



Article

Do Online Reviews Encourage Customers to Write Online Reviews? A Longitudinal Study

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Abstract: This study examines the nature of online reviews to explain changes in satisfaction, trust, and consumer intent to write a review during restaurant revisit stages. Using a data set of two-time lags, the findings show that the impact of online reviews on customer satisfaction, trust, and consumer intent to write a review decreases or dilutes over time. More specifically, the effect of online reviews in T+1 diminishes as consumers experience a particular restaurant compared to when they initially encountered the review. Our findings also show that the impacts of online reviews on satisfaction and trust gradually decrease over time. However, the relationship between online reviews and trust is only significant in T+1. Additionally, the effect of trust on customer intent to write a review initially increases (T) and then, gradually drops over time (T+1). Finally, this study proposes guidelines for improving theoretical and practical insights across consumption experience stages.

Keywords: online reviews; satisfaction; trust; customer intent to write a review; longitudinal study



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1. Introduction

"Even with restaurants possibly being the easiest industry to acquire for, over 50% of guests still never write a review" [1].

This quote highlights a direction for research on how consumers accept online reviews and how they write and share their experiences. Despite the importance of online reviews, potential consumers are often hesitant to write their actual experiences. However, reviewers are also information providers for potential customers. For example, shoppers often revisit a particular website to check reviews as part of their product or service evaluation journey [2]. This activity is considered one of the influential expressions of customer engagement [3,4] and plays an important role in facilitating sustainable business. In terms of sustainability, after the COVID-19 pandemic, online reviews not only expanded the concept of social sharing but also promoted social culture and economic growth to young consumers. This effect was enormously observed on websites such as TripAdvisor, Yelp, and Instagram.

Research demonstrates that customer perceptions change over time [5]. Since online reviews in the hospitality industry are critical for reducing uncertainty [6–8], it remains unclear how the evolution of online reviews affects its outcomes and what dynamics of change are significant. This leads us to examine the changes in online reviews and their outcomes, suggesting that a complete understanding of the dynamic nature of constructs is essential [9,10].

Hu et al.'s study [11] using transaction cost economics and uncertainty reduction theories presents a possible example where the temporal effect of online reviews has been critical. They demonstrated that consumers vary in their acceptance of e-WOM (or online reviews) because the evaluation of online reviews evolves over time. Although online reviews play an important role in triggering customer engagement, to the best of our knowledge, there have been relatively few studies on temporal effects, particularly in

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the hospitality sector. This lack of temporal dynamics suggests a requirement for new knowledge to enhance the sustainability of the hospitality literature.

This study enables scholars to focus on changes in online reviews while helping practitioners create communication designs that can be shared with online users via various online channels. We establish a proposed model regarding online reviews in two ways, as follows. First, we examine the consequences of online reviews for consumers who used usergenerated information during the restaurant consumption stages (T and T + 1). Additionally, we incorporate two affective constructs that have highlighted the importance of customer engagement in hospitality research, namely, customer satisfaction [12,13] and trust [14–16], which motivate customers to write their reviews about a restaurant experience.

From a sustainable perspective, we consider the development of dynamic phases that can address the nature of online reviews. We demonstrate that such an approach can enhance scholars' knowledge of sustainable hospitality management. For this purpose, we developed a conceptual model of the changes in online reviews. We tested the model using two points of time lag. Thus, we provided insights for researchers in the hospitality industry.

2. Theoretical Background

After the COVID-19 pandemic, Koreans are significantly interested in online reviews of restaurant choices. The most important reason for the increase in online reviews is the sharp decrease in the number of customers visiting restaurants compared to before the COVID-19 pandemic. Consequently, the increase in non-face-to-face ordering has been perceived to protect customer safety. Thus, online reviews from users who have used the restaurant help to resolve uncertainty and understand restaurant selection attributes. Moreover, restaurants' sales have been gradually increasing since the summer of 2021 [17]. In addition, a growing number of young Koreans are visiting restaurants and sharing their experiences through Instagram or TripAdvisor [18]. In other words, we demonstrate that online reviews are closely related to Korean restaurant consumption experiences.

The consumption-system approach that addresses the rational and emotional changes in consumer behavior suggests that intention and its antecedents are dynamic. Fanselow [19] demonstrated that emotion is a function of motivating behavior. In particular, a stimulus to achieve an emotional state can facilitate behavioral intentions, suggesting the emotion-behavior linkage [19,20]. Furthermore, information processing can capture a consumer's emotional state [21]. For instance, if consumers search for e-WOM, this information processing on online reviews should influence their affective evaluation, and then, behavioral intentions. Regarding the latter, online reviews of a particular object follow a person's psychological beliefs about the behavior [22].

Regarding the cognition–affection–behavior link, Figure 1 describes the mechanism from an evolutionary perspective. The affect theory demonstrates that when a consumer is satisfied (or dissatisfied) with an information cue, a positive (or negative) emotion will be generated [23]. The cycle of satisfaction highlights that subsequent information perception, emotional state, and behavioral intention depend on each initial level, indicating that consumers' subsequent behaviors should be adjusted by their prior evaluations [24]. Therefore, online review, satisfaction, trust, and the intention to write a review at time T + 1 are revised by the evaluation of each construct at time T. This logic is supported by the experience-based performance in the subsequent consumption phase [25].

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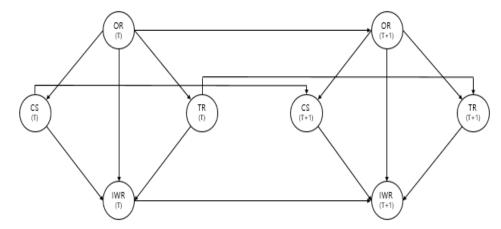


Figure 1. Conceptual model. Note: OR: online reviews; CS: customer satisfaction with the restaurant; TR: trust with the restaurant; IWR: consumer intent to write a review.

The proposed model (T and T + 1) consists of two phases of a consumption-system approach, namely, from online review processing to subsequent behavioral formation that draws on theoretical justifications. In particular, this model highlights the importance of construct evolution, indicating that marketing constructs improve, decrease, or remain unchanged [10]. Thus, changes in online reviews must eventually be translated into satisfaction, trust, and intentions.

2.1. Online Reviews

Customers are likely to use online reviewers to make their decisions about restaurant selection [26]. Online reviews are typically defined as an evaluation of a specific object made by a person with real experience [27]. This definition emphasizes the importance of sharing people's experiences with other customers or relevant people, resulting in an improvement in sales and attitudinal change [28]. As the hospitality sector is primarily intangible, customers seek online reviews from well-known experienced sources (e.g., Yelp.com, Tripadvisor.com, Catchtable.com, etc.) to reduce uncertainty and risk. Once customers have visited a particular restaurant, online reviews often play an important role in enhancing restaurant satisfaction and leading to initial trust [29].

Our proposed model particularly implies the evolution of online reviews. Theoretically, a consumption system in consumer behavior emphasizes the subsequent evaluation of a particular service that is consumed during multiple consumption periods [25]. For example, if consumers visit a particular restaurant based on online reviews and their experiences with the restaurant do not match online reviews at time T, dissatisfaction or distrust of online reviews will appear at time T+1, resulting in them no longer visiting the restaurant. This behavior is consistent with the goal-driven behavior theory [30] because consumers search for online reviews to achieve positive goals, which in turn motivate certain behaviors. In contrast, if the consumption experience of a particular restaurant is positive, the outcomes of online reviews will positively evolve over time. Similarly, online reviews are consistent with their experiences (T), and then, they should influence the perception of existing reviews in subsequent restaurant visits (T+1), indicating that there is a carryover effect. Therefore, this study is critical for a complete understanding of behavioral dynamics during subsequent restaurant revisits.

2.2. Satisfaction with the Restaurant

Since satisfied customers are likely to choose the same brand of service, the concept of customer satisfaction is popular in service literature [31] because satisfaction is likely to enhance a consumer's repeated behavioral intentions [24]. In particular, when researchers conceptualize customer satisfaction, there are two common formulations of satisfaction, namely, transaction and cumulative satisfaction. The former focuses on the evaluation of a single transaction at a particular service, whereas the latter focuses on multiple subjective

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comparison standards that reflect a subsequent evaluative judgment of the service purchase occasion [32]. This study accepts a cumulative perspective of satisfaction because behavioral researchers have especially highlighted the mediating role of satisfaction between its antecedents and outcomes. It is consistent with the appraisal—emotional response—coping framework [33]. This framework suggests that the initial evaluation of online reviews leads to an emotional response, resulting in the triggering of behavioral intention. In line with these observations, this study conceptualizes customer satisfaction as a customer's fulfillment response or judgment that reflects a pleasurable level of the consumption experience.

2.3. Trust toward a Restaurant

Trust is important for the longitudinal relationship between customers and service providers [33,34]. In the hospitality sector, trust is quite important because consumers are likely to avoid uncertainty and risks if they are not familiar with a particular restaurant, resulting in hesitation about further actions [35]. Trust serves as the fundamental cornerstone of the initial relationship between the two parties and then bridges the relationship between its antecedents and outcomes [36,37].

From a customer–brand relationship perspective, trust is defined as the willingness of the average consumer to rely on the ability of a particular restaurant (or brand) to perform its stated function [38]. Although this definition mainly focuses on the cognitive perspective, the majority of researchers do not agree with the definition of trust [39,40]. To overcome this issue, researchers have adopted the expectancy-disconfirmation theory to define trust as follows: "an attitude of confident expectation in a particular situation of risk that one's vulnerabilities will not be exploited" [41] (p. 860). Additionally, trust should generate a positive feeling of trust formation through the service exchange process between customers and service providers [42]. The definition of trust should be related to the rational and affective aspects of trust [43]. In line with these observations, we conceptualize trust as a consumer's confidence based on the favorable feelings that occur before, during, and after a particular restaurant visit.

3. Conceptual Model

The proposed model demonstrates that online reviews influence behavioral intentions through the effects of customer satisfaction and trust. Our model upgrades the evolution of behavioral intentions proposed by Ha et al. [44], which includes rational and emotional routes. These two routes are customer satisfaction and trust, indicating the role of mediators [45,46]. With this logic, we posit that behavioral intent consists of an online review and two mediators, namely, customer satisfaction and trust. Thus, the metacognitive mechanism conceptually supports our model, which depends on two mediators connecting cognitive knowledge (online reviews) and action (behavioral intention) [47].

3.1. Temporal Dynamics

As mentioned earlier, the drivers of behavioral intentions evolve over time [10]. From a consumption-system perspective, a reasonable route would be to make an evaluation of a restaurant after a consumer searches for online reviews and visits the restaurant. If the overall evaluation exceeds their expectations, the consumer forms a positive attitude toward returning to the restaurant in the future. However, an essential approach is to recognize the existence of temporal dynamics during the restaurant's revisit periods [25,44,48].

Regarding these effects, Singer and Willett [49] pointed out that the change in outcomes depends on a function of time. In particular, changes in rational and emotional constructs, as well as behavioral intentions toward a specific object, are fundamental to construct dynamics [10]. In addition, as the nature of dynamics increases, decreases, or remains unchanged, the proposed constructs such as online reviews, customer satisfaction, trust, and online review intention in T+1 are adjusted by prior evaluations in T [24]. Thus, changes in constructs are evolved within the experience-based evaluation system through online information processing.

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3.2. Research Hypothesis

Online reviews influence entire phases of the consumption system, including before, during, and after visits. The nature of temporal changes in online information processing emphasizes the evolution of online reviews. Brzozowska-Woš and Schivinski [50] pointed out that the effect of online reviews on consumer behavior evolves. For instance, if a consumer searches for online reviews of a restaurant, the impact of online reviews may become increasingly strong, resulting in the reinforcement of behavioral intentions. However, the impact of online reviews may dilute or decrease over time [11]. In the early stage of a service that has not yet been experienced, consumers tend to rely on online reviews, but over time, the effectiveness of online reviews for the same service may be diluted or diminished. Thus, we propose the following hypothesis:

Hypothesis 1 (H1). The effect of online reviews on customer intent to write a review diminishes as consumer evaluation of online reviews in their consumption experience gradually dilutes over time.

As mentioned earlier, we particularly focus on the role of mediation. We expect that online reviews should influence customer satisfaction and trust, resulting in behavioral intentions. Signal theory supports the approach because there is a signal behavior between two parties (e.g., consumer A and restaurant B) where information asymmetry exists [51]. Restaurant services are intangible, which leads to information asymmetry between two parties. In other words, consumer behavior is inevitably different depending on what users write and the opinions they express. In this process, customer satisfaction and trust are formed through online reviews [52]. However, consumers with actual consumption experiences are becoming less reliant on online reviews over time [11]. Thus, we proposed the following two hypotheses:

Hypothesis 2 (H2). The effect of online reviews on satisfaction declines as consumer evaluation of online reviews decreases over time.

Hypothesis 3 (H3). *The effect of online reviews on trust declines as consumer evaluation of online reviews decreases over time.*

The direct effect of online reviews on customer intent to write a review should diminish over time. This is because two emotional constructs such as satisfaction and trust, increase over time and are directly related to intentions [25,45]. Regarding this mediation role, the temporal impact of emotional constructs increases on a particular behavioral object [48]. While the impact of online reviews diminishes over time, rational beliefs or emotional attitudes toward a particular subject can influence patterns of behavioral dispositions [53]. Thus, we propose the following hypotheses.

Hypothesis 4 (H4). Satisfaction has a direct, positive effect on customer intent to write a review as emotional evaluation is enhanced.

Hypothesis 5 (H5). Trust has a direct, positive effect on customer intent to write a review as their emotional attitude improves.

Although we do not establish formal hypotheses regarding the carryover effect, our proposed model particularly involves the concept of temporal changes. More specifically, carryover effects are expected in consumption experiences because a consumer's evaluation of a specific construct affects the same construct at the time of the next restaurant visit [24,48]. Therefore, online reviews, satisfaction, trust, and customer intent to write a review in one period should affect the same construct in a subsequent period if consumers revisit the restaurant with a time difference.

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4. Methodology

4.1. Data Collection

We tested the proposed hypotheses using a data set of two time lags in South Korea. In particular, we collected data at two points (6-month time lags) in January 2021. Although many restaurants were struggling with their sales during the COVID-19 pandemic [54], the restaurant industry witnessed remarkable competitive growth by August 2021 [55].

Respondents were contacted at shopping mall food courts in the capital city of Korea. We conducted a brief interview about whether these respondents could participate in our survey. One week later, 1255 participants were contacted, of which 1052 respondents informed their participation, including their mobile phone numbers and emails. Finally, the sample criteria of this study were set for customers who have visited a casual restaurant at least once and always search for reviews when choosing a restaurant.

In T, we contacted respondents (n = 1052) twice using a text message and an email. We also provided a URL link so that respondents could respond conveniently. Excluding respondents who did not meet the sample criteria (n = 54) or who were insincere (n = 19), a total of 648 usable responses remained among 721 responses. At time T + 1, the remaining respondents (n = 648) who participated in T were again contacted. We collected 407 usable responses. In particular, the research team checked whether they had experienced the desired restaurant after the first survey, resulting in the exclusion of 85 responses. Thus, a total of 322 responses were used to test the proposed hypotheses (response rate = 32.2%). The average age of the participants was 36.9 years, and 57.1% were women.

4.2. Measures

As shown in Table 1, we assessed all items on a 5-point scale (1 = definitely disagree to 5 = definitely agree). We measured online reviews using three items adapted from the studies by Filieri and McLeay [56] and Senecal and Nantel [57]. Satisfaction was measured using three items from the studies by Fullerton [58] and Ryu and Han [59]. Trust was measured using three items adapted from the work by Morgan and Hunt [34]. Finally, customer intent to write a review was measured using two items adapted from the research by Dixit et al. [60].

Construct	Measures	Loading (T)	Loading (T + 1)
Online reviews	The overall review rating facilitates the evaluation of available alternatives.	0.87	0.88
(α : T = 0.74, T + 1 = 0.76; AVE: T = 0.66, T + 1 = 0.68;	Overall review length helps me rapidly select the best restaurant among alternatives.	0.75	0.77
CR: $T = 0.85$; $T + 1 = 0.86$)	The online reviews are trustworthy overall.	0.79	0.81
Satisfaction	I have really enjoyed myself at this restaurant.	0.78	0.79
(α : T = 0.76, T + 1 = 0.78; AVE: T = 0.67, T + 1 = 0.69; CR: T = 0.86; T + 1 = 0.87)	My expectations of service in this restaurant had been met. I was fully satisfied with the service in this restaurant.	0.85 0.82	86 0.84
Trust $(\alpha: T = 0.76, T + 1 = 0.79;$	This restaurant is reliable. I have confidence in this restaurant.	0.84 0.91	0.85 0.92
AVE: $T = 0.68$, $T + 1 = 0.70$; CR: $T = 0.86$; $T + 1 = 0.88$)	This restaurant has high integrity.	0.71	0.75
Consumer intent to write a review (α : T = 0.70, T + 1 = 0.81;	I intend to write online reviews in the near future.	0.92	0.92

I plan to write online reviews in the near future.

Table 1. Model constructs, measures, and AVE by time period (CR: composite reliability).

5. Results

AVE: T = 0.70, T + 1 = 0.84;

CR: T = 0.82; T + 1 = 0.91)

All constructs in the conceptual model were specified using the reflective indicators outlined in Table 1. The estimation method should be consistent with the complex interrelationships between observed and latent variables [48], which, in this case, involves eight latent constructs with temporal and carryover effects. As a result, for estimating such a complex structural equation model, partial least square (PLS) is appropriate [61]. In particular, the use of PLS arises from the following issues: (1) the main approach is as

0.75

0.91

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explanatory as predictive of the complex inter-relationships between observed and latent variables; (2) the sample size (n = 322) is not very large; (3) our approach depends on a composite measurement model with a reflective design, which means that indicators and dimensions represent different facets [62]. Thus, Smart PLS software (v.3) was used for the PLS analysis.

We checked the mean and Cronbach's alpha. We analyzed the pair-wise t-test, resulting in nonsignificant changes (the mean of two constructs) from T to T + 1. However, the mean of both customer satisfaction and the customer's intent to write a review has decreased significantly (p < 0.01). These results indicated substantial changes in scores. Furthermore, Cronbach's alphas showed that scales were stable during subsequent consumption stages.

We tested the proposed hypotheses using SPSS and Smart PLS. We checked convergent validity using loadings and average variance extracted (AVE). Table 2 showed that all loadings exceeded the recommended level (0.71–0.92) [63]. The AVE values exceeded the cut-off of Fornell and Larcker's guidelines [64]. Finally, we checked for discriminant validity. It also met Fornell and Larcker's guidelines [64]. Therefore, we confirmed that convergent and discriminant validities were acceptable.

Construct	Mean (SD)	1	2	3	4	5	6	7	8
OR (T)	3.62(0.71)	0.66							
CS (T)	3.55(0.75)	0.15	0.67						
TR (T)	3.71(0.80)	0.45	0.41	0.68					
IWR (T)	3.61(0.77)	0.04	0.01	0.03	0.70				
OR(T+1)	3.64(0.78)	0.38	0.17	0.46	0.05	0.68			
CS(T+1)	3.12(0.78)	0.17	0.37	0.42	0.01	0.20	0.60		
TR(T+1)	3.68(0.86)	0.48	0.44	0.37	0.01	0.50	0.45	0.70	
IWR(T+1)	3.18(0.86)	0.01	0.05	0.05	0.28	-0.01	0.06	0.06	0.84

Table 2. Descriptive statistics and correlation matrix.

Note: Italics are AVE. OR: online reviews; CS: customer satisfaction with the restaurant; TR: trust with the restaurant; IWR: consumer intent to write a review.

The path coefficients for the proposed model are reported in Figure 2. The PLS bootstrapping tests of statistical significance and significant differences in the path during the subsequent restaurant visit are considered. The nonsignificant paths in the proposed model mainly appeared at T and T + 1. In particular, these results were relevant to the impact of online reviews, which has decreased over time. More specifically, the direct effect of online reviews has dramatically decreased over time. As shown in Table 3, initial online reviews had a positive and significant effect on consumers' intentions to write a review. However, the same relationship became less effective over time (T, β = 0.08, p < 0.05; T + 1, β = -0.02, p > 0.05; Δ = -0.10). Thus, H1 was supported.

At time T, online reviews had positive and significant effects on customer satisfaction (β = 0.15, p < 0.05), trust (β = 0.45, p < 0.01), and consumer intent to write a review (β = 0.08, p < 0.05). Customer satisfaction, on the other hand, had small and nonsignificant effect on consumer intent to write a review (β = 0.02, p > 0.05). Consistent with previous studies of the consumption-systems approach [25], all four carryover effects from T to T + 1 are significant. The largest carryover effect is for customer satisfaction (0.82), followed by online reviews (0.78), trust (0.74), and consumer intent to write a review (0.28).

Moving from T to T + 1, the effect of online reviews on customer satisfaction and trust declines. In particular, the relationship between online reviews and trust was significant ($\beta=0.06$, p<0.05) at time T + 1, whereas the temporal change in the relationship between the two constructs was dramatically decreased (T, $\beta=0.45$, p<0.01; T + 1, $\beta=0.06$, p<0.05; $\Delta=-0.39$). There is a significant decrease in the direct effect of online reviews on consumer intent to write a review (T, $\beta=0.15$, p<0.05; T + 1, $\beta=0.03$, p>0.05; $\Delta=-0.12$). Thus, both H2 and H3 were supported.

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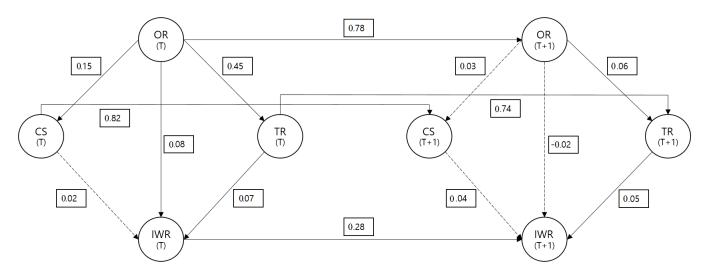


Figure 2. PLS path coefficients.

Table 3. Changes in path coefficients.

Proposed Relationships	T	T + 1	Change from T to T + 1	Significant Change?	Support?
Reviews—intentions	0.08 *	-0.02 (ns)	-0.10	Yes	H1: Yes
Reviews—satisfaction	0.15 *	0.03 (ns)	-0.12	Yes	H2: Yes
Reviews—trust	0.45 *	0.06 *	-0.39	Yes	H3: Yes
Satisfaction—intentions	0.02 (ns)	0.04 (ns)	0.02	Yes	H4: No
Trust—intentions	0.07 *	0.05 *	-0.02	Yes	H5: Partial
Reviews (T) —reviews $(T + 1)$		0.78 *			
Satisfaction (T)—satisfaction (T)		0.82 **			
Trust (T) —trust $(T + 1)$		0.74 **			
Intentions (T)—intentions (T + 1)		0.28 **			

Notes: *, p < 0.05; **, p < 0.01.

Although the effects of customer satisfaction on consumer intent to write a review positively increased over time, the results of path estimation did not provide support for H4, as indicated by a nonsignificant relationship between the two constructs over time (T, β = 0.02, p > 0.05; T + 1, β = 0.04, p > 0.05; Δ = 0.02). Thus, H4 was rejected. The support of H5 is mixed. While the positive effect of trust on consumer intent to write a review marginally increased from T to T + 1 (T, β = 0.07, p < 0.05; T + 1, β = 0.05, p < 0.05; Δ = -0.02), at every time lag, the relationship between the two constructs was significantly positive. H5 was partially supported.

6. Discussion

Although the importance of online reviews has been well documented, research on the changes in online reviews is still limited in the hospitality literature. This research expands the hospitality literature in three aspects by providing ample evidence for the evolution of four constructs such as online reviews, satisfaction, trust, and consumer intent to write a review. First, our findings demonstrate how online reviews partially lead to customer satisfaction and trust and then link to consumers' intent to write a review through the subsequent restaurant revisit phases. More specifically, the relationship between online reviews and their outcomes evolves over time, and the consumption experience at two time intervals (T vs. T + 1) adjusts consumers' cognitive and emotional judgments.

Second, this study demonstrates how the direct effects of online reviews decrease or dilute over time. While experiential attributes tend to increase the salience of tangible products over time [25], our findings show that the experiential aspect of online reviews, wherein consumer experience is added around cognitive judgment, dilutes the direct effect on behavioral intentions. Third, our results provide evidence on how customer satisfaction

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has no effect on customers' intention to write a review throughout the subsequent consumption phases. In particular, just as satisfied customers do not necessarily repurchase [65], we empirically confirm that satisfied customers do not necessarily write online reviews. Even though the direct or indirect effect of online reviews decreases over time, the insignificance of customer satisfaction contrasts with the significant effect of trust on customer intent to write a review at time T+1.

6.1. Theoretical Implications

Our findings add new insights to the literature on the evolution of online reviews. Additionally, since longitudinal studies of online reviews are still in their infancy, this study advances insights into the dynamics of online reviews and their outcomes across restaurant visit episodes. First, the impact of online reviews on customer satisfaction, trust, and consumer intent to write a review decreases or dilutes over time. If consumers are willing to revisit a restaurant, the direct impact of online reviews is reduced [66,67]. More specifically, the effect of online reviews at time T+1 diminishes as consumers experience a particular restaurant compared to when they initially encountered the review. From a longitudinal perspective on the nature of marketing construct dynamics [10], our findings provide ample evidence that the impact of online reviews relies on consumption experiences. This suggests that the temporal change in marketing constructs is crucial for a complete understanding of how online reviews dynamically influence their outcomes.

Second, there are differences and similarities between online reviews and their outcomes. The literature on information highlights the importance of the online information–emotional construct linkage that influences behavioral intentions [68,69]. The findings indicate that the impacts of online reviews on emotional constructs (satisfaction and trust) gradually decrease over time. However, changes in statistical significance differ from satisfaction to trust. Specifically, the significance of the relationship between online reviews and their two emotional constructs appears at time T, whereas the relationship between online reviews and trust is only significant at time T + 1. On the other hand, the relationship between online reviews and satisfaction is not significant at time T + 1. Generally, Bagozzi's appraisal–emotional response–coping framework [33] that reflects the initial evaluation of online reviews on emotional responses plays an important role in a better understanding of behavioral processes. Previous work also supported the increase in customer affection over time [48]. However, by highlighting the nonsignificance between the two constructs, this coping framework may have some limitations in emphasizing the dynamics of consumer behavior.

Third, the evolutionary pattern of trust is different compared to customer satisfaction. Most researchers agree with the evolution of trust, whereas the role of trust decreases over time. The impact of trust on customer intent to write a review initially increases (T) and then, gradually drops over time (T+1). According to the evolution of trust [70], the impact of trust increases due to consumers' interaction with a brand during the initial stage. However, our findings indicate that the effect of trust for writing a review decreases rapidly throughout restaurant visit episodes.

6.2. Managerial Implications

The dynamic nature of online reviews can be directly related to restaurants' managerial decisions because the impact of online reviews diminishes over time. Managers can sustain the indirect influence by considering the insignificance of the direct effect of online reviews. For example, it is a way to build customer trust through the usefulness of online reviews. The first priority is to activate the customer's voice or review board in the restaurant. Managers can allow customers to post photos, respond to reviews, provide promotions, and edit their business information. These approaches can help strengthen customer touchpoints and create sustainable online reviews.

Another implication is that consumer intent to write a review is not affected by customer satisfaction. If restaurant practitioners wish to improve the effect of customer

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satisfaction on triggering consumer intent to write a positive review, they should step up their efforts to get their customers to write positive reviews. Since consumers' intention to write a review is different from their behavioral intention of revisiting a restaurant, another option is to offer incentives for customers to write reviews. For example, an event in which coupons or discount vouchers are provided to customers who will leave a review on restaurant websites can be a clue to improving customer satisfaction by offering an incentive.

6.3. Limitations and Future Research Directions

This study exhibits some limitations that provide fruitful insights for future research. First, not all online reviews are equal. Since the effectiveness of both text and rated reviews may be different, future research should focus on the evolutionary difference between the two types of online reviews. An additional limitation is the evolution of intentions throughout restaurant visit episodes. Previous studies showed the significant longitudinal dynamics of behavioral intention, whereas not all emotional constructs trigger consumers' behavioral intentions. One alternative is the approach of whether consumers participate voluntarily or involuntarily. If this participation can be elucidated through longitudinal or experimental studies, we expect a re-examination of the coping framework.

7. Conclusions

Online reviews and their consequences evolve through different experience stages. Our findings show how online reviews partially lead to customer satisfaction and trust and then link to consumer intent to write a review through the subsequent restaurant revisit phases. In particular, we point out how the dynamic nature of online reviews decreases or dilutes over time. Our study adds to this literature stream by providing evidence for how customer satisfaction has no effect on customers' intention to write a review throughout the subsequent consumption phases. Consequently, our findings suggest that from the initial stage of online review search activity to the evolutionary stage of a consumption experience, researchers should focus on why online reviews evolve over time and how our findings can be extended and applied to existing theories. However, we also address theoretical and practical studies to explore the remaining areas of research.

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References

- Weiche, A. Online Reviews Study: Restaurants & Reviews. 2018. Available online: https://gatherup.com/blog/online-reviews-study-restaurants-reviews/ (accessed on 12 January 2022).
- 2. Simonson, I.; Rosen, E. What marketers misunderstand about online reviews. Harv. Bus. Rev. 2014, 92, 23–25.
- 3. Mathwick, C.; Mosteller, J. Online review engagement: The typology based on reviewer motivations. *J. Serv. Res.* **2017**, 20, 204–218. [CrossRef]
- 4. Thakur, R. Customer engagement and online reviews. J. Retail. Consum. Serv. 2018, 41, 48–59. [CrossRef]
- 5. Huifeng, P.; Ha, H. Temporal effects of online customer reviews on restaurant visit intention: The role of perceived risk. *J. Hosp. Mark. Manag.* **2021**, *30*, 825–844. [CrossRef]

Sustainability **2022**, 14, 4612 11 of 12

6. Luo, Y.; Xu, X. Comparative study of deep learning models for analyzing online restaurant reviews in the era of the COVID-19 pandemic. *Int. J. Hosp. Manag.* **2021**, *94*, 102849. [CrossRef] [PubMed]

- 7. Shang, Z.; Luo, J.M. Topic modeling for hiking trail online reviews: Analysis of the Mutianyu Great Wall. *Sustainability* **2022**, 14, 3246. [CrossRef]
- 8. Park, Y.J.; Joo, J.; Polpaunmas, C. Worse than what I read? The external effect of review ratings on the online review generation process: An empirical analysis of multiple product categories using Amazon.com review data. *Sustainability* **2021**, *13*, 10912. [CrossRef]
- 9. Cole, S. The hierarchy of the sciences? Am. J. Sociol. 1983, 89, 111–139. [CrossRef]
- 10. Bergkvist, L.; Eisend, M. The dynamic nature of marketing constructs. J. Acad. Mark. Sci. 2021, 49, 521–541. [CrossRef]
- 11. Hu, N.; Liu, L.; Zhang, J.J. Do online reviews affect product sales? The role of reviewer characteristics and temporal effects. *Inf. Technol. Manag.* **2008**, *9*, 201–214. [CrossRef]
- 12. Lau, T.; Cheung, M.L.; Pries, G.D.; Chan, C. Customer satisfaction with sommelier services of upscale Chinese restaurants in Hong Kong. *Int. J. Wine Bus. Res.* **2019**, *31*, 532–554. [CrossRef]
- 13. Zhang, Z.; Zhang, Z.; Law, R. Regional effects on customer satisfaction with restaurants. *Int. J. Contemp. Hosp. Manag.* **2013**, 25, 705–722. [CrossRef]
- 14. Erkmen, E.; Hancer, M. Building brand relationship for restaurants: An examination of other customers, brand image, trust, and restaurant attributes. *Int. J. Contemp. Hosp. Manag.* **2019**, *31*, 1469–1487. [CrossRef]
- 15. Jin, N.; Line, N.D.; Merkebu, J. The impact of brand prestige on trust, perceived risk, satisfaction, and loyalty in upscale restaurants. *J. Hosp. Mark. Manag.* **2016**, 25, 523–546. [CrossRef]
- 16. Peng, N. Luxury restaurants' risks when implementing new environmentally friendly programs: Evidence from luxury restaurants in Taiwan. *Int. J. Contemp. Hosp. Manag.* **2020**, *32*, 2409–2427. [CrossRef]
- 17. Yun, H.; Choi, K. A study on restaurant selection attribute and satisfaction using sentiment analysis: Focused on online reviews of foreign tourist. *Korean J. Hosp. Tour.* **2021**, *30*, 99–117. [CrossRef]
- 18. Park, C.; Namkung, Y. The effects of food Instagram quality attributes on trust and revisit intention. *Korean J. Hosp. Tour.* **2021**, 30, 15–36. [CrossRef]
- 19. Fanselow, M.S. Emotion, motivation and function. Curr. Opin. Behav. Sci. 2018, 19, 105–109. [CrossRef]
- 20. Baumeister, R.F.; Vohs, K.D.; DeWall, C.N.; Zhang, L. How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Personal. Soc. Psychol. Rev.* **2007**, *11*, 167–203. [CrossRef]
- 21. Ren, F. Affective information processing and recognizing human emotion. *Electron. Notes Theor. Comput. Sci.* **2009**, 222, 39–50. [CrossRef]
- 22. Ajzen, I.; Fishbein, M. Understanding Attitudes and Predicting Social Behavior; Prentice-Hall: Hoboken, NJ, USA, 1980.
- 23. Kratzwald, B.; Kraus, M.; Feuerriegel, S.; Prendinger, H. Deep learning for affective computing: Text-based emotion recognition in decision support. *Decis. Support Syst.* **2018**, *115*, 24–35. [CrossRef]
- 24. Oliver, R.L. Satisfaction: A Behavioral Perspective on the Consumer, 2nd ed.; M.E. Sharpe: New York, NY, USA, 1997.
- 25. Mittal, V.; Kumar, P.; Tsiros, M. Attribute-level performance, satisfaction, and behavioral intentions over time: A consumption-system approach. *J. Mark.* **1999**, *63*, 88–101. [CrossRef]
- 26. Lee, J.; Kim, Y. Online reviews of restaurants: Expectation-confirmation theory. J. Qual. Assur. Hosp. Tour. 2020, 21, 582–599. [CrossRef]
- 27. Mudambi, S.M.; Schuff, D. What makes a helpful review? A study of customer reviews on Amazon.com. *MIS Q.* **2010**, *34*, 185–200. [CrossRef]
- 28. Sparks, B.A.; Browning, V. The impact of online reviews on hotel booking intentions and perception of trust. *Tour. Manag.* **2011**, 32, 1310–1323. [CrossRef]
- 29. Bilgihan, A.; Seo, S.; Choi, J. Identifying restaurant satisfiers and dissatisfiers: Suggestions from online reviews. *J. Hosp. Mark. Manag.* **2018**, 27, 601–625. [CrossRef]
- 30. Bagozzi, R.P.; Dholakia, U.M. Goal setting and goal striving in consumer behavior. J. Mark. 1999, 64, 19–32. [CrossRef]
- 31. Ekinci, Y.; Dawes, P.L.; Massey, G.R. An extended model of the antecedents and consequences of consumer satisfaction for hospitality services. *Eur. J. Mark.* **2008**, 42, 35–68. [CrossRef]
- 32. Bitner, M.J.; Hubber, A. Encounter satisfaction versus overall satisfaction versus quality. In *Service Quality: New Directions in Theory and Practice*; Rust, R.T., Oliver, R.L., Eds.; Sage: Thousand Oaks, CA, USA, 1994; pp. 241–268.
- 33. Bagozzi, R.P. The self regulation of attitudes, intentions, and behavior. Soc. Psychol. Q. 1992, 55, 178-204. [CrossRef]
- 34. Morgan, R.M.; Hunt, S.D. The commitment-trust theory of relationship marketing. J. Mark. 1994, 58, 20–38. [CrossRef]
- 35. Sung, Y.; Kim, J. Effects of brand personality on brand trust and brand affect. Psychol. Mark. 2010, 27, 639–661. [CrossRef]
- 36. Agag, G.M.; El-Masry, A.A. Why do consumers trust online travel websites? Drivers and outcomes of consumer trust toward online travel websites. *J. Travel Res.* **2017**, *56*, 347–369. [CrossRef]
- 37. Kim, M.; Lee, C.K.; Chung, N.; Kim, W.G. Factors affecting online tourism group buying and the moderating role of loyalty. *J. Travel Res.* **2014**, *53*, 380–394. [CrossRef]
- 38. Chaudhuri, A.; Holbrook, M.B. The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *J. Mark.* **2001**, *65*, 81–93. [CrossRef]
- 39. Cowles, D.L. The role of trust in customer relationships: Asking the right questions. Manag. Decis. 1997, 35, 273–282. [CrossRef]

Sustainability **2022**, 14, 4612 12 of 12

40. Menidjel, C.; Benhabib, A.; Bilgihan, A. Examining the moderating role of personality traits in the relationship between brand trust and brand loyalty. *J. Prod. Brand Manag.* **2017**, *26*, 631–649. [CrossRef]

- 41. Beldad, A.; de Jong, M.; Steehouder, M. How shall I trust the faceless and the intangible? A literature review on the antecedents of online trust. *Comput. Hum. Behav.* **2010**, *26*, 857–869. [CrossRef]
- 42. Gregori, N.; Daniele, R.; Altinay, L. Affiliate marketing in tourism: Determinants of consumer trust. *J. Travel Res.* **2014**, *53*, 196–210. [CrossRef]
- 43. Johnson, D.; Grayson, K. Cognitive and affective trust in service relationships. J. Bus. Res. 2005, 58, 500–507. [CrossRef]
- 44. Ha, H.; John, J.; John, J.D.; Chung, Y. Temporal effects of information from social networks on online behavior: The role of cognitive and affective trust. *Internet Res.* **2016**, *26*, 213–235. [CrossRef]
- 45. Ha, H. The effects of online shopping attributes on satisfaction-purchase intention link: A longitudinal study. *Int. J. Consum. Stud.* **2012**, *36*, 327–334. [CrossRef]
- 46. Huang, C. The impact of brand experiences on brand loyalty: Mediators of brand love and trust. *Manag. Decis.* **2017**, *55*, 915–934. [CrossRef]
- 47. Pinillos, N.A. Skepticism and evolution. In *Pragmatic Encroachment in Epistemology*, 1st ed.; Kim, B., McGrath, M., Eds.; Routledge: New York, NY, USA, 2018.
- 48. Johnson, M.D.; Herrmann, A.; Huber, F. The evolution of loyalty intentions. J. Mark. 2006, 70, 122–132. [CrossRef]
- 49. Singer, J.D.; Willett, J.B. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*; Oxford University Press: Oxford, UK, 2003.
- 50. Brzozowska-Woš, M.; Schivinski, B. The effect of online reviews on consumer-based brand equity: Case study of the Polish restaurant sector. *Cent. Eur. Manag. J.* **2019**, 27, 2–27. [CrossRef]
- 51. Connelly, B.L.; Certo, S.T.; Ireland, R.D.; Reutzel, C.R. Signaling theory: A review and assessment. *J. Manag.* **2011**, *37*, 39–67. [CrossRef]
- 52. Zhao, Y.; Xu, X.; Wang, M. Predicting overall customer satisfaction: Big data evidence from hotel online textual reviews. *Int. J. Hosp. Manag.* **2019**, 76, 111–121. [CrossRef]
- 53. Lahno, B. On the emotional character of trust. Ethical Theory Moral Pract. 2001, 4, 171–189. [CrossRef]
- 54. Foodbank. What Successful Food Service Restaurants Have in Common during the Corona Virus? 2021. Available online: http://www.foodbank.co.kr/news/articleView.html?idxno=61625 (accessed on 12 January 2022).
- 55. National Restaurant Association. 2021 State of the Restaurant Industry Mid-Year Update. August 2021. Available online: https://restaurant.org/research/reports/state-of-restaurant-industry (accessed on 12 January 2022).
- 56. Filieri, R.; McLeay, F. E-WOM and accommodation: An analysis of the factors that influence travelers' adoption of information from online reviews. *J. Travel Res.* **2013**, *53*, 44–57. [CrossRef]
- 57. Senecal, S.; Nantel, J. The influence of online product recommendations on consumers' online choices. *J. Retail.* **2004**, *80*, 159–169. [CrossRef]
- 58. Fullerton, G. The service quality-loyalty relationship in retail services: Does commitment matter? *J. Retail. Consum. Serv.* **2005**, 12, 99–111. [CrossRef]
- 59. Ryu, K.; Han, H. Influence of the quality of food, service, and physical environment on customer satisfaction and behavioral intention in quick-casual restaurants: Moderating role of perceived price. *J. Hosp. Tour. Res.* **2010**, *34*, 310–329. [CrossRef]
- 60. Dixit, S.; Badgaiyan, A.J.; Khare, A. An integrated model for predicting consumers' intention to write online reviews. *J. Retail. Consum. Serv.* **2019**, *46*, 112–120. [CrossRef]
- 61. Bagozzi, R.P.; Yi, Y. Advanced topics in structural equation models. In *Advanced Methods of Marketing Research*; Bagozzi, R.P., Ed.; Blackwell: Hoboken, NJ, USA, 1994.
- 62. Wright, R.T.; Campbell, D.E.; Thatcher, J.B.; Roberts, N. Operationalizing multidimensional constructs in structural equation modeling: Recommendations for IS research. *Commun. Assoc. Inf. Syst.* **2012**, *30*, 367–412. [CrossRef]
- 63. Thompson, B. Exploratory and Confirmatory Factor Analysis: Understanding Concepts and Applications; American Psychological Association: Washington, DC, USA, 2004.
- 64. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 1981, 18, 39–50. [CrossRef]
- 65. Park, J.; Jang, S. Why do customer switch? More satisfied or less satisfied. Int. J. Hosp. Manag. 2014, 37, 159–170. [CrossRef]
- 66. Duan, W.; Gu, B.; Whinston, A.B. Do online review matter? An empirical investigation of panel data. *Decis. Support Syst.* **2008**, 45, 1007–1016. [CrossRef]
- 67. Huifeng, P.; Ha, H.; Lee, J. Perceived risks and restaurant visit intentions in China: Do online customer reviews matter? *J. Hosp. Tour. Manag.* **2020**, *43*, 179–189. [CrossRef]
- 68. Felbermayr, A.; Nanopoulos, A. The role of emotions for the perceived usefulness in online customer reviews. *J. Interact. Mark.* **2016**, *36*, 60–76. [CrossRef]
- 69. Xu, X. Examining consumer emotion and behavior in online reviews of hotels when expecting managerial response. *Int. J. Hosp. Manag.* **2020**, *89*, 102559. [CrossRef]
- 70. Mcknight, D.H.; Kacmar, C.J.; Choudhury, V. Shifting factors and the ineffectiveness of third party assurance seals: A two-stage model of initial trust in a web business. *Electron. Mark.* **2004**, *14*, 252–266. [CrossRef]