Platform Endorsements as Drivers of Consumer Behavior: A Quasi-Experimental Study Using Restaurant Review Data

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Abstract

This study investigates how platform endorsements influence consumer perceptions by examining their impact on perceived consumption values in the restaurant industry. Using the user-generated content (UGC) data from OpenTable, the study employs two quasi-experiments to assess the differential effects of platform endorsements depending on different cues: general cues and specific cues. Perceived consumption values were inductively derived by combining Latent Dirichlet Allocation (LDA) with sentiment analysis, and the difference-in-differences (DID) model was used to estimate causal effects. Results indicate that general endorsements significantly enhance conditional and emotional values. Additionally, specific endorsements with "Romantic" or "Scenic" cues, demonstrate a cue-to-value alignment by selectively influencing emotional and atmospherics quality values. In contrast, more objective values such as food and economic value show limited responsiveness. These findings highlight the importance of platform endorsements in shaping consumer attitudes and suggest that restaurants should strategically engage with these platforms to enhance business outcomes.

Keywords: third-party organization (TPO), platform endorsement, general cue, specific cue, user-generated content, quasi-experiment

1. Introduction

Service providers in the hospitality and restaurant industries have long relied on various channels to reduce information asymmetry and communicate product quality through traditional advertising (e.g., Kang & Namkung, 2016), social media (e.g., Kim & Stepchenkova, 2021; Lepkowska-White & Parson, 2019), and electronic word-of-mouth (eWOM) (e.g., Jeong & Jang, 2011). However, these approaches often face limitations due to exaggerated claims (Román et al., 2023) and information overload (Furner et al., 2016), both of which can hinder their effectiveness and increase consumer uncertainty during the decision-making process.

Restaurant platforms have emerged as influential third-party intermediaries, effectively connecting service providers with customers and offering quality assurance through curated endorsements (e.g., Charpin et al., 2021; Fang, 2022; Li & Wang, 2020). In the restaurant industry, these platforms have evolved beyond merely providing venues for information sharing; they now directly mediate transactions between customers and service providers. As influential and credible third-party organizations (TPOs), they provide endorsements, particularly in the form of comparative accolades such as "Top 100 Best Restaurants" or "Top 100 Most Romantic Restaurants." Such endorsements can act as cues for product quality, helping restaurants—particularly small and medium-sized ones—mitigate information asymmetry and reduce customers' search costs during the purchase decision process.

Despite the growing role of these platforms in the restaurant industry, it is uncertain whether these endorsements significantly influence customer perceptions. While prior studies have examined TPOs like the Michelin Guide (e.g., Bang et al., 2022) or celebrity endorsements (e.g., Magnini et al., 2010), the former is typically associated with luxury consumption (Liu et al., 2022), and the latter is predominantly available to large chain

restaurants (Magnini et al., 2010), limiting their applicability (Lepkowska-White & Parson, 2019). Given the distinct role of platforms as both intermediaries and market participants, how platform endorsements influence consumer perception requires further exploration. This raises the primary research question: ***Is platform endorsement an effective stimulus for consumer perception?***

Furthermore, the effect of platform endorsements is not straightforward; it may vary depending on how the cues embedded in the endorsement message are framed (Beldad et al., 2020). For example, endorsements presented as comparative accolades often contain thematic keywords—such as "Top 100 Most Romantic Restaurants," "Top 50 Best Restaurants for Valentine's Day," or "Top 50 Best Restaurants for Date Night"—that convey specific consumption contexts. These context-specific cues may trigger particular dimensions of perceived consumption value, thereby leading to differentiated consumer responses. Based on this idea, the study also explores a secondary research question: ***Does the effectiveness of platform endorsements depend on the nature of the cues conveyed?***

To address the research questions, this study investigates how platform endorsements influence customer perceptions, with a particular focus on perceived consumption values—recognized as key antecedents of consumer decision-making (Sánchez-Fernández et al., 2009; Sheth et al., 1991; Teng & Chang, 2013). Specifically, the study employs a quasi-experimental design and conducts two separate experiments to examine how platform endorsements affect consumption values depending on the nature of the cues conveyed. Experiment 1 examines the effects of endorsements that convey general cues without specific contextual framing, while Experiment 2 focuses on the effects of endorsements that include specific thematic cues.

To implement experiments, the study utilizes user-generated content (UGC) from OpenTable, a popular restaurant reservation platform. The UGC data enables longitudinal

analysis, as customer reviews are recorded over time at the restaurant level, allowing for the assessment of shifts in perceived consumption values before and after platform endorsements (Bang et al., 2022). Given the textual and rating-based nature of the data, the study adopts an inductive approach to identify key consumption value dimensions and quantify their perceived intensity by combining Latent Dirichlet Allocation (LDA) with sentiment analysis. Individual-level perceived consumption values are calculated by integrating the topic probabilities derived from LDA with sentiment weights assigned to each word in a review and are then aggregated at the restaurant-month level to construct a panel dataset for causal analysis. The platform endorsement effects on consumption values are estimated using the difference-in-differences (DID) method, an econometric technique designed for causal inference in quasi-experimental settings.

The key contribution of this study is twofold: it empirically validates platform endorsements as effective signals that shape consumer perception, and it highlights the heterogeneous effects of endorsements depending on the specificity and nature of the cues embedded in the endorsement message.

2. Theoretical background

2.1. Information asymmetry and third-party organization (TPO)

Information asymmetry arises when there is a disparity in the information held by service providers and consumers, particularly regarding amount or quality of information available during a transaction (Connelly et al., 2011; Nian & Sundararajan, 2022). In the restaurant industry, this asymmetry manifests as customers often face uncertainty regarding the quality of food, service, and the overall dining experience prior to visiting a restaurant (Byun

et al., 2019; Jun et al., 2017). The problem is further exacerbated by the predominance of small and medium-sized businesses in the industry (Parsa et al., 2015), which often lack sufficient resources to effectively communicate their value to potential customers (Lepkowska-White, 2017).

To mitigate this imbalance, an increasing number of restaurants have relied on various online communication channels, such as official websites, advertisements, social media, and eWOM (e.g., Fox & Longart, 2016; Kang & Namkung, 2016; Kim & Stepchenkova, 2021; Lepkowska-White & Parson, 2019). However, these channels often suffer from exaggerated information and information overload, resulting in decision-making inefficiencies, including adverse selection and increased consumer skepticism (e.g., Baker & Kim, 2019; Furner et al., 2016; Hlee et al., 2021; Kim et al., 2019; Li, 2017; Román et al., 2023). As a result, consumers may question the authenticity of the information provided by restaurants and struggle to evaluate true service quality (Kim et al., 2019; Munir et al., 2017; Zhang et al., 2021).

In this context, third-party organizations (TPOs) play a critical role in bridging the information gap. Acting as credible intermediaries, TPOs can reduce consumer uncertainty by providing independent assessments of quality, thereby lowering search costs and perceived risk (Biglaiser & Friedman, 1994). In experiential service sectors like the restaurant industry, where credible evidence is often lacking before consumption, customers especially rely on the opinions of external experts rather than information directly from service providers (Gergaud et al., 2015). TPO endorsements, which involve trustworthy external evaluations of product or service quality, serve as effective signals of unobservable attributes such as performance, reliability, and durability (Dean & Biswas, 2001; Lamin & Livanis, 2020).

These endorsements can typically take three forms: comparative rankings, non-comparative statements, and certification or seal of approval (Beldad et al., 2020; Dean &

Biswas, 2001). Comparative endorsements indicate that the product is ranked against competing products based on various criteria, exemplified by J. D. Power's Best Car Ratings, Interbrand's Best Global Brands, and Entrepreneur's Franchise 500 Ranking (Balasubramanian et al., 2005). Conversely, non-comparative endorsements consist of subjective statements made by the TPO about one or more attributes of the product without direct comparisons to others. Celebrity or influencer endorsements used for marketing purposes are a typical example of this category (e.g., Huo et al., 2022; Magnini et al., 2010; Schouten et al., 2021). The final form of TPO endorsement involves awarding a "seal" of approval by a third-party organization, exemplified by the Michelin Guide (e.g., Bang et al., 2022; Daries et al., 2021; Gergaud et al., 2015) or certificate logos (e.g., Drexler et al., 2018; Janssen & Hamm, 2012; Yuan et al., 2020).

Table 1 summarizes key aspects of representative studies on TPO endorsements, including the type of endorser, outcome variables, endorsement format, and research methods. Notably, most existing studies focus on either certification-based or non-comparative endorsement types. In contrast, comparative endorsements—such as "Top 10" or "Top 100" rankings—have received limited empirical attention, despite their growing presence on digital platforms. While the so-called *"*Top-Ten Effect*"* has been recognized in consumer behavior research (e.g., Isaac & Schindler, 2014), its causal influence on consumer perception or business performance remains underexplored in service contexts. This gap hinders a comprehensive understanding of whether TPO endorsements exert consistent effects across different endorsement formats.

[Table 1 around here]

2.2. Platform endorsement as a stimulus

Platforms have recently emerged as critical third-party organizations (TPOs) in the restaurant business ecosystem (e.g., Charpin et al., 2021; Fang, 2022; Li & Wang, 2020). Initially, these platforms focused on providing venues for information sharing or eWOM, but some platforms, such as Uber Eats and OpenTable, have expanded their functions to include transactional functions like reservation and delivery services (Alt, 2021). This transformation positions platforms as unique TPOs that not only disseminate information but also mediate customer-provider relationships directly. Unlike traditional TPOs such as guidebooks or celebrity endorsers, restaurant platforms uniquely operate as both information curators and facilitators of transactions, bridging the gap between consumers and service providers.

In the hospitality industry, the so-called "billboard effect" is well recognized—that is, being listed on a platform itself generates substantial marketing benefits for hotels or restaurants (e.g., Anderson, 2011). However, as platform listing has become a standard practice across businesses regardless of size, the effectiveness of mere presence on a platform has diminished. Moreover, platforms may also exacerbate information asymmetry, as they have privileged access to real-time supply and demand information across markets, while restaurants and customers do not. To address this, many platforms offer endorsements in the form of comparative rankings (e.g., "Top 100 Best Restaurants") based on prior customer reviews and ratings. For example, TripAdvisor provides rankings of the best restaurants regionally, considering factors like quality, recency, and the quantity of user reviews (Ganzaroli et al., 2017). Additionally, OpenTable regularly publishes nationwide lists of the best restaurants for various contexts, such as "Top 100 Most Romantic Restaurants" or "Top 100 Most Scenic Restaurants." These rankings inform both restaurants about their competitive position and customers about restaurant quality.

While the specific algorithms behind these endorsements remain opaque, platforms like TripAdvisor and OpenTable fundamentally rely on customer reviews and ratings written by prior users (Ganzaroli et al., 2017; Jaecle & Carter, 2011). Thus, platform endorsements can be viewed as a curated and aggregated form of eWOM. From a signaling theory perspective, these endorsements function as market-based reputation mechanisms that reduce customers' search costs, minimize the risk of adverse selection, and align pre-visit expectations with actual consumption experiences (Hong & Pittman, 2020). Accordingly, in line with the primary research question, it is hypothesized that platform endorsements can effectively shape consumer perceptions.

However, despite the growing influence of restaurant platforms as credible TPOs, the effects of platform endorsements as stimuli for customers have remained underexplored. Existing literature on TPO endorsements in the restaurant industry has primarily focused on non-comparative endorsement, such as celebrity endorsements (e.g., Magnini et al., 2010; Yang, 2018) and a certificate format endorsement, such as the Michelin Guide (e.g., Bang et al., 2022; Daries et al., 2021; Gergaud et al., 2015) and certificate logos (e.g., Jun et al., 2017; Sparks et al., 2013). However, these forms of endorsement are generally accessible only to restaurants with substantial resources (Magnini et al., 2010). Moreover, Michelin-starred restaurants typically cater to niche, high-end markets and are more closely associated with luxury consumption (Castillo-Manzano & Zarzoso, 2023; Liu et al., 2022). Consequently, these types of endorsements may not be suitable for a broader set of restaurant businesses, which are predominantly small and medium-sized individual establishments (Lepkowska-White & Parson, 2019). Furthermore, much of the research on restaurant platforms has focused on the effects of eWOM on financial performance (e.g., Abdullah et al., 2022; Sayfuddin & Chen, 2021; Wang et al., 2021) and behavioral intentions (e.g., Ladhari & Michaud, 2015; Yoon et

al., 2019), without explicitly examining how platform endorsements shape consumer perceptions over time.

An additional limitation of prior research is its methodological reliance on scenario-based surveys. While useful for capturing stated preferences, such surveys are inherently cross-sectional and thus limited in their ability to examine changes in consumer perception before and after endorsement. Thus, longitudinal effects, which are central to evaluating the causal impact of endorsements, remain largely underexplored.

2.3. Persuasion cues

Persuasion cues refer to the signals or pieces of information that consumers use to assess the value of a product, service, or brand. According to the Elaboration Likelihood Model (ELM), persuasive communication typically operates through two cognitive routes: the central route, which involves careful and deliberate evaluation of message content, and the peripheral route, which relies on heuristic or surface-level cues (Petty & Cacioppo, 2012). Peripheral cues involve less effortful, heuristic processing, while central cues require deeper cognitive effort (Zhu et al., 2014). Consumers often begin with peripheral cues, especially under conditions of low involvement or limited cognitive resources, and may shift to central cues if further elaboration is needed (Mousavizadeh et al., 2022).

In the context of restaurant platforms, general endorsements, such as “Top 100 Restaurants,” often function as peripheral cues. These signals offer low-effort heuristics that can quickly shape consumer attitudes and behavioral intentions without demanding significant cognitive elaboration (Guan & Lala, 2017). Their effectiveness lies in their simplicity and their alignment with affective or intuitive processing. However, when endorsements are paired with specific contextual cues—for example, “Top 100 Romantic Restaurants” or “Top 100

Restaurants for Valentine's Day"—they require greater cognitive engagement to interpret the relevance and value of the information. These more elaborative cues resemble central-route processing, wherein consumers evaluate how well the endorsed restaurants match their consumption goals, such as romantic ambiance or seasonal appropriateness (Chang & Thorson, 2023; Beldad et al., 2020).

The specificity of cues plays a critical role in enhancing message relevance and facilitating preference-congruent matching between consumers and services (Li et al., 2019). From this perspective, highly specific cues may reduce ambiguity and increase persuasion effectiveness by clarifying the type of value the restaurant is expected to deliver, which suggests that messages are more persuasive when cues match consumers' preexisting expectations or situational needs (Beldad et al., 2020). Building on this conceptual framework—and in direct relation to the second research question—this study hypothesizes that the effect of platform endorsements on consumer perceptions varies according to the specificity of the embedded cues.

Despite these theoretical foundations, empirical evidence on how the specificity of cues moderates the effectiveness of platform-based endorsements remains limited. While several studies have compared features of cues on consumer attitudes (e.g., Kim & Jang, 2019; Song et al., 2023), they primarily focused on design perspectives, rather than how the semantic framing of endorsements (i.e., cue specificity) influences perceived consumption values (i.e., cue specificity). This study addresses this gap by distinguishing between general and specific platform endorsements and examining how these variations in cue framing influence different dimensions of consumption value.

3. Methods

3.1. Data collection

This study utilized user-generated content (UGC) collected from OpenTable, a global online restaurant reservation platform, to measure perceived consumption values. OpenTable only allows customers who have made actual reservations through their platform to write reviews, minimizing the potential bias from false reviews. The data consists of both restaurant-level and individual reviewer-level information. The restaurant-level data includes operational details such as cuisine type, price range, and location, while the reviewer-level data includes information such as the reviewer's nickname, region, dining date, ratings (1-5 stars), and textual content.

The sample comprises restaurants featured in OpenTable's regular endorsement announcements between 2015 and 2021 to ensure a sufficient observation period for post-listing reviews. To avoid cross-national bias, the sample was limited to restaurants located in the United States. The 2015–2021 window was chosen to ensure an adequate post-endorsement observation period for tracking shifts in review content over time.

From the initially identified set of restaurants featured in OpenTable endorsement lists during the target period, the study excluded those that had permanently closed, discontinued reservation services through OpenTable, or had accumulated fewer than 2,000 reviews by January 2023. The review-count threshold was applied to ensure the reliability of measuring temporal changes in consumption values before and after endorsement at the restaurant level. Given that the study employs a quasi-experimental design based on longitudinal comparisons, a sufficient volume of reviews per restaurant is critical for statistical stability and interpretive validity.

Next, the study constructed a control group of restaurants not featured in OpenTable's

endorsement announcements during the same period. To enhance comparability and reduce potential selection bias, control restaurants were manually matched to treatment restaurants on a one-to-one basis using four criteria: similarity in cuisine type, comparable price range, proximity in location, and overlapping operational periods. After excluding treatment restaurants for which no suitable control match could be identified, the final sample consists of 233 treatment group restaurants and 233 control group restaurants, totaling 466 restaurants.

3.2. Treatment assignment: General endorsement and specific endorsement

The primary aim of this study is to examine how platform endorsements affect consumers' perceptions of consumption value. However, examining the causal effect of platform endorsement is complicated by potential confounding factors. To address this challenge, the study employs a quasi-experimental design using UGC data. Platform endorsement is operationalized as a restaurant's inclusion in any of OpenTable's featured announcement lists released between 2015 and 2021.

The study categorizes endorsements into two types based on the nature of the cues provided: general endorsements and specific endorsements. General endorsements include listings such as "*Top 100 Best Restaurants*," "*Top 100 Hot Spot Restaurants*," and "*Top 100 Neighborhood Gems*." These lists recognize restaurants without offering specific thematic context, thus serving as general quality signals. By contrast, specific endorsements emphasize more targeted dining experiences and are identified by thematic cues such as "*Top 100 Most Romantic Restaurants*," "*Top 100 Most Scenic Restaurants*," and "*Top 100 Best Restaurants for Foodies*."

To examine the differential impact of these two types of endorsements, the study implements two separate experimental designs. Experiment 1 evaluates the effects of general

endorsements on perceived consumption values. In this experiment, the treatment group consists of restaurants featured in general endorsement lists, while the control group includes matched restaurants not featured during the same endorsement windows.

Experiment 2 validates the effects of endorsements with specific cues on consumption values. In this case, treatment restaurants are those listed in themed announcements (e.g., *"Romantic," "Scenic," "Foodie"*), while control restaurants are matched counterparts not listed in these announcements. Control timeframes are aligned with treatment group endorsements to mitigate temporal confounding.

3.3. Perceived consumption values measured using user-generated content (UGC)

This study employs an inductive approach to measure perceived consumption values using UGC. Given the nature of the inductive approach, it is essential to capture the dimensions of consumption values as perceived by customers and to quantify how positively or negatively customers perceive these values based on their experiences. To address these two components, this study combines Latent Dirichlet Allocation (LDA)—an unsupervised probabilistic model for topic modeling—with sentiment analysis.

First, to uncover latent topics aligned with consumption value dimensions, LDA was applied to the review corpus, resulting in the identification of 30 distinct topics. The optimal number of topics was determined using coherence scores, which assess the semantic similarity among keywords within each topic (Chang et al., 2009). Each topic was characterized by its top keywords —ranked by their occurrence probability within the topic—and interpreted based on the recurring semantic patterns those keywords represent.

While each topic exhibited unique content, several topics still revealed conceptual similarities. For example, one topic included terms like "reservation," "table," "waiting," and

"minute," while another was characterized by words such as "server," "staff," "waiter," and "welcoming." Although these sets of keywords appeared in different topics, both reflect consumer perceptions of "service quality." In such cases, conceptually related topics were grouped under a broader consumption value dimension.

To ensure theoretical alignment, the 30 topics were systematically recategorized into six overarching dimensions of consumption value by cross-referencing keywords with established frameworks from prior literature (Chakraborty et al., 2022; Ha & Jang, 2012; Holbrook, 2002; Lee et al., 2015; Sheth et al., 1991; Yang & Mattila, 2016).

As illustrated in Table 2, the six consumption values identified in this study are conditional value, emotional value, economic value, and three types of quality value: food quality, service quality, and atmospherics quality. Conditional value refers to the utility perceived by customers based on specific situational or contextual factors, such as time, location, and social setting (Sheth et al., 1991). Emotional value, as defined by Sheth et al. (1991), captures the perceived utility linked to subjective feelings or affective responses; it includes emotional connection, satisfaction, enjoyment, and pleasure derived from the dining experience (Ha & Jang, 2012; Sweeney & Soutar, 2001). Economic value, drawing from Holbrook's (2002) typology, refers to the perceived efficiency or usefulness of a consumption experience relative to its cost, emphasizing instrumental benefits.

Functional value relates to the tangible and utilitarian aspects of a service or product, which are often recognized through attributes such as quality, durability, reliability, and convenience (Sheth et al., 1991). In the context of restaurant consumption, quality-related components—particularly those associated with food, service, and atmosphere—are especially salient in shaping consumer experience and satisfaction (Ha & Jang, 2012; Jeong & Jang, 2011; Yang & Mattila, 2016). As many reviews directly reflected these quality-related evaluations,

the study further distinguished three specific dimensions of quality value: food quality, service quality, and atmospherics quality.

[Table 2 around here]

Next, sentiment analysis was conducted to assign sentiment weights to each word, using review texts and rating scores. Since the pre-built or commercial sentiment dictionaries are generally based on the common context regardless of restaurant contexts, the sentiment sometimes is mismatched with true contexts. Thus, the study built its own sentiment dictionary using a machine-learning approach based on the data used. Star ratings (ranging from 1 to 5) were converted into a binary sentiment variable: ratings of 5 were coded as positive sentiment (=1), while ratings from 1 to 3 were coded as negative sentiment (=0). Reviews with a 4-star rating were excluded to sharpen the polarity of the sentiment classification, which has been widely adopted in prior research (e.g., Bang et al., 2022). Using the words within each review as predictors and the binary sentiment as the dependent variable, a penalized logistic regression model was estimated. The resulting word coefficients from the model were defined as sentiment weights. Table 3 presents the top ten positive and negative sentiment words based on the estimated coefficients.

Notably, since the sentiment weights were derived from data specific to this study, some results differ from those produced by conventional sentiment dictionaries, which are typically based on general language contexts. For example, the word “skeptical,” while generally considered negative, was estimated in this study as a highly positive word. This discrepancy arises because, in this dataset, “skeptical” is often used to express unexpectedly positive experiences. In fact, over 93% of reviews containing the term “skeptical” received 4

or 5 stars. Examples from the data include:

- *"I have been here a few times before and wanted my husband to experience it also. It was our anniversary and he was **skeptical** of the place since it was a place he had never been before. By the time we left he was hooked. He loved every aspect and so did I…"*
- *"Excellent service. I read the reviews and was a little **skeptical** about people saying it was pricey.....but it was not that bad…"*
- *"…I am a pretty **skeptical** and critical person & reviewer, but this place never disappoints…"*

[Table 3 around here]

Finally, to capture both the semantic association of words with each consumption value dimension and the magnitude of emotional tone embedded in the review text, this study employs the composite measure proposed by Bang et al. (2022) and Bang & Jang (2024). Let $CV_i^{(k)}$ denote the perceived consumption value of reviewer i for the k-th consumption value dimension. It is calculated by integrating the topic probabilities derived from LDA with the sentiment weights assigned to relevant keywords, as shown in Equation (1):

$$CV_i^{(k)} = \sum_{s \in S_k} \sum_{w \in W_s} [\varphi(w|s) \cdot \theta_w \cdot n_{wi}] * 100\,, \quad k = 1, \dots, 6 \tag{1}$$

where $\varphi(w|s)$ denotes the occurrence probability of word w given topic s, θ_w denotes the sentiment weight of word w, and $n_{w,i}$ denotes the occurrence frequency of word w. S_k denotes the set of topics representing the k-th consumption value dimension, and W_s denotes the set of top keywords representing the topic s. Additionally, the final value is multiplied by 100 to prevent numerical underflow caused by the multiplication of small probabilities and sentiment weights.

3.4. Difference-in-Differences (DID) model

After measuring six perceived consumption values at the individual level, the study aggregated these into monthly restaurant-level averages. Specifically, for each restaurant r and month t, the consumption value was calculated as the arithmetic mean of all corresponding individual values as follows:

$$CV_{rt}^{(k)} = \frac{1}{N_{rt}} \sum_{i \in \mathcal{I}_{rt}} CV_i^{(k)} \quad (2)$$

where $CV_i^{(k)}$ represents the k-th consumption value for review i, $\mathcal{I}_{rt}$ is the set of reviews written for restaurant r in month t, and N_{rt} is the number of corresponding reviews.

To examine the causal effect of platform endorsement on consumption values, this study utilizes DID approach within a quasi-experimental framework. The DID approach is widely used for its ability to isolate pure treatment effects by controlling for unobserved time-invariant heterogeneity and common time shocks (Bang *et al.*, 2022; Hwang & Park, 2016; Park *et al.*, 2021). As illustrated in Figure 1, this approach estimates the treatment effect by comparing the difference in outcome trends before and after treatment between the treatment group (endorsed restaurants) and the control group (non-endorsed restaurants). To ensure valid comparisons, the control group's timeline must be aligned with the endorsement window of its matched treatment group counterpart.

[Figure 1 around here]

Let $CV_{rt}^{(k)}$ denote the k-th perceived consumption value among six consumption value dimensions for restaurant r at time t. Then, the DID model can be expressed as follows:

$$CV_{rt}^{(k)} = \alpha_r + \beta_t + \gamma \cdot TG_r \cdot AE_t + \eta \cdot UEMP_{rt} + \varepsilon_{rt}, \qquad k = 1,2,\dots,6, \tag{3}$$

where TG_r is a binary indicator for treatment assignment, which is equal to 1 if restaurant r belongs to the treatment group and equal to 0 otherwise. AE_t denotes the timing of the endorsement, which is equal to 1 if restaurant r is endorsed at time t and equal to 0 otherwise. α_r denotes the restaurant fixed effect, β_t denotes the time fixed effect to control temporal effects, γ denotes the DID coefficient capturing the endorsement effect. To control local macroeconomic conditions, the model includes the state-level monthly unemployment rate, denoted by $UEMP_{rt}$, as an additional covariate. Finally, ε_{rt} denotes the random error term.

Meanwhile, as illustrated in Figure 1, a key identification assumption underlying DID estimation is the parallel trends assumption, which posits that the pre-treatment outcomes of the treatment and control groups evolve similarly (White & Sabarwal, 2014). To assess the parallel trend assumption, this study further examines whether the pre-endorsement differences in consumption values between the groups exhibit systematic trends. If the pre-endorsement differences exhibit upward or downward trends over time, the causal effects of endorsements may be compromised, even if the estimate is statistically significant.

4. Effects of platform endorsements

4.1. Descriptive information: matching treatment and control groups

To ensure that each review contains sufficient information on perceived consumption values across multiple dimensions, this study included only reviews featuring more than 20 words to allow for meaningful contextual interpretation for each review. Furthermore, to control exogenous factors, the study primarily focuses on data from 36 months before and after endorsement for Experiments 1 and 2.

Table 4 presents the descriptive information for each experiment. In Experiment 1,

which estimates the effect of platform endorsement with general cues on consumption values, the dataset consists of 232 restaurants, with 116 restaurants in each group, and approximately 410,000 reviews. The data for Experiment 2, which estimates the effect of platform endorsement with context-specific cues, includes 154 treatment group restaurants and 154 control group restaurants, with over 572,000 reviews. It is notable that the average number of reviews per restaurant and the average rating scores are higher in the treatment group than in the control group. This intrinsic difference between the two groups supports the rationale for using the DID approach, as it can effectively control for intrinsic differences between the two groups.

[Table 4 around here]

4.2. Experiment 1: Endorsement effect with general cues

This study first investigated the effect of platform endorsement with general cues. Figure 2 illustrates the dynamic trends of all consumption values across both groups over time. On average, five out of the six consumption values, excluding economic value, show distinct differences between the two groups, consistently presenting higher values over time in the treatment group. Specifically, conditional value, emotional value, and food quality value display significantly higher values in the treatment group, regardless of the endorsement. Although the differences in quality values related to service and atmospherics between the two groups become smaller after the endorsement, they generally exhibit higher values over time. However, it remains unclear whether the endorsement directly affects changes in consumption values in the treatment group, as Figure 2 illustrates the average trend across all restaurants in each group.

[Figure 2 around here]

Table 5 presents the estimation results of endorsement effects with general cues on consumption values. Platform endorsement significantly influenced increases in perceived consumption values, particularly with respect to conditional value ($\gamma = 0.121;\ p < 0.01$) and emotional value ($\gamma = 0.066;\ p < 0.05$). Furthermore, the results of the parallel trend test for all consumption values indicate no significant temporal trends. This suggests that all consumption values meet the parallel trend assumption before the endorsement, supporting the positive effect of platform endorsement with general cues on conditional and emotional values.

[Table 5 around here]

4.3. Experiment 2: Endorsement effect with specific cues

In Experiment 2, this study investigated the platform endorsement effect with specific cues, proxied by three thematic keywords in the platform's announcement: "Romantic," "Scenic," and "Foodie." First, as shown in Figure 3, all consumption values exhibit consistently higher values on average in the treatment group both before and after platform endorsement. Five out of the six consumption values, excluding the economic value, show increasing gaps in average consumption values between the two groups after platform endorsement. However, only the emotional value ($\gamma = 0.102;\ p < 0.05$), which is closely related to the keyword "Romantic," was significantly affected by the platform endorsement with a specific cue (See Table 6). Meanwhile, all the consumption values except for the food quality value satisfy the parallel trend assumption.

[Figure 3 around here]

[Table 6 around here]

Next, the dynamic trends of consumption values in the experiment regarding the cue "Scenic" show mixed results: conditional value and food quality value show higher values in the treatment group both before and after endorsement; economic value and quality value regarding atmospherics show lower values in the treatment group; and the emotional value and service quality value appear to have no distinct gap between the two groups, providing no evidence of the endorsement effect. The estimation results of empirical models presented in Table 6 indicate that platform endorsement significantly affects two quality values: service quality ($\gamma = 0.084;\ p < 0.1$), and atmospherics quality ($\gamma = 0.111;\ p < 0.01$). However, due to the presence of a statistically non-parallel pre-treatment trend in service quality and the marginal level of significance, only the atmospherics quality can be interpreted as being meaningfully influenced by the endorsement.

[Figure 4 around here]

Lastly, as shown in Figure 5, five out of the six consumption values, excluding economic value, indicate higher values in the treatment group, and the gaps in those consumption values between the treatment and control groups appear to increase after the platform endorsement. However, the estimation results for empirical models show no significant endorsement effects for all consumption values. This implies that the specific cues with the keyword "Foodie" may not effectively stimulate consumers in terms of their

consumption values.

[Figure 5 around here]

4.4. Robustness check: endorsement effect across different windows

While two quasi-experiments confirmed significant effects of platform endorsement with general cues and specific cues on consumption values, it remains unclear whether these effects are transient or sustained over time. To evaluate the temporal robustness of these effects, this study further investigated whether the endorsement effects vary across different comparison windows. Specifically, the study compared results across five symmetric time windows—12, 24, 36 (baseline), 48, and 60 months before and after endorsement.

Figure 6 presents coefficient plots of the estimated endorsement effects across these time windows. For general endorsements, the effects on conditional value and all three quality-related consumption values (food, service, and atmospherics) are statistically significant in the short term (e.g., 12 months). However, as the observation window expands, the effects on quality values diminish and eventually become statistically insignificant, while the effect on conditional value remains consistently robust across all time windows. Interestingly, the effect on emotional value becomes statistically significant in longer windows, suggesting that general endorsements may lead to enduring shifts in emotional perceptions. These results imply that while general endorsements primarily enhance quality perceptions in the short term, they also foster longer-term improvements in conditional and emotional values.

By contrast, endorsements with specific cues exhibit a distinct pattern. In the short-term window (12 months), some of these cues appear to negatively affect certain consumption values. However, these negative effects diminish as the comparison window expands. For the

"Romantic" cue, longer windows show increasingly strong and statistically significant improvements in emotional value, aligning with the affective nature of the cue. The "Scenic" cue exhibits sustained, significant effects on atmospherics quality. Although service quality also shows a statistically significant effect, the parallel trends assumption was violated—consistent with the baseline (36-month) model—thus limiting causal interpretation. For the "Foodie" cue, most consumption values remain unaffected across all time windows. An exception arises in the 60-month comparison, where emotional value shows a statistically significant increase. However, the effect size is relatively small, and given its delayed emergence without a clear trend across time, it is difficult to interpret this as a robust or meaningful endorsement effect.

[Figure 6 around here]

5. Discussion and conclusions

5.1. Discussion

This study examined whether platform endorsements—offered by restaurant platforms acting as third-party organizations (TPOs)—can enhance perceived consumption values. While previous studies have primarily focused on the role of TPOs in certifying product quality in consumer goods markets (e.g., Mineo, 2019; Tkaczyk & Świeboda, 2019), empirical evidence in the service sector, particularly in restaurants, remains limited. To address this gap, this study employed user-generated content (UGC)-based quasi-experiments to isolate and evaluate the influence of platform endorsements on various dimensions of consumption value.

The findings from the two experiments collectively demonstrate that platform endorsements function as effective persuasive stimuli. However, their influence varies

depending on the specificity of the cues embedded in the endorsement and the temporal context in which they are received. In Experiment 1, general endorsements significantly increased perceived conditional and emotional values. This suggests that endorsements without specific thematic framing can enhance experiential or contextual perceptions (e.g., appropriateness for a special occasion or overall enjoyment). These results suggest that even non-specific, heuristic cues can positively shape consumer perceptions, particularly in contexts where consumers face information asymmetry or decision fatigue (Petty & Cacioppo, 2012; Furner et al., 2016).

Importantly, the effects of general endorsements on conditional value remain robust across multiple time windows, supporting their temporal stability. This suggests that once a restaurant receives a general endorsement, the associated perceived value persists over time, making such endorsements especially effective for sustaining customer perception. It is notable that the effect on emotional value, while also significant, was more gradual and became more pronounced over time. This gradual effect may reflect the intrinsic nature of emotional value—a form of internal, affect-driven motivation—compared to conditional value, which is more extrinsically determined (Holbrook, 2002). Intrinsic perceptions such as hedonic satisfaction may take longer to form or adjust, suggesting that emotional value is more likely to shift as consumers repeatedly encounter or reflect upon endorsed restaurants over time (Bang et al., 2022).

In Experiment 2, endorsements with specific persuasive cues—such as “Romantic” or “Scenic”—exhibited strong alignment with associated consumption values. The “Romantic” cue significantly influenced emotional value, indicating that thematically relevant endorsements can effectively shape affective expectations when aligned with the intended occasion. Similarly, the “Scenic” cue positively influenced atmosphere quality value, suggesting that visual or ambiance-related endorsements can influence perceptions of sensory

or environmental attributes. These findings are consistent with the Elaboration Likelihood Model and congruity theory, where specific, goal-congruent cues can stimulate deeper cognitive processing and increase persuasion effectiveness (Zhu et al., 2014; Li et al., 2019). Moreover, this cue-to-value alignment became more salient over time, underscoring the enduring influence of platform endorsements. The enhancement in emotional value driven by "Romantic" cue grew stronger over time, which also reinforce the idea regarding the intrinsic nature of emotional value.

In contrast, the cue "Foodie" did not significantly affect any consumption value dimension. This null finding does not imply that food-related attributes are unimportant. Instead, given the quasi-experimental design based on the DID framework, the insignificant coefficient indicates that there were no meaningful incremental effects for the treatment group relative to the matched control group. The lack of additional impact from the "Foodie" cue may suggest a saturation effect, where food-related perceptions may already be well-established through other sources of information such as menus, photos, or prior customer reviews. Moreover, for highly involved consumers who engage with platforms to reserve and review restaurants, food quality tends to be a baseline expectation rather than a differentiating factor that can be further influenced by additional endorsement cues (Jeong & Jang, 2011). Thus, the "Foodie" cue may not provide incremental value beyond what consumers already know or expect.

These patterns indicate that platform endorsements operate primarily as symbolic or heuristic signals, shaping subjective perceptions like emotional and conditional value, rather than objective ones like food or economic value, despite their fundamental importance in the restaurant business. Objective attributes may be more readily evaluated through observable or structured information (e.g., pricing, menu offerings), making them less susceptible to

incremental shifts from endorsement cues. In contrast, subjective, experiential, and context-dependent dimensions—such as mood enhancement or occasion appropriateness—are less easily assessed in advance and thus benefit more from credible external validation (Maehle et al., 2015; Namkung & Jang, 2007).

In summary, this study underscores the persuasive and symbolic value of platform endorsements in shaping restaurant consumption experiences. Importantly, these findings do not suggest that certain consumption values (e.g., emotional or conditional) are more important than others. All six consumption values remain critical drivers of consumer decision-making and behavioral intent. Rather, the key takeaway is that platform endorsements—as external cues introduced into a noisy digital environment—are particularly effective in shifting perceptions of values that are subjective, contextual, and otherwise hard to evaluate. By illustrating how different cue types influence specific value dimensions over time, this study contributes to both the TPO signaling literature and persuasion theory within hospitality research.

5.2. Theoretical implications

This study makes a significant contribution to the literature on the critical role of platforms as influential third-party organizations and their endorsement effect on customer values. First, it demonstrates the effectiveness of utilizing user-generated content (UGC), a form of big data (Lu & Stepchenkova, 2015), to investigate the causal effect of stimuli in consumer behavior research. While consumption values are key drivers of consumer decision-making, measuring these values longitudinally at the restaurant level poses challenges when using traditional survey-based approaches. Furthermore, the causal effects of stimuli, such as platform endorsements explored in this study, on customer perceptions or attitudes from a

dynamic perspective have rarely been investigated due to limited methodological approaches. The longitudinal nature of UGC proved effective for causal inference by combining big data with the difference-in-differences (DID) approach, an econometric method that achieves methodological rigor and adds new value to the literature.

Second, this study highlights the significant role of platform endorsements as effective stimuli that shape customer perceptions and attitudes, extending the stimuli–organism–response (SOR) framework into the platform-based business landscape. Although platform endorsements may not directly imply improvements in objective qualities—such as food, service, and the physical environment—consumption values were significantly enhanced, indicating that platform endorsements effectively stimulate customer perceptions regardless of actual quality changes. From the SOR framework, the positive link between stimuli and individual consumption values could lead to behavioral responses, such as revisits or recommendations, ultimately affecting overall restaurant performance (Chao et al., 2021; Gu et al., 2021). Therefore, it can be reasonably assumed that, given its effective role as a stimulus, platform endorsement could contribute to the business performance of small and individual restaurants, despite the lack of direct empirical evidence in this study.

Third, this study demonstrates that the effectiveness of platform endorsements varies depending on the textual specificity of the cues embedded in endorsement messages. Prior research in marketing communication has long emphasized the importance of specificity in conveying product values (Feldman et al., 2006; Roberson et al., 2005; Pérez et al., 2020). The findings confirm this established theory by demonstrating that specific cues conveyed through particular keywords effectively stimulate consumption values associated with those keywords. For example, platform endorsements featuring the keyword “Romantic” significantly enhanced emotional value, while endorsements with the keyword “Scenic” improved atmospherics

quality value, a dimension often associated with tangible and visual aspects in service settings. This cue-to-value alignment provides empirical support for congruity theory within digital platform environments, which holds that persuasive effectiveness increases when message content aligns with consumers' goals, expectations, or situational needs.

Finally, the positive effects of platform endorsements on enhancing customers' consumption values underscore the need to carefully consider the role that platforms play in the restaurant industry. As restaurants increasingly rely on digital channels, such as reservation platforms, to facilitate transactions between customers and service providers (Evans and Schmalensee, 2013), these platforms have gained substantial influence. However, since switching from one platform to another can be costly, restaurants may become locked into a particular platform, reinforcing the dominant positions of these platforms (Mishustina et al., 2022). This dominance amplifies the impact of platform endorsements on both consumer decision-making processes and restaurant performance. Furthermore, given the significant role that platforms hold in the restaurant business, their direct engagement as intermediaries in the relationship between customers and restaurants could be perceived as unfair by establishments that are not endorsed, potentially disrupting fair competition within the industry. This highlights the necessity for a fair engagement model to define the optimal role of platforms in the restaurant business.

5.3. Practical implications

From a practical standpoint, this study offers critical implications for restaurant managers. First, given the significant role of platform endorsements in the context of eWOM, small and individual restaurants—particularly those lacking effective communication channels to signal their value—should leverage platform endorsements to stimulate customer interest.

Traditional advertising, even at the regional level, is often accessible only to franchised or chain restaurants due to the high costs involved. Consequently, many restaurants depend on social media and eWOM, which have proven to be effective marketing tools. However, their signaling power is often limited due to customer skepticism toward content (Jamil et al., 2024) and cognitive overload caused by excessive information (Furner et al., 2016). In this context, platform endorsements offer a promising alternative: they are not only relatively cost-efficient but also serve as credible signals that can elevate perceived consumption value and strengthen a restaurant's competitive position in the platform. While platform endorsements offer advantages to restaurants of all types, their signaling effectiveness may be particularly pronounced for smaller operators that face constraints in visibility and brand-building capacity.

Second, although platform endorsements with general cues tend to be more effective, the heterogeneous impact of different specific cues suggests that restaurant managers have considerable discretion in utilizing tailored stimuli. Since context-specific cues significantly influence consumption values closely associated with those cues (e.g., "Romantic" → Emotional value; "Scenic" → Quality-related values), restaurant managers should strive to highlight these specific cues through platforms to increase their chances of being featured, effectively signaling values that align with their managerial goals. However, the null effect of the "Foodie" cue also indicates that context-specific cues are not always effective. Given that consumers who actively engage in restaurant review platforms are already highly food-involved and possess strong perceptions of food quality, additional food-related signals may offer limited incremental impact. Thus, for marketing purposes, the design of cues should be strategically aligned with consumers' evaluative focus rather than intrinsic product attributes.

6. Limitations and future research

Despite its contributions, this study has some limitations. First, as the data and platform endorsements were based solely on OpenTable's annual lists, the findings may not be generalizable to other platforms. Future research should explore whether the conclusions apply to different platforms to improve generalizability. Second, the study used three specific keywords—"Romantic," "Scenic," and "Foodie"—as proxies for cues due to data availability, but a wider variety of cues may exist. Further research should examine how platform endorsements influence customer attitudes across different cues and identify which cues are most effective. Third, while this study found that the "Foodie" cue did not yield a significant effect among restaurant patrons, this does not necessarily imply that the cue is inherently ineffective. Rather, there may be more nuanced contextual or audience-specific conditions under which the "Foodie" endorsement could function more effectively. Future research should further investigate these boundary conditions to identify when and for whom certain cues exert stronger influence. Lastly, this study focuses on restaurants with more than 2,000 reviews within the target observation window to ensure reliable measurement of consumption values over time, thereby excluding less-reviewed or relatively newer establishments. This selection criterion may introduce selection bias and limit the generalizability of the findings. Future research should therefore examine whether the observed patterns hold for smaller or less-reviewed restaurants.

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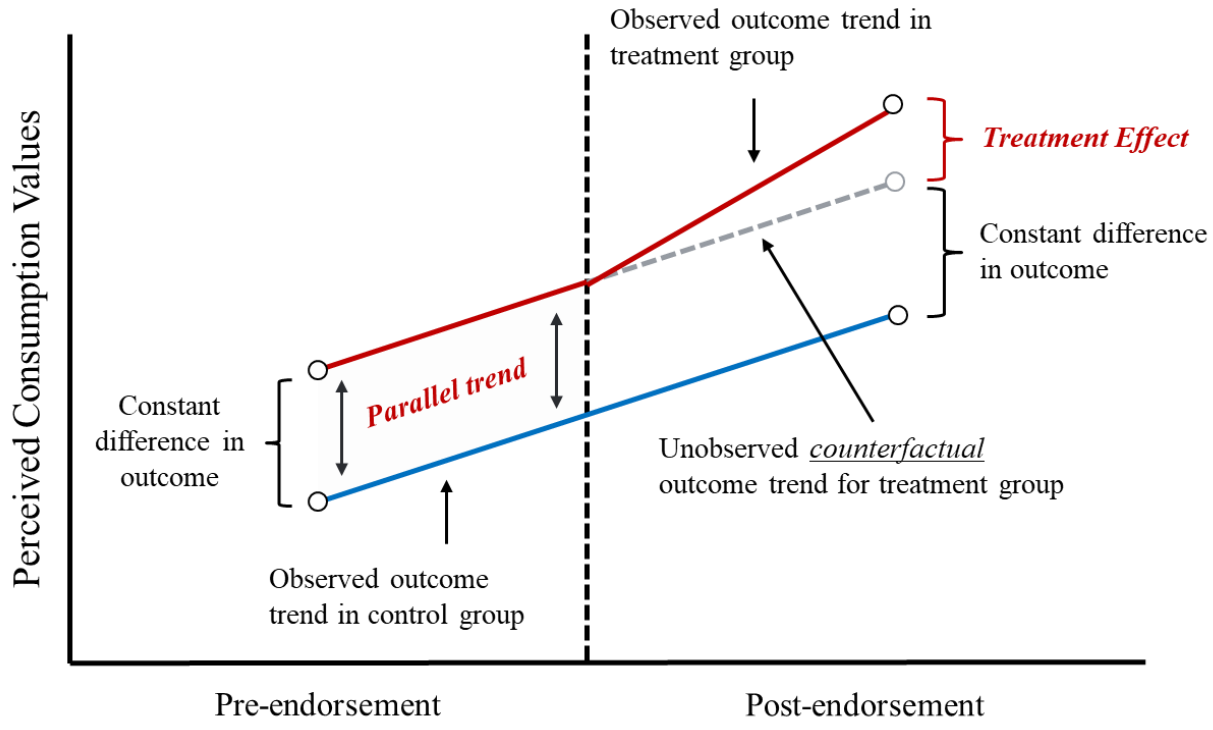
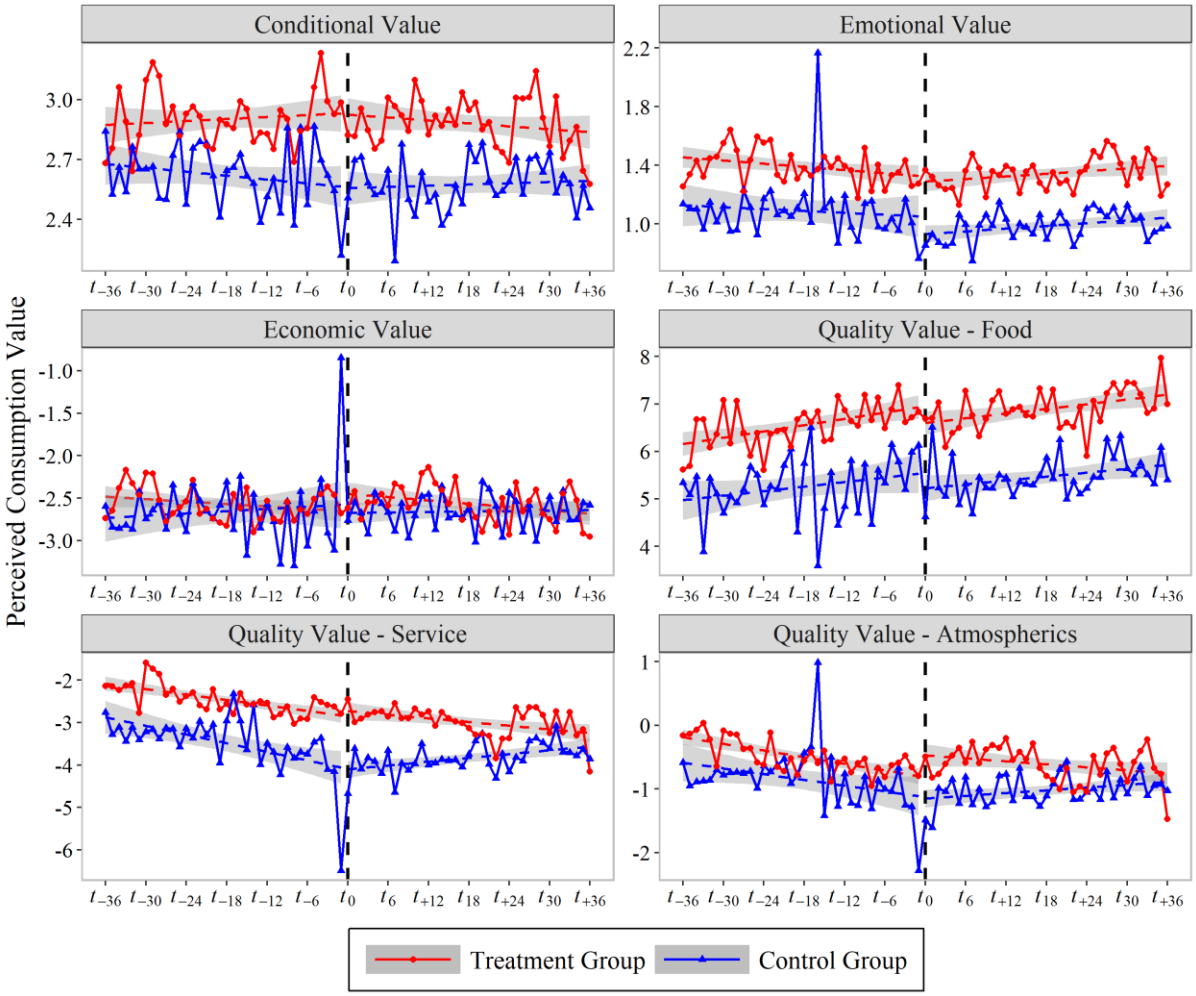
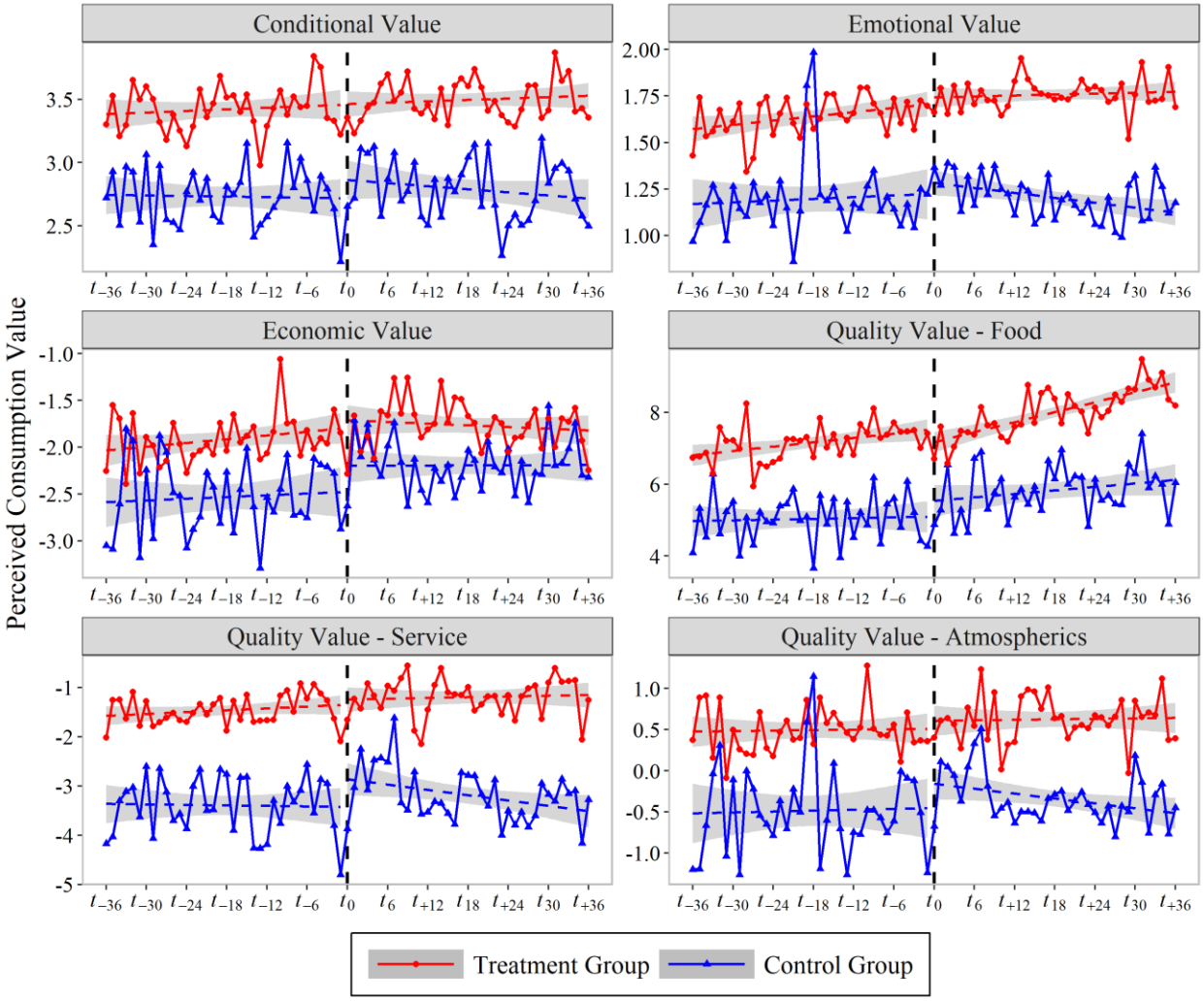


Figure 1. Difference-in-Differences (DID) approach



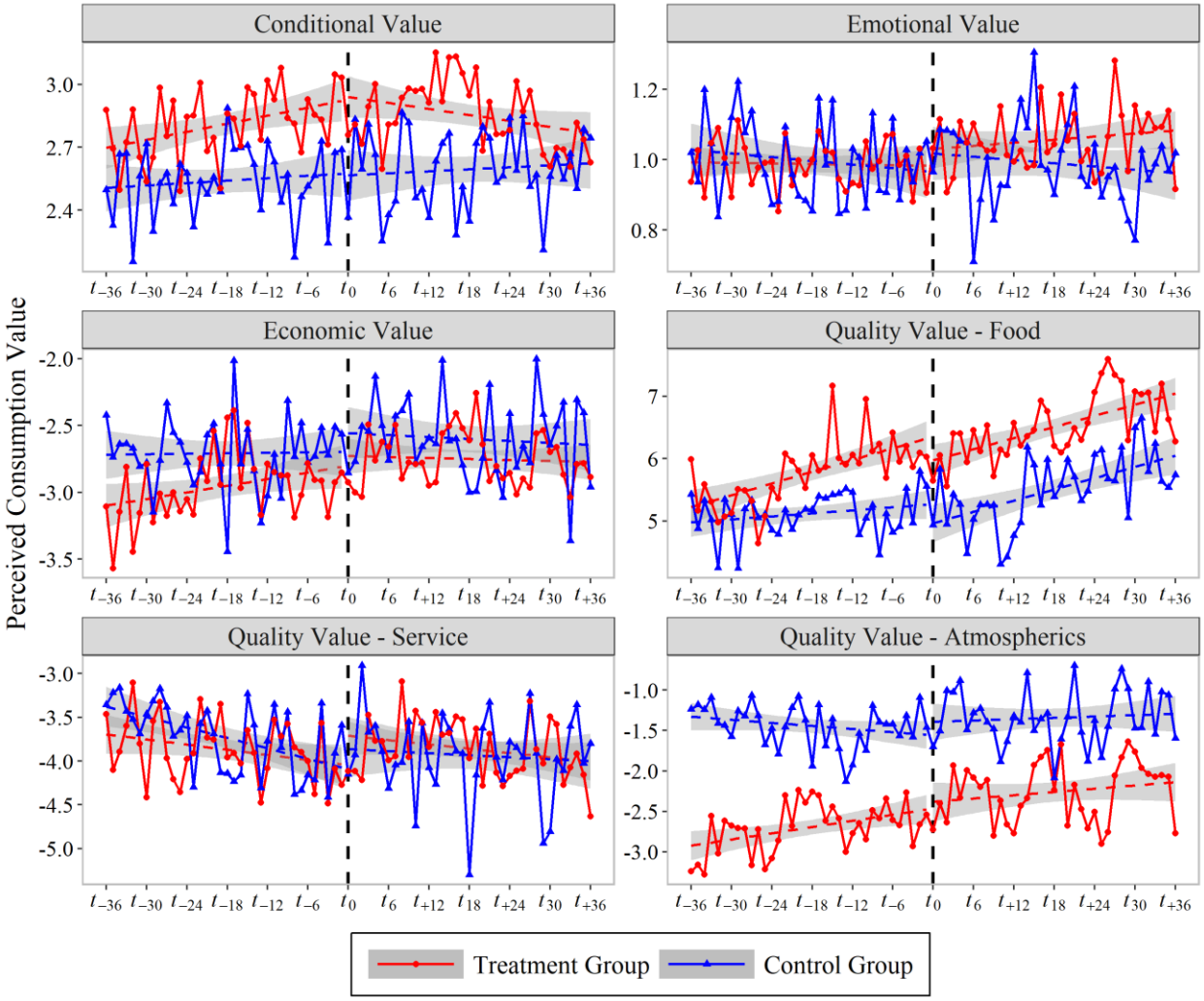
Notes. A dashed vertical line in the graph denotes the timing of the endorsement.

Figure 2. Consumption values before and after endorsement – Experiment 1



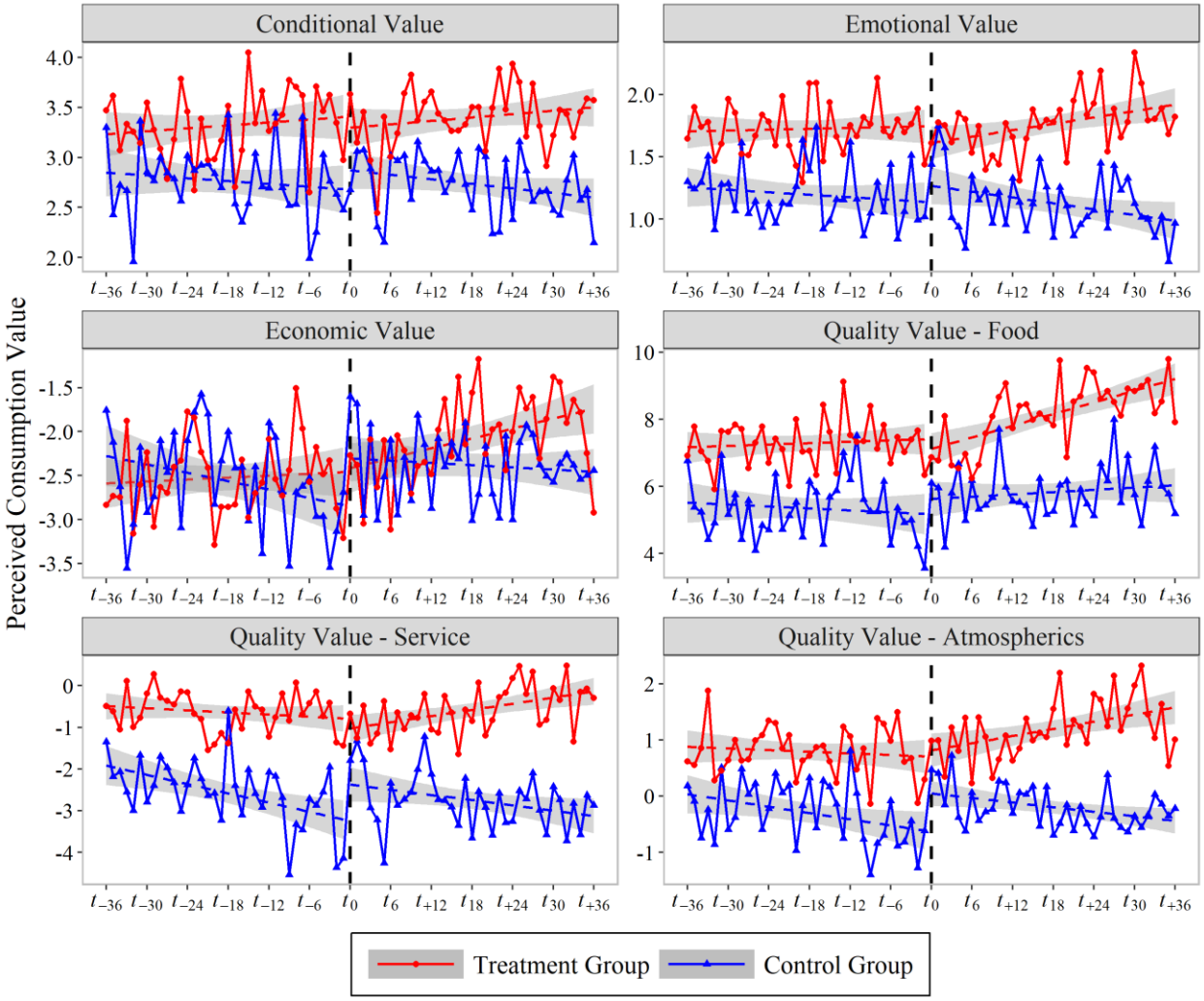
Notes. A dashed vertical line in the graph denotes the timing of the endorsement.

Figure 3. Consumption values before and after endorsement – Experiment 2 (“Romantic”)



Notes. A dashed vertical line in the graph denotes the timing of the endorsement.

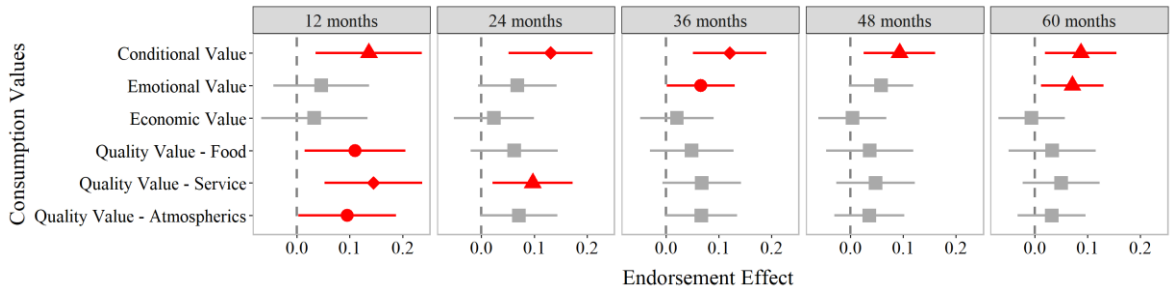
Figure 4. Consumption values before and after endorsement – Experiment 2 (“Scenic”)



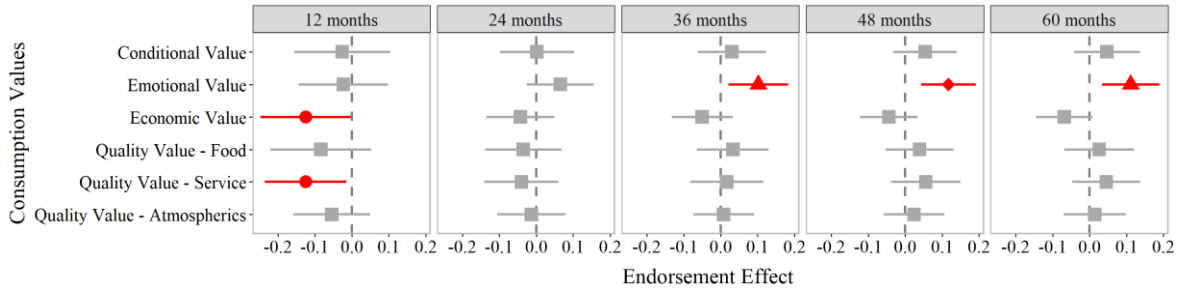
Notes. A dashed vertical line in the graph denotes the timing of the endorsement.

Figure 5. Consumption values before and after endorsement – Experiment 2 ("Foodie")

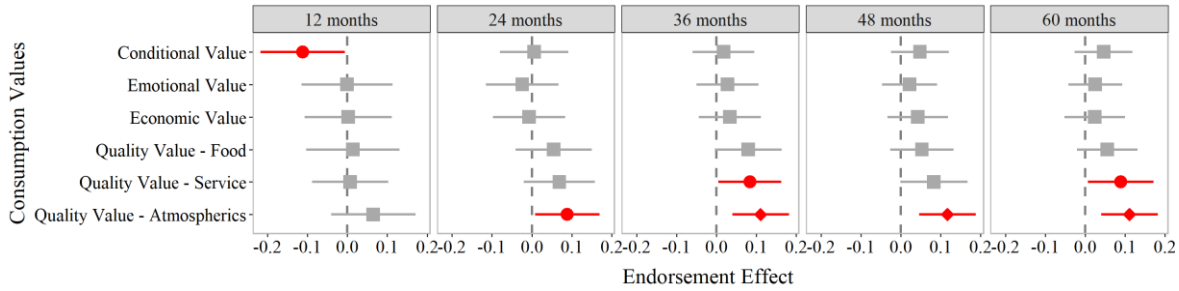
A. Experiment 1 – General cue



B. Experiment 2 – "Romantic"



C. Experiment 2 – "Scenic"



D. Experiment 2 – "Foodie"

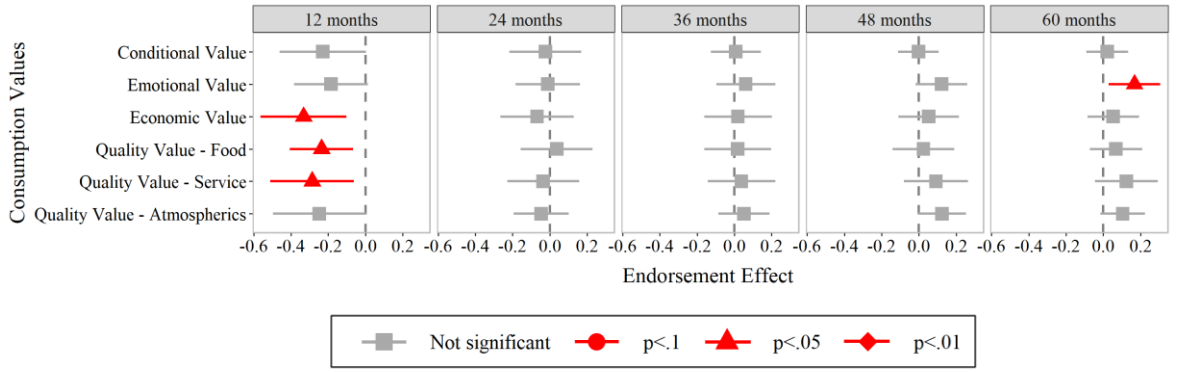


Figure 6. Estimation results of endorsement effect across different windows

Table 1. Summary of prior studies on TPO endorsements

Author	Target endorser	Outcome variable	Type of endorsement	Research method
Bang et al. (2022)	• Michelin Guide	• Restaurant consumption values	• Certification/seal of approval	• Difference-in-differences approach
Beldad et al. (2020)	• A seal of fictitious organization	• CSR Initiative Effectiveness	• Certification/seal of approval	• Online experiment
Daries et al. (2021)	• Michelin Guide	• Profitability	• Certification/seal of approval	• Descriptive analysis
Drexler et al. (2018)	• Organic food logos	• Consumer attention	• Certification/seal of approval	• Lab experiment
Gergaud et al. (2015)	• Michelin Guide	• NYC restaurant quality ratings	• Certification/seal of approval	• Difference-in-differences approach
Huo et al. (2022)	• Entertainer celebrity and celebrity chefs	• Purchase intention	• Non-comparative endorsement	• Online experiment
Janssen & Hamm (2012)	• Organic food logos	• Consumer preference and willingness-to-pay	• Certification/seal of approval	• Field experiment
Magnini et al. (2010)	• Celebrity	• N/A	• Non-comparative endorsement	• Online survey
Schouten et al. (2021)	• Celebrity and influencer	• Trustworthiness and expertise	• Non-comparative endorsement	• Online experiment
Yuan et al. (2020)	• Center for China Agriculture Brand (CCAB)	• Trustworthiness and perceived value	• Certification/seal of approval	• Online survey

Table 2. Topic categorization and naming

No.	Consumption values	Number of topics	Examples of representative keywords
1	Conditional value	5	year, family, friend, trip, visiting, birthday, anniversary, occasion, happy, celebrate, wedding, night, dinner, evening, family, kid, husband, lunch, brunch, valentine, …
2	Emotional value	2	place, love, favorite, fun, feel, romantic, décor, gem, fine, wonderful, expectation, memorable, outstanding, enjoyable, superb, atmosphere, impeccable, cool, …
3	Economic value	2	price, high, worth, expensive, expect, money, overprice, cost, pay, disappoint, spend, fair, paying, reasonable, pricy, inexpensive, cheap, …
4	Quality value – Food	10	small, entrée, portion, dessert, plate, steak, cook, salad, pasta, fish, amazing, delicious, perfect, fantastic, dish, bread, menu, wine, flavor, chef, fresh, ingredient, variety, creative, meat, …
5	Quality value – Service	8	table, waiter, waitress, server, manager, attentive, staff, wait, order, reservation, hostess, minute, slow, ask, rude, ready, patron, warm, mask, profession, problem, feel, helpful, …
6	Quality value – Atmospherics	4	area, bar, patio, window, open, room, top, notch, ambiance, fantastic, impeccable, beautiful, location, house, ocean, sunset, city, beach, loud, noise, quiet, large, hear, crowded, wonderful, gorgeous, music, …

Table 3. Examples of positive and negative sentiment weights

Positive words (5,212 words)			Negative words (5,112 words)		
No.	**Words**	**Coef.**	**No.**	**Words**	**Coef.**
1	exceeded	2.43537	1	uninspired	-3.15213
2	skeptical	2.27322	2	marginal	-2.77598
3	bravo	2.20876	3	mediocre	-2.72031
4	penny	2.17067	4	unremarkable	-2.68722
5	heartbeat	1.95187	5	overate	-2.68611
6	excellent	1.87821	6	indifferent	-2.62720
7	sublime	1.84728	7	tasteless	-2.62012
8	surpassed	1.84687	8	lackluster	-2.57043
9	perfection	1.82393	9	worst	-2.56683
10	quibble	1.80392	10	disinterested	-2.53711

Table 4. Data descriptions

Category	Variables	Treatment group	Control group
Experiment 1	No. of Restaurants	116	116
	No. of reviews	229,809	181,740
	Avg. number of reviews per restaurant	1,981.11	1,566.72
	Ratings (1–5 range)	4.28	4.02
	Length of review	32.37	32.39
	Date of oldest review	Feb 1st, 2003	Oct 18th, 2004
	Date of latest review	Jan 21st, 2023	Jan 21st, 2023
Experiment 2	No. of Restaurants	154	154
	No. of reviews	339,710	233,247
	Avg. number of reviews per restaurant	2,205.91	1,514.91
	Ratings (1–5 range)	4.25	4.06
	Length of review	32.58	32.57
	Date of oldest review	Feb 1st, 2003	April 19th, 2005
	Date of latest review	Jan 21st, 2023	Jan 21st, 2023

Table 5. Estimation results of endorsement effects on consumption values–Experiment 1

Variables	Conditional value	Emotional value	Economic value	Quality values		
				Food	Service	Atmospherics
γ	0.121*** (0.042)	0.066** (0.039)	0.021 (0.042)	0.049 (0.048)	0.068 (0.045)	0.067 (0.041)
Restaurant effects (α_r)	Yes	Yes	Yes	Yes	Yes	Yes
Time effects (β_t)	Yes	Yes	Yes	Yes	Yes	Yes
$Adj.R^2$	0.207	0.242	0.198	0.218	0.380	0.358
Obs.	11,926	11,926	11,926	11,926	11,926	11,926
Parallel trend test	0.002 (0.005)	-0.006 (0.005)	-0.006 (0.005)	-0.002 (0.005)	-0.001 (0.005)	-0.004 (0.005)

Notes. Clustered standard errors are given in parentheses.

*** p < .01; ** p < .05; * p < .1

Table 6. Estimation results of endorsement effects on consumption values–Experiment 2

Variables	Conditional value	Emotional value	Economic value	Quality values		
				Food	Service	Atmospherics
Panel A: Specific cue – "Romantic"						
γ	0.030 (0.056)	0.102** (0.049)	-0.050 (0.050)	0.033 (0.059)	0.016 (0.060)	0.008 (0.050)
Restaurant effects (α_r)	Yes	Yes	Yes	Yes	Yes	Yes
Time effects (β_t)	Yes	Yes	Yes	Yes	Yes	Yes
$Adj.R^2$	0.176	0.195	0.137	0.226	0.326	0.277
Obs.	7,858	7,858	7,858	7,858	7,858	7,858
Parallel trend test	0.000 (0.008)	0.005 (0.006)	0.000 (0.008)	0.005 (0.006)	0.007 (0.007)	0.002 (0.007)
Panel B: Specific cue – "Scenic"						
γ	0.018 (0.047)	0.028 (0.047)	0.034 (0.047)	0.080 (0.051)	0.084* (0.048)	0.111*** (0.043)
Restaurant effects (α_r)	Yes	Yes	Yes	Yes	Yes	Yes
Time effects (β_t)	Yes	Yes	Yes	Yes	Yes	Yes
$Adj.R^2$	0.187	0.170	0.148	0.209	0.312	0.354
Obs.	8,902	8,902	8,902	8,902	8,902	8,902
Parallel trend test	0.039*** (0.009)	0.008 (0.009)	0.019** (0.009)	0.021*** (0.007)	0.019** (0.009)	0.010 (0.008)
Panel C: Specific cue – "Foodie"						
γ	0.008 (0.081)	0.061 (0.096)	0.019 (0.110)	0.018 (0.109)	0.038 (0.110)	0.052 (0.083)
Restaurant effects (α_r)	Yes	Yes	Yes	Yes	Yes	Yes
Time effects (β_t)	Yes	Yes	Yes	Yes	Yes	Yes
$Adj.R^2$	0.206	0.229	0.108	0.256	0.279	0.233
Obs.	2,469	2,469	2,469	2,469	2,469	2,469
Parallel trend test	-0.009 (0.011)	-0.004 (0.017)	-0.012 (0.011)	0.005 (0.013)	0.002 (0.018)	-0.002* (0.016)

Notes. Clustered standard errors are given in parentheses.

*** p < .01; ** p < .05; * p < .1