2016). Customers’ attitudes toward a product change in a negative direction after reading negative reviews to a greater extent than they change in a positive direction after reading positive reviews (Lee and Cranage, 2014).

While the view that negative reviews are stronger, more influential and difficult to resist than positive reviews is predominant, positive reviews can be a critical factor in customers’ decision making (Phillips et al., 2017; Vermeulen and Seegers, 2009). When customers are not familiar with a hotel chain, their attitudes change more easily after reading positive reviews (Vermeulen and Seegers, 2009). The result of content analysis of data from 422 Swiss hotels indicates that positive reviews have an impact on hotel demand and RevPar.
while negative reviews have no significant effect (Phillips et al., 2017). Moreover, the experimental research found that consumers were willing to pay more for a hotel with positive reviews (Book et al., 2016).

This research adopts the risk-avoidance and reward-seeking concept to identify whether the traditional belief of risk aversion is upheld in a dining decision process. Risk is defined as dining at a restaurant with negative reviews. After reading negative reviews, people may want to avoid a bad dining choice, which refers to risk-avoidance. A reward is defined as dining at a restaurant with positive reviews. Such a situation is considered reward-seeking since consumers choose more favorable restaurants over less favorable dining options. Although lodging studies tend to support the risk-avoidance outcome, the characteristics of the dining situation may be susceptible to reward-seeking. Principles of psychology and decision-making suggest that the level of risk may be a determining factor.

**Effort and risk**
Asymmetry effects and prospect theory provide a rationale that people are risk-averse and may make more effort a risk avoidance versus a reward-seeking. However, research suggests that people make different amounts of effort by the level of risk associated with the decision (Darke et al., 1995). Consumers will walk farther to find a better price when the product is expensive. However, they stop searching and rely on the heuristic discount cue when the product is inexpensive (Darke et al., 1995). The risky situation, such as purchasing an expensive product, makes people exert more effort. They exert less effort when the risk is low, which is purchasing a low-priced product in this scenario. Heuristics provide a means of reducing mental effort (Shah and Oppenheimer, 2008), which may lead to reduced physical effort in low risk situations.

Research suggests that people are risk-averse when they assess the outcome but not the process (Shen et al., 2014). In other words, when people need to pay attention to the outcome because it involves high risk, they will be risk-averse. On the contrary, when people focus on the process of purchasing rather than the outcome, they are motivated to pursue a reward. The research suggests that the motivation to pursue a reward is increased when people are making pre-purchase decisions versus evaluating the outcome of their decisions (Shen et al., 2014).

In the current research, consumers have two dining options, one of which is closer but has negative reviews and the other of which is farther but has positive reviews. Consumers may be willing to exert physical effort by driving a distance to avoid a risk (a restaurant with negative reviews) or to seek a reward (a restaurant with positive reviews). Therefore, effort is defined as the distance people must drive to dine at the more desirable restaurant. Principles of prospect theory (Kahneman and Tversky, 1979) and asymmetry effects (Chen and Lurie, 2013; Taylor, 1991) imply that individuals will make more effort to avoid a bad purchasing decision than to pursue a better option. This pattern was demonstrated in a lodging setting, in which customers were willing to travel any distance to avoid a bad resort experience, but not to seek a good resort experience (Tanford and Kim, 2018). However, a dining choice requires less cost, time, and effort than a lodging choice. Dining out is a high frequency activity, and people tend to seek variety over luxury (Kim and Kim, 2005). The consequences of a risky choice may be less impactful than purchasing other hospitality products. Therefore, people may be more motivated to seek a reward, which on the surface appears incongruent with Prospect Theory and traditional asymmetry effects. In this research, it is suggested that a “reverse-asymmetry” effect may operate in less costly decisions such as dining.
Stages of the purchasing process
Consumers go through three stages in their purchasing process: pre-choice, choice, and post-choice (Frambach et al., 2007). Consumers seek information in the pre-choice stage and make the 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). Therefore, consumers are expected to engage in reward-seeking in pre-choice and choice stages of the purchasing process.

Research demonstrates the role of customer reviews in each stage of the purchasing process in lodging choice. Research demonstrates the influence of customer reviews on customer’s pre-purchase evaluations for pre-choice stage (Noone and McGuire, 2014), likelihood to choose, booking intention, and product choice for choice stage (Book et al., 2016, 2018; Sparks and Browning, 2011; Tanford and Montgomery, 2015; Zhao et al., 2015), and willingness-to-pay and post-decision dissonance for the post-choice stage (Book et al., 2016; Tanford and Montgomery, 2015). However, these studies do not postulate different decision mechanisms over the stages of purchasing. Moreover, lodging studies demonstrate a negativity bias in a costly purchase situation that leads to risk-avoidance. This research examines the influence of customer reviews on consumer’s risk-avoidance and reward-seeking behaviors across the three stages of the purchasing process. Moreover, it investigates the influence of heuristic cues in a restaurant setting where lower cost and higher frequency reduce the risk of a bad decision.

Hypothesis development
The hypotheses are developed across three stages of purchasing: pre-choice, choice, and post-choice. To set up the risk-avoidance-reward-seeking situation, people compare two dining options with different review valence and distance. One of the restaurants has negative or neutral reviews and is close to home. Another has neutral or positive reviews, but it is located farther, so it requires more effort. Attitudes toward a product or service are treated as pre-purchase variables (Fishbein and Ajzen, 1975). This research includes three pre-choice attitudes based on previous research in a similar hospitality setting: restaurant appeal, food expectation and service expectation (Tanford and Kim, 2018). An interaction is predicted, such that reward-seeking outweighs distance whereas risk-avoidance does not.

Risk avoidance is defined as more favorable evaluations of the farther restaurant when the closer restaurant has negative reviews. In the risk avoidance situation, although people are expected to make a certain amount of effort to avoid a bad dining choice, their pre-choice evaluations will be influenced by distance because the cost is relatively low (Darke et al., 1995). Therefore, risk-avoidance behavior is not expected at the pre-choice stage:

H1a. When the closer restaurant has negative reviews, participants will have less favorable evaluations of the farther restaurant as distance increases.

In a reward-seeking situation, the close restaurant has neutral reviews while the alternative has more favorable reviews but is located farther away. People are expected to underutilize distance cues when evaluating the more positively reviewed restaurant because they are motivated to pursue a reward at the pre-choice stage (Shen et al., 2014).

H1b. When the closer restaurant has neutral reviews, distance will not influence pre-choice evaluation of the farther restaurant.
Choosing the restaurant is part of the decision process and not the outcome (Frambach et al., 2007); therefore, people are expected to make more effort for reward-seeking versus risk-avoidance (Frambach et al., 2007). Thus, for the choice stage, the same interaction as the pre-choice stage is hypothesized.

\( H2a \). When the closer restaurant has negative reviews, likelihood to choose the farther restaurant will decrease as distance increases.

\( H2b \). When the closer restaurant has neutral reviews, distance will not influence likelihood to choose the farther restaurant.

Once the choice is made, the process of purchasing is completed. Therefore, people will no longer be motivated to pursue reward-seeking. Instead, at the post-choice stage, they will focus on evaluating the outcome of the decision to decide how much effort to make (Shen et al., 2014). Base review valence is no longer relevant for willingness to drive to the target restaurant at the post-choice stage. Applying dual processing principles, a moderate distance requires less effort, thereby decreasing reliance on heuristic cues from the reviews. Therefore, an interaction between distance and target review valence is hypothesized:

\( H3a \). People will be willing to drive farther to a restaurant an extreme distance from home when it has positive versus neutral reviews.

\( H3b \). Review valence will not influence willingness-to-drive to a restaurant a moderate distance from home.

Following the same reasoning, peoples’ willingness-to-pay should be influenced by the outcome and not by the process. However, distance should not be a factor, as the cost of the dining experience is not dependent upon the effort required to obtain it. Likewise, reviews for a different restaurant should not influence WTP for the restaurant that was chosen. Therefore, main effects of review valence are predicted on WTP for each restaurant:

\( H4a \). WTP will be higher for a restaurant with positive versus neutral reviews.

\( H4b \). WTP will be higher for a restaurant with neutral versus negative reviews.

**Method**

**Design**

Participants made dining decisions for two restaurants, one of which was close to home (designated the “base” restaurant) and one of which was a specified distance from home (designated the “target” restaurant). A 2 (base review valence: negative, neutral) × 2 (target review valence: neutral, positive) × 2 (distance: 30 min, 60 min) between-subjects factorial design was used. The base restaurant is always 5 min (0.7 miles) from home and has negative or neutral reviews. The customer reviews for the target restaurant, which is located farther away, are neutral or positive. Applying the risk-reward distinction, outcomes that favor the target restaurant when base reviews are negative represent risk-avoidance. Outcomes that favor the target restaurant when target reviews are positive represent reward-seeking. Distance is defined as the distance that people must drive from home to dine at the target restaurant, which is either 30 min (12 miles) or 60 min (36 miles). Distance represents the effort that people will exert to avoid risk or seek reward. Table I shows an overview of the experimental design.
Stimuli and pretesting

The stimuli consisted of written materials adapted from an online restaurant review website (Yelp®). On the first screen of the online survey, each restaurant was displayed along with a map indicating the location of each restaurant and home. The second screen contained photos and descriptions of the two restaurants side-by-side. The base restaurant, which was 5 min from home, was always on the left. The target restaurant was on the right with the distance manipulation repeated. Each restaurant description was followed by five customer reviews with the appropriate valence.

Pretesting was conducted to select reviews with the appropriate valence. The favorability of 40 restaurant reviews was rated on a seven-point Likert scale from 1 (extremely unfavorable) to 7 (extremely favorable) by two groups of 35 subjects, each of which evaluated 20 reviews. Five positive reviews and five negative reviews were selected with an average rating of 6.33 and 2.46, respectively. Ten neutral reviews were selected with an average rating of 4.31.

Measures

Three types of measures were evaluated: pre-choice evaluations, choice, and post-choice evaluations. For pre-choice evaluations, participants provided three restaurant ratings 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”. For choice, participants rated likelihood to choose each restaurant using seven-point numerical scales from extremely unlikely to extremely likely. Participants made a binary dining choice by choosing one of the two restaurants. For post-choice evaluations, willingness-to-pay 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.

Subjects and procedure

A sample of 209 participants was recruited through Qualtrics, a professional online research firm. Subjects were randomly assigned to one of the eight experimental conditions, with 26 to 27 subjects per condition. To be eligible, participants had to be at least 18 years old and they had to have read restaurant online reviews in the past two months. The sample was 82.3 per cent female and 17.7 per cent male. Approximately 52.9 per cent of the sample was married. Age ranges were 18-29 (32.1 per cent), 30-39 (32.5 per cent), 40-49 (16.3 per cent), 50-59 (9.1 per cent) and 60 or over (10.0 per cent). The majority of the sample (74.9 per cent)

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Notes: N: Negative review; O: neutral review; P: positive review

Table I. Experimental design
was Caucasian, followed by Hispanic (9.2 per cent) and Asian (8.2 per cent). More than half of the sample had a four-year college degree or graduate degree (57.2 per cent). The median annual income was approximately $60,000.

Results
Data were analyzed using SPSS. Three-way ANOVAs (Base review valence × Target review valence × Distance) were used to test the main effects and interactions of the independent variables on all scale measures. Simple effects tests were employed to identify the source of significant interactions (Keppel and Wickens, 2004). Effect size measures (eta²) are reported for significant ANOVA results, where values of 0.01, 0.06 and 0.14 are considered small, medium and large effects (Cohen, 1988). Logistic regression was conducted to evaluate the effects of the independent variables on binary restaurant choice (Pampel, 2000).

Manipulation checks
A one-way ANOVA by base review valence on favorability ratings of the base restaurant reviews revealed a large and significant effect, F(1,207) = 121.09, p < 0.001, eta² = 0.369. The mean favorability rating is 1.51 for negative and 3.97 for neutral base reviews. The effect of target review valence on favorability ratings of the target restaurant is large and significant (F(1,207) = 53.73, p < 0.001, eta² = 0.206). Means for favorability ratings are 4.24 for neutral and 5.76 for positive reviews. 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 by distance shows a significant effect of distance on the target restaurant (F(1, 207) = 6297.88, p < 0.001, eta² = 0.968), with means of 6.63 and 12.99 on the distance scale for the 30- and 60-min conditions. There is a large and significant effect on distance in miles, which was rated in open-ended format (F(1, 207) = 161.64, p < 0.001, eta² = 0.438). Means for 30-min (12 miles) and 60-min (36 miles) conditions are 15.35 and 39.16 miles, respectively. The effect of distance on the base restaurant is not significant for minutes or miles. Hence, the manipulations were effective.

Restaurant pre-choice evaluation
Three-way (B × T × D) ANOVAs were conducted on three items for pre-choice evaluation, which are appealing, service expectation, and food expectation. The result revealed a large and significant main effect of target valence on appealing (F(1,201) = 84.05, p < 0.001, eta² = 0.295) and food expectation (F(1,201) = 151.94, p < 0.001, eta² = 0.430). Participants reported that the target restaurant is more appealing when it has positive reviews (M = 5.88) versus neutral reviews (M = 4.10). Similarly, food expectation for the target restaurant is higher when it has positive reviews (M = 6.29) versus neutral reviews (M = 4.63). A significant three-way B × T × D interaction on service expectation for the target resort was found (F(1,201) = 3.91, p < 0.001, eta² = 0.019). To determine the source of the interaction, it is necessary to analyze its individual components (Keppel and Wickens, 2004). Since H1a and H1b predicted that the effects of target valence and distance would differ as a function of base valence, this interaction was broken down to the simple interaction of T × D at each level of base valence. A two-way ANOVA for the neutral base review condition did not reveal a T × D interaction (F < 1). However, a two-way ANOVA for the negative base review condition found a significant T × D interaction (F(1,101) = 7.15, p = 0.009, eta² = 0.066). It is, therefore, necessary to drill down further to identify the source of the two-way interaction. Two one-way ANOVAs were conducted for the simple effect analysis of distance at each level of target valence when base valence is negative. The analysis revealed
that when the target review valence is neutral, distance significantly influences service expectation ($F_{1,50} = 6.13, p = 0.017, \eta^2 = 0.109$). As seen in Figure 1, when the target restaurant has neutral reviews, the service expectation rating is higher for the 30-min distance ($M = 4.69$) compared to the 60-min distance ($M = 3.58$). However, the effect of distance is not significant when the target restaurant has positive reviews ($F_{1,52} = 1.38, p = 0.246$), with means of 5.96 and 6.38. Together the findings support the predicted interaction on pre-choice evaluations since distance influences service expectations with negative base reviews ($H1a$) but not neutral base reviews ($H1b$). At the pre-choice stage, the findings suggest that reward-seeking outweighs distance, whereas risk-avoidance does not.

**Restaurant choice**

A three-way ($B \times T \times D$) ANOVA was conducted on ratings of likelihood to choose the target restaurant. A significant effect of target review valence was found ($F_{1,201} = 97.22, p < 0.000, \eta^2 = 0.326$). Participants responded that they are more likely to choose the target restaurant when it has positive reviews ($M = 5.72$) versus when it has neutral reviews ($M = 3.62$). There were significant main effects for base review valence ($F_{1,201} = 7.96, p = 0.005, \eta^2 = 0.038$) and distance ($F_{1,201} = 7.46, p = 0.007, \eta^2 = 0.036$). However, the main effects are superseded by a marginally significant two-way interaction of Base $\times$ Distance ($F_{1,201} = 3.35, p = 0.069, \eta^2 = 0.016$). An interaction implies that the effect of one independent variable is not the same at different levels of the other independent variable, so the simple effect is the meaningful result (Keppel and Wickens, 2004). The hypothesized interaction predicts that the effect of distance will differ as a function of base review valence. Therefore, the simple effect of distance was analyzed for negative and neutral base reviews using two one-way ANOVAs. The analysis revealed that when the base restaurant has negative reviews, distance significantly influences likelihood to choose the target restaurant ($F_{1,103} = 7.50, p = 0.007, \eta^2 = 0.068$). However, the effect of distance on likelihood to choose is not significant when the base restaurant has neutral reviews ($F < 1$). As seen in Figure 2, when base reviews are negative, participants are less likely to choose the restaurant that is 60 min ($M = 4.48$) compared to 30 minutes ($M = 4.47$) from home. However, there is no difference between the 30- and 60-minute distances when base review valence is neutral ($M = 4.27$ and 4.46). Therefore, the predicted interaction was obtained, whereby distance decreases likelihood to choose for negative base reviews ($H2a$) but not neutral base reviews ($H2b$). In other words, at

![Figure 1. Effect of distance and target review valence on service expectation (negative base review valence)](image)

**Notes:** Solid line is significant; dashed line is not significant
the decision stage, people will go any distance to seek reward, but distance is a deterrent to avoiding risk when the consequences (a bad dining experience) are relatively low.

The effects of the manipulations on binary restaurant choice were analyzed using a logistic regression. Logistic regression is the appropriate method when the dependent variable is dichotomous. It analyzes the influence of metric and nonmetric variables on the odds of the binary event occurring (Pampel, 2000). For the dependent variable, choosing the base restaurant was coded as 0 and choosing the target restaurant was coded as 1. As predictors, the independent variables were entered with their interactions. All independent variables are binary and were coded as 1 and 0 to represent their two levels. Neutral was coded as 0 and negative/positive was coded as 1 for the base/target reviews, respectively. For distance, the 30-min distance was coded as 0 and the 60-minute distance was coded as 1. The interactions were entered as the product of each set of independent variables. The Nagelkerke R-square is 0.602 indicating that 60.2 per cent of the variance in restaurant choice was accounted. The model accurately classifies 87.6 per cent of the cases into the proper choice group. An acceptable model should have a classification rate of 25 per cent better than chance (Hair et al., 2010), which would be 62.5 per cent (0.50 + 0.25 × 0.50). Therefore, the classification accuracy far exceeds the minimum criterion.

Main effect for target review valence was significant (B = 2.64, Exp(B) = 14.00, Wald = 15.00, p < 0.001). The exponent represents the odds of the group coded as 1 compared to the reference group coded as 0 having a value of 1 on the dependent variable (Pampel, 2000). In other words, the odds of selecting the target restaurant over the base restaurant are increased by a factor of 14 when the target restaurant has positive reviews versus when it has neutral reviews. The percentage of participants who choose the target restaurant is 87.6 per cent when reviews are positive and 54.8 per cent when reviews are neutral. The findings indicate that reward-seeking is paramount when it comes to actual choice.

Restaurant post-choice evaluations
For post-choice evaluations, willingness to drive (WTD) and willingness-to-pay (WTP) were rated. WTD in minutes and miles were analyzed using two three-way (B × T × D) ANOVAs. There was no effect of base valence on WTD in miles to the target restaurant (F < 1). However, a T × D interaction on WTD in miles was obtained (F₁,20₁ = 8.35, p = 0.004, eta² = 0.040). Since H₃a and H₃b predict that the effect of target valence will differ as a
function of distance, two one-way ANOVAs were performed for the analysis of the simple
effect of target valence at each level of distance. As shown in Figure 3, at the 60-min
distance, there is a large target valence effect ($F_{1,103} = 18.41, p < 0.001, \eta^2 = 0.153$), such
that WTD is higher when reviews for the target restaurant are positive ($M = 27.54$ miles)
versus neutral ($M = 14.54$ miles). There is no difference between positive ($M = 15.20$ miles)
and neutral ($M = 14.79$ miles) reviews at the 30-min distance ($F < 1$). Therefore, the
predicted interaction is obtained, such that target review valence influences WTD at a far
distance ($H3a$) but not a moderate distance ($H3b$). Therefore, at the post-choice stage, people
are willing to exert extra effort to seek a reward.

Although there were no interactions, a similar pattern was obtained for WTD in minutes
using a three-way ANOVA. There was no effect of base valence on WTD to the target
restaurant ($F_{1,201} = 1.16, p = 0.283$). However, significant main effects were found for target
valence ($F_{1,201} = 33.13, p < 0.001, \eta^2 = 0.141$) and distance ($F_{1,201} = 22.69, p < 0.001, \eta^2 =
0.101$). Respondents will drive farther for a target restaurant with positive reviews ($M =
32.46$ min) than a target restaurant with neutral reviews ($M = 20.37$). Distance significantly
influences WTD in minutes for the target restaurant, which is higher when it is 60 min from
home ($M = 31.41$) than when it is 30 min from home ($M = 21.41$).

A three-way ANOVA was performed on WTP for the base and target restaurant, which
was a ratio measure on a sliding scale from $0$ to $100$. The analysis revealed a significant
effect of target valence on WTP for the target restaurant ($F_{1,201} = 20.70, p < 0.001, \eta^2 =
0.093$), such that WTP is higher when target restaurant reviews are positive ($M = 28.43$)
versus neutral ($M = 19.98$). This result supports $H4a$. Likewise, an effect of base valence on
WTP for the base restaurant was found, such that participants are willing to pay more for a
restaurant close to home with neutral ($M = 19.88$) versus negative ($M = 11.69$) reviews
($F_{1,201} = 29.72, p < 0.001, \eta^2 = 0.129$), which supports $H4b$. However, review valence for the
base restaurant does not influence WTP for the target restaurant ($F < 1$) and target valence
does not influence WTP for the base restaurant ($F < 1$). Together, the findings support the

![Figure 3](image_url)

**Figure 3.**
Effect of distance and target review valence on WTD in miles

**Notes:** 60-minute distance is significant; 30-minute distance is not significant
hypothesis that WTP for a particular restaurant is only influenced by that restaurant’s reviews, and not by reviews for a different restaurant.

**Discussion**

**Conclusions**

The growing number of substitutes coupled with consumers’ desire for a unique dining experience is countervailing forces influencing the restaurant industry. Therefore, it becomes essential for restaurant operators to find ways to induce customers to travel a distance to dine at a restaurant. Customer reviews may be the deciding factor between convenience and effort. This research investigates the question: when will people exert more effort when making a dining choice? Is it to avoid a risk or to seek a reward? The findings show that people make more effort when seeking a reward. People are willing to drive a considerable distance to dine at a restaurant with positive reviews when the closer restaurant has neutral reviews. On the contrary, distance matters when people avoid a restaurant with negative reviews. If the distance is too far, the preference for an alternative restaurant declines. This finding emphasizes the power of positive online reviews, which outweigh location in dining choice.

Table II shows the summary of hypothesis support. Different psychological processes were expected to operate at different stages of the decision process. Reward-seeking behaviors were observed in pre-choice and choice stages as hypothesized. People report higher ratings of service expectation and likelihood to choose the target restaurant, no matter how far it is located, when the base restaurant has neutral reviews. However, ratings for the target restaurant decline as a function of distance when the base restaurant has negative reviews. The result indicates a “reverse asymmetry effect” in contrast to the typical asymmetry effect in which negative information receives more weight (Taylor, 1991). People are reward seekers when they make a restaurant choice. Previous research suggests that people exert different amounts of effort based on the price of the product (Darke et al., 1995). This research extends the influence of price and risk to online review valence and risk: people make different amounts of effort based on the level of risk associated with the outcome. The finding runs counter to the prevailing impact of negative reviews in lodging choice,

<table>
<thead>
<tr>
<th>Decision</th>
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<tr>
<td><strong>Pre-choice</strong></td>
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<tr>
<td>Service expectation</td>
<td>H1a</td>
<td>30 min. &gt; 60 min.</td>
<td>Risk avoidance (Negative base restaurant)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>H1b</td>
<td>30 min. = 60 min.</td>
<td>Reward seeking (Neutral base restaurant)</td>
<td>Yes</td>
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<td><strong>Choice</strong></td>
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<tr>
<td>Likelihood to choose</td>
<td>H2a</td>
<td>30 min. &gt; 60 min.</td>
<td>Risk avoidance (Negative base restaurant)</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>H2b</td>
<td>30 min. = 60 min.</td>
<td>Reward seeking (Neutral base restaurant)</td>
<td>Yes</td>
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<tr>
<td><strong>Post-choice</strong></td>
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<tr>
<td>Willingness-to-drive</td>
<td>H3b</td>
<td>Positive &gt; Neutral (60 min)</td>
<td>Dual processing</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>H3b</td>
<td>Positive = Neutral (30 min)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Table II.</strong></td>
<td></td>
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<tr>
<td>Hypothesis support</td>
<td>H4a</td>
<td>Positive &gt; Neutral (Target restaurant)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>H4b</td>
<td>Neutral &gt; Negative (Base restaurant)</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>
which outweigh other factors including price (Book et al., 2016, 2018; Noone and McGuire, 2014). The discrepancy between the influence of review valence on restaurant and lodging choices can be explained by reward-seeking versus risk-avoidance.

The finding in the post-choice stage supports dual processing (Chaiken, 1980; Kahneman, 2011) and effort reduction (Shah and Oppenheimer, 2008) principles. Heuristics serve as effort reduction tools by allowing people to rely on salient cues to simplify their decision process (Shah and Oppenheimer, 2008). When distance is far, it activates review valence as a heuristic cue that people rely on to determine how far they will drive to the restaurant. However, when distance is moderate, the distance cue is not sufficiently salient to activate the use of heuristics, and the impact of valence is reduced. The finding supports dual processing systems by suggesting that the decision process is systematic at the moderate distance and heuristic at the far distance.

Theoretical implications
This research emphasizes the importance of theory to explain the root causes of hospitality consumer decisions. Although other researchers have applied theory to the influence of online reviews, this research goes a step further by integrating principles of asymmetry effects (Taylor, 1991) and Prospect Theory (Kahneman and Tversky, 1979). The research advances our knowledge about the way in which these classic principles operate in today’s environment. Moreover, it helps establish the boundary conditions under which people will be risk-averse or reward-seeking by suggesting that the difference is a function of the level of risk associated with the outcome. That is, are not always risk-averse: they are reward seekers when the risk associated with the outcome is relatively low. In such a situation, they exert more effort to seek a positive outcome versus avoid a negative outcome. The research introduces physical effort (distance) as a factor that can influence reliance on heuristic processing, just as mental effort does (Kahneman, 2011).

Prospect theory has been applied to a variety of areas including economics, finance, decision sciences, organization management, energy management and marketing. Asymmetry effects (Taylor, 1991) are rooted in principles of psychology but have been applied broadly in consumer behavior including customer reviews. Hospitality research encompasses all of these areas and provides a fertile ground to evaluate classic theories in a modern decision context. The finding of a “reverse-asymmetry” effect provides new insight that extends beyond the hospitality field into areas of psychology and decision-making.

This study emphasizes the importance of investigating decision processes in different purchasing stages and hospitality contexts. Previous research examines the effect of reviews on hotel pre-purchase evaluations (Book et al., 2016, 2018; Noone and McGuire, 2014), booking intentions (Sparks and Browning, 2011; Zhao et al., 2015), lodging choices (Book et al., 2016, 2018; Tanford and Montgomery, 2015) and post-purchase evaluation (Book et al., 2016). However, those studies do not postulate different psychological processes at each stage of the purchasing cycle. This research draws upon the consumer research literature to suggest that people process information differently by focusing on either the process or the outcome in each stage (Frambach et al., 2007). This focus motivates different goals of the purchasing decision, whether avoiding a risk or seeking a reward. It is tempting to generalize the findings in one segment of the hospitality industry to the overall hospitality industry, but our research suggests that fundamental differences exist between segments. Since the level of risk is not identical across hospitality contexts, this research suggests that decision processes and outcomes need to be evaluated by the context within the hospitality setting. In the quest to contribute to the advancement of knowledge in hospitality, the importance of replication should not be overlooked.
This research highlights the critical role of positive reviews in restaurant decision making. As many studies emphasize the influence of negative reviews, the power of positive reviews may be neglected by operators. This research shows that positive reviews increase the price people are willing to pay and the distance they are willing to travel, which ultimately drives business revenue. Therefore, it is critical for restaurant operators to maintain and take advantage of positive reviews.

Positive reviews can be used as a marketing tool. As positive reviews outweigh distance, they motivate people to travel farther for a positive dining experience. Indeed, some people plan their travel around the dining experience, as cuisine travel is one of the emerging trends in hospitality (Fanelli, 2017). Restaurant operators may cooperate with travel companies such as airlines, rental cars, and hotels to attract customers whose main travel purpose is having good food. One of the major airline partner groups, Star Alliance, operates the program called “Round the world” which is a flight ticket to travel the world. If local restaurants with positive reviews join hands with Star Alliance to advertise, they may attract foodie travelers worldwide. One of the major online travel agencies, Orbitz, created “The Michelin Star Spangled Roadmap” for foodie travelers (Appelbaum, 2017). In a similar fashion, restaurants that have positive reviews can cooperate with rental car companies to create road trip guides containing information about good local restaurants.

The findings provide insight into the tradeoff between experience-based dining and convenience dining. Operators should focus on the complete dining experience and not just food and service quality. The restaurant’s ambience, décor, and layout are important components of customer satisfaction and likelihood to spread positive word-of-mouth (Han and Ryu, 2009). Beyond physical attributes, restaurants need to provide comprehensive culturally authentic dining experiences to appeal to target customers. Doing so will motivate customers to write reviews that highlight these factors, which in turn will attract new customers. Today’s generation of customers is likely to post on social media during the experience, which reaches a wider audience than traditional advertising. Nonetheless, restaurant operators can feature reviews that highlight the unique dining experience and social atmosphere to attract customers, such as Millennials, who desire experiential dining. To defend against Uber Eats and encourage people to drive farther, advertisements could be created that contrast the food delivery experience with the restaurant experience.

Limitations and future research
This research places emphasis on providing a theoretical understanding of consumers’ behavior by identifying causal effects of review valence and distance on consumer decisions. However, it does not address the process by which these effects occur. The findings can be advanced by applying a conceptual framework into which other theoretically meaningful variables are incorporated. For example, online reviews and distance may influence dining choices differently based on the consumers’ level of risk-aversion or novelty seeking. In addition, generational and cultural differences could influence the way in which the variables interact to affect outcomes. Research could be conducted to evaluate the moderating effect of psychological motivations and individual differences on the relationship among distance, customer reviews and dining decisions.

A hypothetical dining decision using scenarios was adopted to conduct the experiment. An experiment is appropriate because it maximizes internal validity by controlling other factors that may influence the outcome (Campbell and Stanley, 1973). However, the participants did not make an actual payment nor did they drive to the restaurant. Secondary
data from online reservation sites such as Open Table can be used to test how distance and review valence influence actual dining choice.

The sample was drawn from a survey panel and may not represent the population. It contained a disproportionate sample of females. However, all of the participants had read online restaurant reviews and could be considered typical customers. Moreover, research suggests that women are stronger decision makers in restaurant selection (Kim et al., 2010) and are more likely to read online reviews and trust them compared to men (Yoo and Gretzel, 2008). Future research should investigate this topic with other subject populations. For example, cultural differences could exist, as cultures vary in their degree of uncertainty avoidance (Litvin et al., 2004). Research indicates that there are cultural differences in susceptibility to online restaurant recommendations (Fan et al., 2018) as well as online eWOM intention (Wen et al., 2018).

This research considers distance and online review valence as two primary factors affecting dining choice. The use of online reviews is pervasive in restaurant selection. Distance matters because it requires time and physical effort. Moreover, both factors have theoretical significance. In experimental research, it is necessary to isolate the effects of a small number of variables to determine their causal relationships. There are many other factors that may influence dining decisions. For instance, price plays a critical role in restaurant selection. The scenarios used a particular restaurant type (American fusion) and did not specify the type of dining occasion. Like monetary price, the cost of a bad experience is higher for a special occasion such as a birthday or anniversary. Likewise, the risk-reward tradeoff could differ for a casual versus a fine dining restaurant. Research suggests that the psychological processes involved in dining intention vary by restaurant type (Jeong and Jang, 2018). Future restaurant studies may investigate whether the reverse-asymmetry effect is observed when the financial or psychological investment is increased.

The research questions can be investigated in the context of culinary tourism. Surveys of tourist populations are suggested to determine factors that contribute to food tourism. The effect of distance for tourists versus locals can be compared. Tourists have already traveled a considerable distance for their trip, so the effect of distance may be minimized compared to local diners. This introduces the concept of psychological versus physical distance, which would be an interesting theoretical question to investigate.

Traveling to find great dining experiences reflects reward-seeking behavior. This psychological phenomenon is an exception to the theory of risk-aversion, which has been a prevalent rationale for perceptions of gain and loss for decades (Shen et al., 2014). In that sense, this research provides new insight into the role of consumer science in hospitality and tourism. We hope this study triggers further exploration of the relationship between effort, risk and reward in decision making. When asking the question “How do online restaurant reviews influence reward-seeking?” further research will determine the length people will go for a great dining experience.

References


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