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Effect of consistency of the review set on causal attribution the moderating roles of repeating purchase cues and product knowledge

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Effect of consistency of the review set on causal attribution: the moderating roles of repeating purchase cues and product knowledge

Abstract

Purpose – The study examines the potential moderating effects of repeating purchase cues and product knowledge on the relationship between the varying consistency of the review set and causal attribution. This study also investigates how causal attribution correlates with the perceived misleadingness of the review set.

Design/methodology/approach – A scenario-based experiment was conducted with 170 participants to explore the relationship between the consistency of the review set and causal attribution and how repeating purchase cues and product knowledge moderates this relationship.

Findings – Findings suggest that inconsistent review sets lead to more product (vs. reviewer) attribution than consistent review sets. The repeating purchase cues mitigate the negative relationship between the consistency of the review set and product attribution, whereas product knowledge mitigates the positive relationship between the consistency of the review set and reviewer attribution. Furthermore, results indicate that high product attribution and low reviewer attribution are associated with low perceived misleadingness.

Originality/value – This study is novel because it examines the moderating effects of repeating purchase cues and product knowledge on the relationship between the consistency of the review set and causal attribution. It adds to the literature by shedding light on the causal attribution process underlying the formation of perceived misleadingness of online reviews. The findings of this study provide valuable insights for managers on how to enhance the positive effects of consistent review sets and mitigate the negative effects of inconsistent review sets.

Keywords Consistency of the review set, Causal attribution, Repeating purchase cue, Product knowledge, Misleadingness

Paper type Research paper

1. Introduction

Imagine shopping for a new keyboard online. As you dive into online reviews, you encounter two scenarios. One keyboard has exclusively positive reviews, making you wonder if it is too good to be true. The other keyboard has mixed reviews: some praise its features and performance, while others express frustration with various issues. This discrepancy may leave you uncertain about which opinions to trust. These scenarios

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3 illustrate our research focus: How do consumers attribute reviews to product and
4 reviewer attributes in the face of the varying consistency of the review set? How does
5 this causal attribution affect their perceived misleadingness of the review set?
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8 Online reviews are considered a critical source of consumer-generated information on
9 e-commerce platforms (Vali *et al.* 2021; Wang *et al.* 2023; Xu *et al.* 2020). Studies
10 have consistently shown that online reviews have substantial effects on potential
11 customers' purchase behavior (Choi *et al.*, 2019), service perceptions (Gao *et al.*, 2015),
12 information adoption (Lee and Yang, 2015), and decision-making processes (Chong *et*
13 *al.*, 2018; Thies *et al.*, 2016).
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17 However, the sheer abundance of online reviews and their associated signals can
18 overwhelm and confuse consumers, leading to information overload and the risk of
19 cognitive overload (Jabr and Rahman, 2022). Despite the importance of online reviews,
20 Trustpilot reports that over 80% of consumers doubt their authenticity, with an
21 increasing number of consumers reporting concerns that they may encounter fake
22 reviews (Paget, 2023). This situation introduces a sense of deception among consumers
23 and complicates their ability to make informed purchasing decisions (Kim *et al.*, 2019).
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27 Consistent positive review sets, where products or merchants have exclusively high
28 ratings and positive reviews, can raise doubts about their credibility, making consumers
29 perceive them as misleading (He and Bond, 2015). This perception of misleadingness
30 may stem from the potential unethical business practice of review manipulation,
31 whereby companies craft consistent review sets themselves or ask customers to remove
32 inconsistent negative reviews to improve their ratings (Nie *et al.*, 2022). Conversely,
33 inconsistent review sets, as featured by Yin *et al.* (2023), include a blend of positive
34 and negative reviews that convey conflicting viewpoints, either in their rating sentiment
35 or content. Such sets can also trigger doubts about a product or merchant's quality
36 because the negativity bias may prompt consumers to focus on negative aspects (Qahri-
37 Saremi and Montazemi, 2023). Both scenarios contribute to the perception of online
38 reviews as misleading, affecting individual consumers' decision-making and eroding
39 consumer confidence in the online market (Darke *et al.*, 2010), which poses a
40 significant challenge for e-commerce managers. Therefore, businesses must find ways
41 to reduce perceived misleadingness and help consumers make good purchasing
42 decisions.
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48 The concept of perceived misleadingness of reviews has received limited attention
49 despite extensive research on consumers' evaluation of online reviews (Chiou *et al.*,
50 2018; Liu *et al.*, 2021). Previous research has suggested that consumers can assess the
51 credibility of reviews by inferring the motivation behind writing them (He and Bond,
52 2015) and that the attribution of reviews can provide valuable information to readers
53 (Chen and Lurie, 2013). However, the process of causal attribution underlying the
54 formation of misleading perceptions has not been investigated. Furthermore, although
55 previous studies found that review consistency has a significant impact on consumers'
56 post-purchase evaluation and behaviors (Liu *et al.*, 2020), limited focus has been given
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3 to the moderators that may affect the influence of varying review consistency or cross-
4 review incoherence on causal attribution. Thus, to address these gaps, this study aims
5 to investigate the effect of consistency of the review set on the causal attribution of
6 products or reviewers who write the reviews. Based on the attribution theory (Hansen
7 and Scott, 1976), we propose that consistent (vs. inconsistent) review sets lead to more
8 reviewer attribution but less product attribution. Subsequently, product attribution
9 negatively influences the perceived misleadingness of the review set, whereas reviewer
10 attribution is positively associated with the perceived misleadingness of the review set.
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15 Prior research has also established that consumers' causal attribution of online reviews
16 is affected by various external information cues, including review dispersion (He and
17 Bond, 2015) and temporal contiguity (Chen and Lurie, 2013), as well as by internal
18 characteristics, such as emotion (Yin *et al.*, 2014) and personality traits (Liu *et al.*,
19 2021). This study proposes that external information (i.e., the presence of repeating
20 purchase cues, indicating multiple observations or purchases over time) and internal
21 cognitive resources (i.e., consumers' product knowledge) may influence the causal
22 attribution process when evaluating online reviews. A scenario-based experiment
23 employing a 2 (review set consistency: consistent vs. inconsistent) \times 2 (repeating
24 purchase cues: without vs. with) between-subjects design was conducted to examine
25 these propositions.
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30 This article contributes to the existing literature in several ways. First, it enhances our
31 understanding of causal attribution by presenting evidence for the moderating effects
32 of repeating purchase cues and product knowledge on the relationship between the
33 consistency of the review set and causal attribution. This study sheds light on the
34 moderating role of external information (i.e., the presence of repeating purchase cues)
35 and internal cognitive resources (i.e., consumers' product knowledge), which are
36 previously unexamined factors that influence the negative relationship between
37 consistent (vs. inconsistent) review sets and product attribution. Second, it contributes
38 to the online review literature by exploring a crucial yet frequently neglected factor, the
39 perceived misleadingness of the review set and its association with causal attribution.
40 Specifically, we scrutinize the causal attribution of consistency or inconsistency of the
41 review set and how to mitigate the perceived misleadingness of the review set. Finally,
42 this research provides valuable insights for managers concerned about the misleading
43 perception of online reviews.
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48 **2. Literature review**

49 *2.1 Valence consistency/inconsistency of online reviews*

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51 Online reviews play a significant role in influencing various aspects of consumer
52 behavior, including purchase behavior (Choi *et al.*, 2019), service perceptions (Gao *et al.*,
53 2015), and decision-making (Thies *et al.*, 2016). Extensive literature has explored
54 the role of various factors of online reviews, with particular emphasis on review valence
55 (i.e., the sentiment and emotions conveyed by reviews, whether positive or negative),
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3 which has been identified as a crucial determinant of consumers' purchase behavior
4 (Qiu *et al.*, 2012; Ravichandran and Deng, 2023). A consistent finding is that although
5 positive reviews lead to more positive attitudes, negative reviews are perceived as more
6 useful (Purnawirawan *et al.*, 2015). Consumers tend to allocate more attention to
7 negative reviews during decision-making, as evidenced by a recent eye-tracking study
8 suggesting longer processing times and increased focus on areas of negative
9 information (Chen *et al.*, 2022). Furthermore, negative reviews evoke higher levels of
10 arousal in consumers (Fox *et al.*, 2018).
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15 In addition to comparing positive versus negative reviews, recent studies have started
16 to examine the role of valence consistency/inconsistency (Purnawirawan *et al.*, 2015).
17 For instance, review balance, defined as the ratio of positive to negative reviews,
18 provides more comprehensive information than review valence alone because it reflects
19 average ratings and rating dispersion (Yang *et al.*, 2016). Wang *et al.* (2022) found that
20 two-sided reviews containing positive and negative information are perceived as more
21 credible and informative than one-sided reviews that focus solely on a single polarity.
22 In addition, when consumers read online reviews, they consider the consistency
23 between review text and star rating (Aghakhani *et al.*, 2021). However, Fan *et al.* (2022)
24 revealed that review sidedness negatively impacts online review helpfulness. Namvar
25 and Chua (2023) also suggested that new reviews that differ significantly in positive
26 sentiment and word choice compared to existing reviews are less beneficial.
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31 In real-world scenarios, consumers are exposed to sets of reviews encompassing
32 positive and negative feedback (Mudambi and Schuff, 2010). The consistency of the
33 review set, also known as coherence across the set, has been recognized as a crucial
34 determinant of the effectiveness of online reviews in shaping consumer attitudes and
35 behaviors (Yin *et al.*, 2016). Previous studies have found that high consistency within
36 a review set, characterized by agreement among most reviews, positively influences
37 consumers' attitudes and purchase intentions (Cheung *et al.*, 2012; Jensen and Yetgin,
38 2017). Prior research has focused primarily on examining the consistency of the review
39 set through a positive evaluation lens, neglecting the possible negative consequences of
40 review set consistency. In contrast to the prevailing literature, our present study shifts
41 its focus to the negative evaluation perspective, specifically investigating how the
42 assessment of the review set can lead to perceived misleadingness.
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47 *2.2 Perceived misleadingness*

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50 Regarding the effects of online reviews, the extant literature has examined consumers'
51 perceptions of online reviews, such as credibility (Chiou *et al.*, 2018), helpfulness (Liu
52 *et al.*, 2021), value (Chen and Lurie, 2013), and attitudes (Purnawirawan *et al.*, 2012).
53 Scholars have also investigated consumer behaviors influenced by online reviews, such
54 as recommendation (Lee and Youn, 2009) and purchase intention (Bae and Lee, 2011).
55 These factors are related to consumers' approach tendencies. However, given the
56 abundance of online reviews and the presence of inconsistencies, consumers can
57 potentially generate avoidance tendencies, such as misleadingness perception. A
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3 misleading perception is when the information presented in online reviews or the
4 overall review content gives rise to inaccurate or deceptive inferences or impressions
5 on the product or service being reviewed (Hastak and Mazis, 2011). Perceived
6 misleadingness makes it difficult for consumers to distinguish between good and bad
7 products, and fosters increased suspicion towards vendors and the online market (Darke
8 *et al.*, 2010). Consequently, examining how the consistency/inconsistency of the review
9 set can influence consumers' perceived misleadingness is crucial; however, this topic
10 has received limited attention in previous research on evaluating online reviews.
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14 *2.3 Attribution theory*

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17 Consumers' perceived misleadingness of online reviews is closely tied to the causal
18 attribution process undertaken by review readers. Attribution theory is a psychological
19 framework that explores how individuals make judgments about the causes of behavior,
20 including their actions and the actions of others (Kelley, 1973). In organizational
21 psychology, attribution theory can be applied to examine how employees attribute their
22 performance outcomes (e.g., success or failure) to internal (e.g., effort and ability) or
23 external (e.g., luck or team dynamics) causes, which can affect motivation and job
24 satisfaction (Harvey *et al.*, 2014). In social psychology, attribution theory can help
25 explain how people attribute blame or responsibility in various social situations, such
26 as attributing the cause of a car accident to the driver's reckless behavior or adverse
27 road conditions (Alicke, 1992). In the context of online reviews, researchers apply
28 attribution theory to analyze how consumers attribute positive or negative feedback in
29 reviews to product quality or biased reviewers (Chen and Lurie, 2013).
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35 According to Kelley's (1973) covariation model, people attribute behavior to internal
36 or external factors based on three key dimensions: consistency, consensus, and
37 distinctiveness. Consistency refers to whether behaviors are consistent over time,
38 highlighting the temporal aspect; consensus focuses on whether different subjects
39 produce similar reactions, and distinctiveness relates to whether certain attributions can
40 be extended to other similar situations. However, in the context of online reviews,
41 review inconsistency refers to a mixture of positive and negative reviews that convey
42 contradictory perspectives, either in their rating sentiment or content (Shan *et al.*, 2021;
43 Yin *et al.*, 2023). Following this stream of literature, we use "consistent review sets" to
44 refer to consistent or similar opinions across different consumer reviews and
45 "inconsistent review sets" to describe review sets containing both positive and negative
46 reviews.
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51 External information cues and internal consumer characteristics affect consumers'
52 causal attribution. Prior research has demonstrated that consumers' causal attribution
53 of online reviews is influenced by various external information cues, such as review
54 extremity (Mudambi and Schuff, 2010), review dispersion (He and Bond, 2015),
55 temporal contiguity (Chen and Lurie, 2013), conflicting aggregated rating (Qiu *et al.*,
56 2012), aspect ratings (Li *et al.* 2020), and product type (Mudambi and Schuff, 2010).
57 Internal consumer characteristics, such as users' emotions (Yin *et al.*, 2014) and
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3 personality traits (Liu *et al.*, 2021), also significantly affect consumers' causal
4 attribution and decision-making behavior. Our study differs from prior research
5 because it examines the presence of repeating purchase cues and product knowledge as
6 new factors influencing consumers' causal inference processes within online reviews.
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10 Previous literature has suggested that online reviews containing contextual information
11 and time-related sentences improve recommendation performance (Bauman and
12 Tuzhilin, 2022). Research has also indicated that repurchase intention and frequent
13 purchases enhance review persuasiveness (Ravula *et al.*, 2022). However, our study
14 concentrates on the causal attribution of reviews containing the moderating role of the
15 presence of repeating purchase cues, an area not previously investigated. Moreover, a
16 limited number of studies have examined the moderating role of consumer product
17 knowledge in evaluating online reviews (Cheung *et al.*, 2012). Few studies have
18 investigated the influence of consumer knowledge on their causal attribution to
19 different consistent online review sets. Our study addresses this research gap by
20 incorporating repeating purchase cues and product knowledge into our model and
21 examining how these factors interact with the consistency of the review set in shaping
22 the causal attribution and misleadingness of online reviews.
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27 **3. Theoretical background and hypotheses**

28 *3.1 Consistency of the review set and causal attribution*

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32 Attribution theory provides a framework for understanding how individuals make
33 causal inferences regarding the behavior of others. These causal inferences are typically
34 based on two main sources of causation: personal and environmental factors (Folkes,
35 1988). In evaluating online reviews, consumers tend to attribute the content of reviews
36 to either product-relevant (e.g., characteristics or quality of the reviewed product) or
37 reviewer-related factors (e.g., traits, personality, motivation, emotion, or attitudes of the
38 reviewer). Individuals tend to make different causal inferences when encountering
39 positive and negative information. Consistent review sets predominantly convey
40 positive information, and inconsistent review sets, which include positive and negative
41 information, are likely to elicit different attributional responses from consumers.
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46 For consumers encountering a consistently positive review set, consistent opinions
47 from different people tend to favor product attribution over reviewer attribution. As the
48 inconsistency in review opinions grows, individuals are more inclined to attribute this
49 variance to reviewer characteristics. Nevertheless, consistently positive review sets
50 have become common because of the prevalence of promotional and sometimes
51 fabricated positive reviews in the online marketplace. Consequently, readers are more
52 inclined to attribute these evaluations to factors associated with the reviewers, such as
53 their motivations or biases. First, social norms drive individuals to provide positive
54 information (Burtch *et al.*, 2018). Research on informational cascades (Bikhchandani
55 *et al.*, 1998) and herding behavior (Lee *et al.*, 2015) show that the excess of positive
56 reviews relative to negative ones prompts consumers to write consistent positive
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3 reviews in line with others, disregarding their judgments. Second, with the increasing
4 significance of online reviews, businesses have been employing financial incentives
5 (Qiao *et al.*, 2020; Yu *et al.*, 2022) and conditional rebate strategies (Chen *et al.*, 2022)
6 to encourage consumers to generate positive review sets. Such practices may intensify
7 consumers' tendency to attribute reviewers' motivations for writing reviews when
8 review sets are consistently positive. In such cases, consumers are more likely to
9 consider social norms and external incentives as the main contributors to positive
10 reviews rather than the genuine qualities of the product. Previous empirical studies have
11 also indicated that consumers attribute consistently positive review sets to reviewers'
12 personal factors, such as emotions, traits, and motivations (Chen and Lurie, 2013).
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17 Conversely, inconsistent review sets are more likely to be attributed to the actual
18 qualities of the product being reviewed. First, from the perspective of correspondence
19 inference theory, socially undesirable information is more likely to reveal distinctive
20 attributes of the object. Hence, negative information holds greater value for the observer
21 than positive information, rendering reviews containing negative information more
22 persuasive (Sparks *et al.*, 2016). In the context of online reviews, negative information
23 in inconsistent review sets provides consumers with more valuable and comprehensive
24 information for evaluating whether a product is of high or low quality. Second, opinions
25 different from other reviews are more likely to be attributed to the product itself,
26 especially for utilitarian products (He and Bond, 2015). In domains where preferences
27 are assumed to align closely (e.g., smartphones), consumers anticipate that reviewers
28 who have had a very similar product experience will provide similar evaluations. When
29 evaluating inconsistent review sets, consumers understand that varying opinions and
30 assessments can arise due to the product's inherent qualities. Consequently, when
31 encountering inconsistent review sets, consumers are more inclined to attribute the
32 disparities to the product quality or performance rather than the reviewers.
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38 Based on these premises, we propose the following hypothesis:
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41 *H1.* Compared with consistent review sets, inconsistent review sets are associated with
42 more product (vs. reviewer) attribution.
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44 *3.2 Repeating purchase cues*

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46 According to attribution theory (Hansen and Scott, 1976), the repeated observation of
47 a cause-effect relationship over time influences the process of inferring causality.
48 Kelly's (1973) covariation model indicated that temporal consistency leads to internal
49 attribution. Within online reviews, the presence of words or phrases indicating repeated
50 or continuous purchase behavior over time is expected to strengthen readers' attribution
51 that the product is the primary cause of the review. These repeating purchase cues in
52 reviews, signaling multiple purchases or continued use of the reviewed product over
53 time, can enhance the confidence of potential consumers in the review writer's claims
54 about product quality.
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3 Based on hypothesis H1, it is anticipated that consistent review sets will demonstrate
4 lower levels of product attribution and higher levels of reviewer attribution compared
5 to inconsistent review sets. Nevertheless, the negative association between the
6 consistency of the review set and product (vs. reviewer) attribution can be alleviated by
7 including repeating purchase cues. Specifically, the presence of repeating purchase cues
8 plays a moderating role by augmenting the level of product attribution while reducing
9 the prominence of reviewer attribution in consistent review sets instead of inconsistent
10 review sets. The reason is that repeating purchase cues, which convey positive
11 information on multiple purchases and extended usage duration, contribute to greater
12 attribution to the excellent properties of the product and limited attribution to the
13 reviewer factors. This reasoning aligns with the consistent positive nature of review
14 sets with repeating purchase cues, making them more likely to be attributed to the
15 product. By contrast, inconsistent review sets are associated with negative product
16 evaluations, contradicting the positive inference elicited by repeating purchase cues.
17 Attributing inconsistent review sets to the product may be challenging for review
18 readers.
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24 Furthermore, multiple purchases in such sets may increase attribution to the review
25 writer. Inconsistencies within review sets with repeating purchase cues may lead
26 readers to question the reliability or credibility of the reviewers. Therefore, repeating
27 purchase cues plays a mitigating role in the association between the consistency of the
28 review set and causal attribution. This effect is achieved by enhancing product
29 attribution and diminishing reviewer attribution in consistent review sets relative to
30 inconsistent ones.
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34 Based on these discussions, the following hypotheses are formulated:
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37 *H2a.* The presence of repeating purchase cues mitigates the negative relationship
38 between the consistency of the review set and product attribution.
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41 *H2b.* The presence of repeating purchase cues mitigates the positive relationship
42 between the consistency of the review set and reviewer attribution.
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45 *3.3 Product knowledge*

46 Consumers' causal attribution of online reviews is influenced by external information
47 and internal cognitive resources. According to the accessibility–diagnosticity theory
48 (Feldman and Lynch, 1988), the accessibility of consumers' cognitive resources affects
49 their evaluation of online reviews. Consumers with high product knowledge generally
50 possess more cognitive resources for evaluating the product during the inference
51 process than those with low product knowledge. Our study further proposes the
52 moderating role of product knowledge in the relationship between the consistency of
53 the review set and causal attribution. Based on H1, consistent review sets are expected
54 to exhibit lower levels of product attribution and higher levels of reviewer attribution
55 compared to inconsistent review sets. However, the negative association between the
56 consistency of the review set and product attribution and the positive association
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3 between the consistency of the review set and reviewer attribution can be alleviated
4 through product knowledge. More specifically, product knowledge acts as a mitigating
5 factor, counteracting the negative relationship between the consistency of the review
6 set and product attribution while attenuating the positive relationship between the
7 consistency of the review set and reviewer attribution.
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11 Consumers with low product knowledge cannot dismiss the importance of inconsistent
12 review sets (Ahluwalia, 2000). Consumers with low product knowledge rely more on
13 nonanalytic inferences than those with high product knowledge, making them
14 susceptible to inferential biases, such as negativity bias (Qahri-Saremi and Montazemi,
15 2023). They are more inclined to accept the viewpoints of reviewers and attribute
16 unfavorable aspects to the product rather than the reviewer. They may attribute
17 inconsistent review sets to the product instead of the reviewer.
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21 Conversely, when encountering inconsistent review sets, consumers with high product
22 knowledge tend to have greater cognitive capacities and product-related knowledge to
23 form personal inferential beliefs on the reviews (Park and Kim, 2008). They are more
24 confident in their familiarity with most product-related attributes than consumers with
25 low product knowledge. Consequently, their inference process may be bolstered by the
26 accessibility of existing product knowledge, leading consumers with high product
27 knowledge to attribute inconsistent review sets to the reviewer's self-serving motives
28 rather than the product's features. Compared to consumers with low product knowledge,
29 those with high product knowledge are more inclined to attribute consistent review sets
30 to significant product features rather than factors related to reviewers. Hence, product
31 knowledge assumes a mitigating function in the relationship between the consistency
32 of the review set and both product attribution and reviewer attribution.
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37 Based on these considerations, we put forward the following hypotheses:
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40 *H3a.* Product knowledge mitigates the negative relationship between the consistency
41 of the review set and product attribution.
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44 *H3b.* Product knowledge mitigates the positive relationship between the consistency of
45 the review set and reviewer attribution.
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48 *3.4 Perceived misleadingness of the review set*

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50 Consumers often infer the underlying motivations of the reviewers behind their
51 postings when they engage with online reviews (Sen and Lerman, 2007). These
52 inferences on the reviewer's motivation can subsequently influence consumers'
53 perceptions. In this context, a crucial aspect of perception is the perceived
54 misleadingness of reviews, which is influenced by the product (vs. reviewer) attribution
55 of reviews. When reviews are attributed to the product, consumers perceive them as
56 containing objective product quality and performance information. However, when
57 reviews are attributed to the reviewer, consumers perceive them as containing
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3 subjective information reflecting the reviewer's personality and emotional expression.
4 Objective information tends to be perceived as less misleading than subjective
5 information. Consumers who experience positive emotions are more likely to write
6 consistent review sets. However, their positive emotions may be influenced by the
7 excellent product and other factors, such as their mood influenced by external stimuli,
8 other individuals, or other reviews. According to the theory of emotions as social
9 information, expressing extreme emotions in online reviews reduces readers' perceived
10 helpfulness (Yin *et al.*, 2021). Thus, reviews are more likely to be perceived as
11 misleading if they are attributed more to reviewer factors, such as emotions.
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16 Furthermore, self-selection biases exist in online reviews, including acquisition bias
17 (where most consumers with a favorable predisposition acquire products and write
18 reviews) and underreporting bias (where consumers with extreme ratings are more
19 inclined to write reviews compared with those with moderate product ratings; Hu *et al.*,
20 2017). These biases are related to reviewer attribution. Consumers who attribute more
21 to the reviewer are more likely to recognize these self-selection biases, leading to a
22 higher perception of online reviews as misleading.
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26 Consequently, we propose that higher attribution to the product (vs. reviewer) will
27 result in a lower perception of misleadingness in reviews. Consumers generally agree
28 that reviews attributed more to the product are more informative and persuasive than
29 reviews attributed to the reviewer (Chen and Lurie, 2013). In addition, the value of a
30 review decreases as it becomes more attributed to causes unrelated to the product
31 because potential consumers seek more information on product quality rather than the
32 reviewer. Conversely, reviewer-related attribution is associated with the reviewer's
33 emotions or characteristics, leading consumers to view the review as more misleading.
34 By contrast, product attribution leads consumers to believe the review contains valuable
35 information and is thus perceived as less misleading.
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40 Based on these considerations, we propose the following hypotheses:

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42 *H4a.* The more a review set is attributed to the product, the less perceived
43 misleadingness of the review set will be.
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46 *H4b.* The more a review set is attributed to the reviewer, the more perceived
47 misleadingness of the review set will be.
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50 Figure 1 summarizes the research framework.
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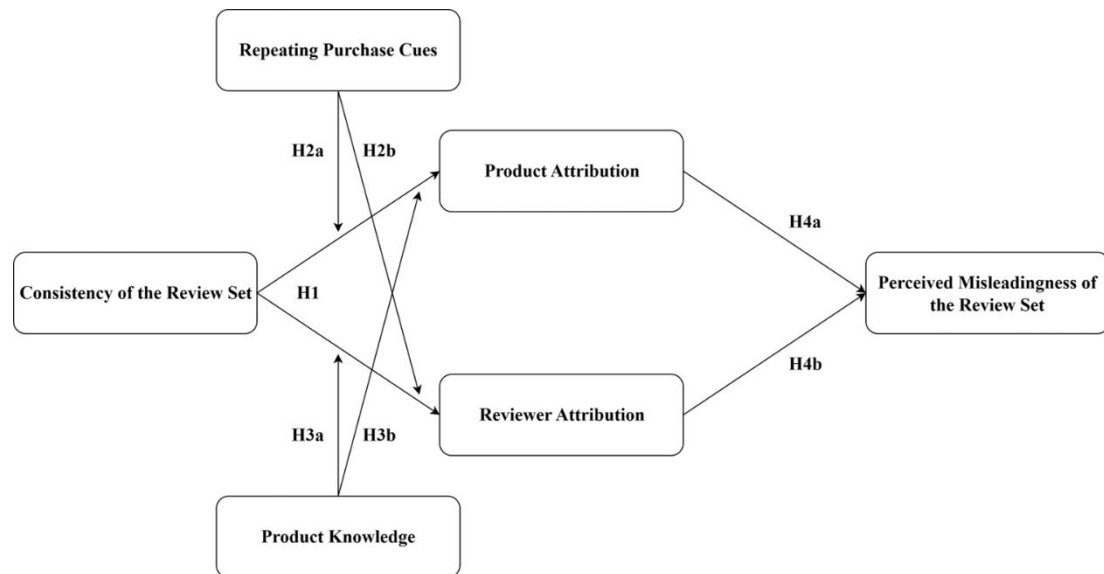


Figure 1. Research framework and hypotheses

4. Research method

4.1. Experimental design

To test our hypotheses, a 2 (repeating purchase cues: without vs. with) \times 2 (consistency of the review set: consistent vs. inconsistent) full-factorial between-subjects design scenario-based experiment was conducted. Participants engaged with a scenario and were asked to envision themselves in the depicted situation. Then, we gathered questionnaire responses to gauge participants' perceptions and responses. Consumer product knowledge was a measured variable used to classify participants into consumers with high or low product knowledge.

4.2. Experimental stimuli

Four websites were created using a website builder to represent different experimental conditions in a 2 \times 2 design. Each website consisted of five reviews focusing on a pencil product, simulating the experience of consumers examining a series of reviews during their shopping process. The reviews were randomly selected from Amazon.com and Google Shopping, ensuring the reliability and generalizability of the study. We confirmed that the distribution of reviews followed the J-distribution, as established by previous research (Moon *et al.*, 2014).

All reviews were consistently positive in the consistent review sets, with star ratings of either 5 or 4. Meanwhile, the inconsistent review sets included a mixture of positive reviews with star ratings of 5 and negative reviews with star ratings of 2. To manipulate the presence of repeating purchase cues, half of the reviews were designed to include specific phrases, such as "again," "several times," "repetitive purchase," "during the last few years," and similar expressions indicating repeated purchases. The remaining

reviews did not contain such repeating purchase cues. An example of the website design for consistent review sets with repeating purchase cues is presented in Figure 2. Figure 3 illustrates the website design for inconsistent review sets with repeating purchase cues.

The screenshot displays the website for M&H Office Supplies LTD. The main heading is "Paper Mate Sharpwriter Mechanical Pencils" with a "Contact Us" button. Below this is a "Consumer Reviews" section. Each review includes a star rating, the reviewer's name, a paragraph of text, and a highlighted sentence in a red box labeled "Repeating purchase cue".

1- Star rating ☆☆☆☆☆ *Mike Davis*

This is the best pencil I've ever used. Just a quick twist and it is ready to go. Also I love the eraser because it does not really smudge. Despite other mechanical pencils, you do not need to refill this one due to the great lead capacity. I think this pencil has the correct size grip, so you never get tired of writing for a long time.

I have been using this pencil for three years. **Repeating purchase cue**

2- Star rating ☆☆☆☆☆ *Sam Jones*

This pencil is very simple to operate. Eraser is exciting and it erases completely what I have written without leaving a black mark. These are simple pencils that do not require replacement of lead. The grip design is perfect so I do not have to stretch my fingers to hold the pencil.

I started using this pencil when I started my college 5 years ago. **Repeating purchase cue**

3- Star rating ☆☆☆☆☆ *Chris Hooper*

Retracting allows you to get the "just right" amount of lead.

Similar to other pencils, the eraser smudges easily. Also this pencil is not refillable so you have to throw it away when it is out of lead. Another critique of this pencil is that its grip is a bit uncomfortable.

Despite of all these issues I've always come back to this pencil in last few years. **Repeating purchase cue**

4- Star rating ☆☆☆☆☆ *Rachel Heibert*

Twist lead advancement versus clicking is a giant plus for this product. The erasers work very well. Since the lead does not break you never need to refill the pencil. The grip design is similar to traditional pencils so you do not feel pain in your fingertips while writing.

I started and finished my undergrad using this pencil. **Repeating purchase cue**

5- Star rating ☆☆☆☆☆ *Melanie More*

I find these pencils easy to use. The eraser is effective and despite other pencils, I use the eraser as long as I use the pencil. This pencil is that economical so refilling is not necessary at all. Also the pencil is comfortable to hold when writing for a couple of hours.

I used this pencil 4 years ago for the first time and cannot stop using it since then **Repeating purchase cue**

Figure 2. Design of consistent review sets with repeating purchase cues

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M&H Office Supplies LTD.

Paper Mate Sharpwriter Mechanical Pencils [Contact Us](#)

Consumer Reviews

1- Star rating ★★★★★ *Mike Davis*

This is the best pencil I've ever used. Just a quick twist and it is ready to go. Also I love the eraser because it does not really smudge. Despite other mechanical pencils, you do not need to refill this one due to the great lead capacity. I think this pencil has the correct size grip, so you never get tired of writing for a long time.

I have been using this pencil for three years. **Repeating purchase cue**

2- Star rating ★★★★★ *Sam Jones*

The grip design is perfect and you do not feel any pain even after using this pencil for a while.

It is not easy to use this pencil. Twisting is not efficient and it is hard to get the lead length that you want. The erasers on these pencils are totally worthless and smudge easily. It is almost impossible to refill this pencil when is out of lead.

I started using this pencil 5 years ago when I was at college. **Repeating purchase cue**

3- Star rating ★★★★★ *Chris Hoofer*

The good point of this pencil is the grip design and it got a great grip for someone with arthritic hands.

You cannot get a consistent lead length every time for the same amount of twist. The eraser makes a mess and smudges too much. This pencil is not refillable and you have to throw it away when it is out of lead.

Sometimes I try other models but I always comeback to this one. **Repeating purchase cue**

4- Star rating ★★★★★ *Rachel Heibert*

I like the grip design which is similar to the traditional pencils so you do not feel pain in your fingertips while writing.

It twists while writing and the lead disappears. I've tried several of them and same issue. Also the eraser is hard & does not work well and smudges. I wish it was refillable. This design makes you spend more money on it.

I started and finished my undergra using this pencil. **Repeating purchase cue**

5- Star rating ★★★★★ *Melanie More*

I find these pencils easy to use. The eraser is effective and despite other pencils, I use the eraser as long as I use the pencil. This pencil is that economical so refilling is not necessary at all. Also the pencil is comfortable to hold when writing for a couple of hours.

I used this pencil 4 years ago for the first time and cannot stop using it since then. **Repeating purchase cue**

46 **Figure 3.** Design of inconsistent review sets with repeating purchase cues

47 Notes: For better readability, we have highlighted the term "Repeated Purchase Cue" in red.
48 Please note that it was not displayed during the actual experiment.

51 4.3. Measures

52 We assessed causal attribution using a measure adapted by Frank and Gilovich (1989).
53 We measured product attribution by asking the subjects to indicate how large a role the
54 product-using experience (e.g., ease of use, refill ability, eraser, and grip handling)
55 played in the decision to write the review using a nine-point scale (1 = "a minimal role,"
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3 and 9 = “a maximal role”). We measured reviewer attribution by asking the subjects to
4 indicate how large personal role factors (e.g., the reviewer’s personality, personal style,
5 traits, character, mood, and attitudes) played in the reviewer’s decision to write the
6 review using a nine-point scale (1 = “a minimal role,” and 9 = “a maximal role”). We
7 measured the perceived misleadingness of reviews by asking the subjects to indicate to
8 what degree this online review is misleading using a nine-point scale (1 = “not at all
9 misleading,” and 9 = “very misleading”). For the above measures, we asked the
10 participants to indicate their score for each review in the review set and finally use the
11 average value of measures as the measure of the review set.
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16 Consumers’ product knowledge is measured with three seven-point items adapted from
17 Chiou *et al.* (2002) and Park *et al.* (1994) (e.g., “I am knowledgeable about this pencil’s
18 attributes;” 1 = “strongly disagree,” and 7 = “strongly agree”). The product knowledge
19 scale demonstrated excellent internal consistency (Cronbach’s $\alpha = 0.85$).
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22 For the control variables, we used five seven-point items to measure general attitudes
23 toward reviews developed by Park and Kim (2008) (e.g., “When I buy a product online,
24 I always read online reviews that are presented on websites;” 1 = “strongly disagree,”
25 and 7 = “strongly agree”). The internal consistency of the general attitudes toward
26 reviews scale was excellent (Cronbach’s $\alpha = 0.89$). We used four items to measure the
27 need for cognition developed by Cacioppo *et al.* (1984) (e.g., “I really enjoy a task that
28 involves coming up with new solutions;” 1 = “strongly disagree,” and 7 = “strongly
29 agree”). The internal consistency of the need for cognition scale was excellent
30 (Cronbach’s $\alpha = 0.91$), indicating high reliability.
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34 We validated the measurement model by performing factor analysis for all constructs,
35 including product attribution, reviewer attribution, perceived misleadingness, product
36 knowledge, need for cognition, and general attitudes toward reviews. The analysis
37 revealed that the factors accounted for a total variance of 76.889%. The Kaiser–Meyer–
38 Olkin value of 0.789 indicated a strong correlation between variables and suitability for
39 factor analysis. Bartlett’s sphericity test ($p < 0.001$) also confirmed the correlation
40 among variables, validating the effectiveness of the factor analysis. The factor loadings
41 of all items were above 0.7, and the average variance extracted (AVE) for each
42 construct exceeded 0.5, indicating that each construct explained over 50% of the
43 variance in its indicators, satisfying the criteria for convergent validity. The results
44 demonstrated good discriminant validity of the measurement model, as the square root
45 of the AVE for each variable exceeded the correlation coefficient with other constructs.
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50 51 4.4. Subjects, incentives, and procedures

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53 A total of 170 student subjects were recruited from an engineering course at a public
54 university in the United States. Following previous studies (Becerra *et al.*, 2023; Chans
55 and Portuguese Castro, 2021; King *et al.*, 2022; Shaikh, 2022), the participants were
56 informed that their voluntary participation would entitle them to receive 1% extra point
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toward their final grade. To a certain extent, participation in the experiment reflects students' attendance and active engagement in the classroom.

Participants first answered questions about their personal traits and background information, including their product knowledge of pencils. Subsequently, they were randomly assigned to one of four experimental conditions. The participants were instructed to imagine themselves in a scenario where they intended to purchase a pencil. Then, they were presented with a stimulus website containing reviews. The participants had to confirm they had thoroughly read all the information before proceeding to the questionnaire. The questionnaire aimed to elicit the participants' causal attribution regarding the causes of the reviews they had encountered and their perceptions of misleadingness. After the questionnaire, the participants were asked several questions to assess the effectiveness of the experimental manipulations.

5. Results

5.1. Sample demographics and manipulation check

After deleting samples that did not pass the attention check question, 170 effective samples were acquired. The sample size in each group is shown in Table I.

Table I Sample size in each group

Group	Inconsistent review sets	Consistent review sets
Without repeating purchase cues	N = 26	N = 47
With repeating purchase cues	N = 38	N = 59

Notes: The distribution of participants in our study mirrors real-world patterns. Pencils, the product of interest, are everyday items frequently purchased, which is why more participants could be observed in groups that include repeating purchase cues. Furthermore, the consistency review sets group had more samples because positive reviews with consistent expressions are common in real-life situations.

Of the 170 participants, 130 identified as male, whereas 40 identified as female. The majority of the participants (65%) fell within the age range of 18 to 25, with the remaining participants being older than 25. All the participants were students, 43 of which were graduate students and the remaining 127 were undergraduates.

Regarding the manipulation check, we asked the subjects three questions (e.g., "These online reviews advocated different points of view on this pencil;" 1 = "strongly disagree," and 7 = "strongly agree") to measure the inconsistency of the review set. The results revealed the subjects in the conditions of the consistent review sets regarded the reviews as less inconsistent than those in the conditions of the inconsistent review sets ($p < 0.001$). All the subjects in the condition with repeating purchase cues had more perceived repeating purchase cues ($p < 0.005$). Therefore, our manipulations were successfully administered.

5.2. Results of hypothesis testing

5.2.1 *Consistency of the review set and causal attribution.* To test H1, we used repeated measures analysis of variance (ANOVA) (consistent/inconsistent review sets 2×2 product/reviewer attribution) to analyze the data in the condition without repeating purchase cues. Given that the participants' causal attribution was measured in the forms of product and reviewer attributions, we used repeated measures ANOVA to test the difference in relative strength between product and reviewer attributions. The results show that compared to consistent review sets, and inconsistent review sets are positively associated with product (vs. reviewer) attribution ($F(1, 72) = 3.19, p < 0.1$, see Figure 4), supporting H1.

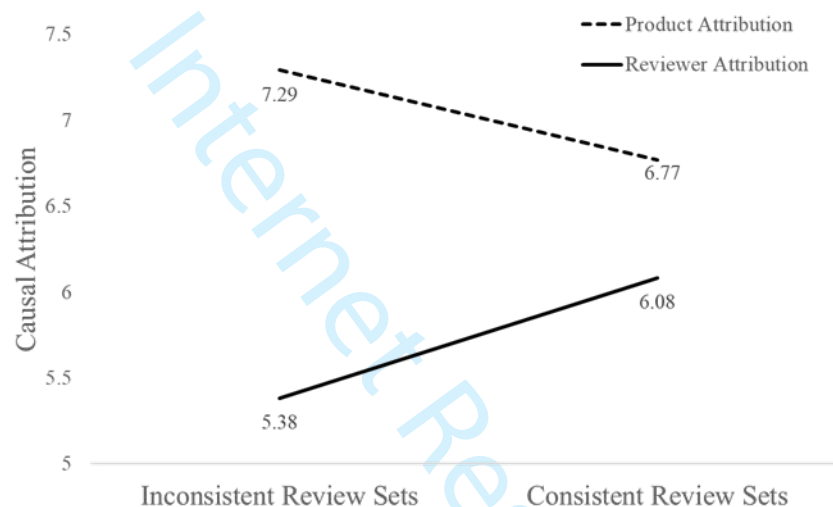


Figure 4. Attribution differences between consistent and inconsistent review sets group

5.2.2 *Moderating effect of repeating purchase cues.* The above results show that inconsistent review sets were significantly more attributed to the product (vs. reviewer) when repeating purchase cues were absent than consistent review sets. However, this difference in causal attribution for consistent versus inconsistent review sets was no longer statistically significant ($F(1, 94) = 0.033, p > 0.1$) when repeating purchase cues were present. We used multivariate analysis of covariance (MANCOVA) (consistent/inconsistent review sets 2×2 with/without repeating purchase cues) with the dependable variables, including product and review attributions, as well as the control variables, including the need for cognition and general attitudes toward reviews to examine how the presence of repeating purchase cues moderates the relationship between consistency of the review set and causal attribution.

We analyzed the results related to product and reviewer attributions to test H2a and H2b. For product attribution, the MANCOVA results revealed a significant interaction effect between the consistency of the review set and the presence of repeating purchase

cues on product attribution ($F(1, 164) = 3.87, p < 0.05$, see Figure 5). We added the total review score as an additional control variable into the model to increase robustness, and this interaction effect was still significant ($F(1, 163) = 3.55, p < 0.1$). Moreover, we incorporated gender as an additional control variable into the model, and the interaction effect remained significant ($F(1, 163) = 4.15, p < 0.05$). Thus, H2a is supported. Specifically, the presence of repeating purchase cues increased product attribution to a greater extent for consistent review sets ($M_{\text{consistent_with}} = 7.63$ vs. $M_{\text{consistent_without}} = 6.77$; $t = 2.94, p < 0.01$) than inconsistent review sets ($M_{\text{inconsistent_with}} = 7.35$ vs. $M_{\text{inconsistent_without}} = 7.29, t = -0.18, p > 0.1$). However, the interaction effect between the consistency of the review set and the presence of repeating purchase cues on reviewer attribution is insignificant ($F(1, 164) = 0.43, p > 0.1$). Hence, H2b is not supported. These results show that repeating purchase cues work primarily by increasing the product attribution of consistent review sets.

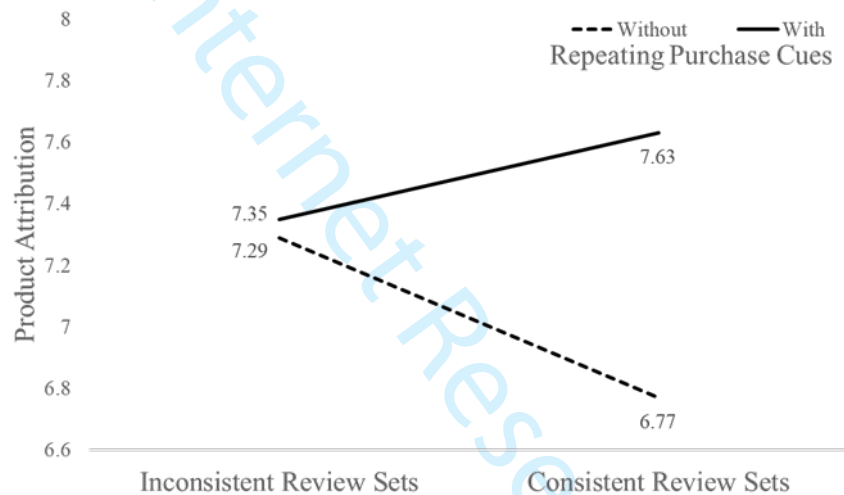


Figure 5. Product attribution as a function of consistency of the review set and repeating purchase cues

5.2.3 Moderating effect of product knowledge. We conducted a MANCOVA (consistent/inconsistent review sets 2×2 high/low product knowledge) with the control variables, including the need for cognition and general attitudes toward reviews to test H3. Participants with an average product knowledge score above the median value of 4 were classified into the high product knowledge group. In contrast, the remaining participants were classified into the low product knowledge group. Table II shows the sample size in each group.

Table II Sample size in each group

Group	Inconsistent review sets	Consistent review sets
Low product knowledge	N = 22	N = 35
High product knowledge	N = 42	N = 71

Notes: Pencils are a common and widely used product, and thus, it is reasonable to expect that more individuals would know about them, leading to a larger sample size for the high product knowledge group.

Regarding product attribution, the interaction effect between the consistency of the review set and product knowledge on product attribution is insignificant ($F(1, 164) = 0.27, p > 0.1$). Thus, H3a is not supported.

For reviewer attribution, the MANCOVA results revealed a significant interaction between the consistency of the review set and consumer product knowledge on reviewer attribution ($F(1, 164) = 4.27, p < 0.05$, see Figure 6). We added the total review score as an additional control variable into the model to increase robustness, and the interaction effect remained significant ($F(1, 163) = 4.24, p < 0.05$). Moreover, we incorporated gender as an additional control variable into the model, and the interaction effect remained significant ($F(1, 163) = 3.97, p < 0.05$). Hence, H3b is supported. For consumers with low product knowledge, consistent review sets were more attributed to the reviewer than inconsistent ones ($M_{\text{inconsistent_low}} = 4.65$ vs. $M_{\text{consistent_low}} = 6.08$; $t = -2.40, p < 0.05$). However, for consumers with high product knowledge, the reviewer attribution of consistent and inconsistent review sets was not significantly different ($M_{\text{inconsistent_high}} = 6.19$ vs. $M_{\text{consistent_high}} = 6.06$; $t = 0.29, p > 0.1$). These results show the difference in reviewer attribution primarily results from consumers with low product knowledge who have less reviewer attribution for inconsistent review sets.

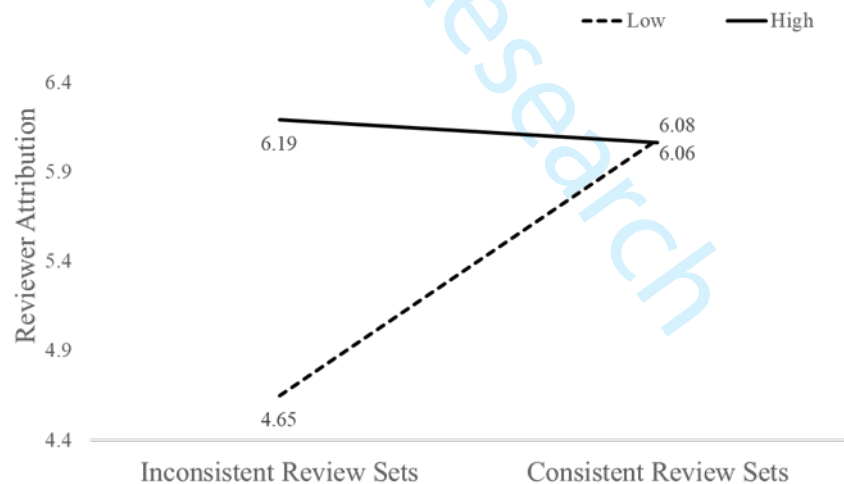


Figure 6. Reviewer attribution as a function of consistency of the review set and product knowledge

5.2.4 Perceived misleadingness. We have demonstrated that product knowledge and repeating purchase cues affect causal attribution, but how causal attribution associates with the perceived misleadingness of the review set remains unknown. To test the

relationship between the perceived misleadingness of the review set and product or reviewer attribution, we conducted regression with the perceived misleadingness of the review set as the dependent variable and product and reviewer attributions as independent variables. The results show a significant negative coefficient of product attribution ($\beta = -0.24$, $t = -2.32$, $p < 0.05$) and a significant positive coefficient of reviewer attribution ($\beta = 0.14$, $t = 1.99$, $p < 0.05$). When the consistency of the review set, repeating purchase cues, and product knowledge as control variables to the regression analysis, the coefficient of product attribution remained significantly negative ($\beta = -0.22$, $t = -2.16$, $p < 0.05$), and the coefficient of reviewer attribution was still significantly positive ($\beta = 0.17$, $t = 2.43$, $p < 0.05$). Thus, when the review set is attributed more to the product or less to reviewers, the perceived misleadingness of the review set decreases, which supports H4a and H4b.

6. Discussion

6.1. Summary of findings

The present study investigates what factors affect the consistency of the review set's causal attribution and its relationship with the perceived misleadingness of the review set. Our findings confirm inconsistent review sets are significantly more attributed to the product (vs. reviewer) than consistent ones. We demonstrate that external information cues (i.e., repeating purchase cues) and internal cognitive resources (i.e., product knowledge) can affect the causal attribution of the review set. Moreover, high product attribution and low reviewer attribution are associated with less misleadingness of the review set, suggesting that consumer causal attribution plays a crucial role in shaping consumers' perceived misleadingness of the review set.

6.2. Theoretical contributions

The study sheds light on how to mitigate the perceived misleadingness of the review set by focusing on the effect of consistency or inconsistency of the review set's causal attribution. This article makes significant contributions to the existing literature in multiple ways.

First, this study contributes to the literature on online review consistency by analyzing the degree of consistency within review sets and exploring factors that influence such consistency. In contrast to previous studies that focused on a single review (Wang *et al.*, 2022) or the inconsistency between review text and star rating (Aghakhani *et al.*, 2021), our research examines the influence of review consistency on the overall degree of review sets. We also go beyond existing studies that have demonstrated the positive effects of consistent review sets and the negative effects of inconsistent review sets (Yin *et al.*, 2023) by exploring methods to enhance or mitigate these effects. Moreover, this study goes beyond the narrow focus on individual reviews or isolated aspects of review content by examining the degree of consistency within review sets and its influence on the overall degree of review sets. This approach contributes to a more

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3 holistic understanding of online review ecosystems, shedding light on the collective
4 impact of multiple reviews on consumer perceptions and decisions.
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7 Second, our work contributes to the literature by identifying repeating purchase cues as
8 an essential and previously unexplored factor in the causal attribution of online reviews.
9 However, past research has investigated the influence of external information, such as
10 different product types (utilitarian vs. hedonic; Sen and Lerman, 2007), temporal
11 contiguity cues ((Chen and Lurie, 2013), conflicting aggregated rating (Qiu *et al.*,
12 2012), on causal attribution in online reviews, limited attention has been given to the
13 presence of repeating purchase cues. Our study provides compelling evidence of the
14 interaction effect between the presence of repeating purchase cues and the consistency
15 of the review set on causal attribution. We explore this previously unexplored role of
16 repeating purchase cues and uncover how they enhance product attribution within
17 consistent review sets.
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22 Third, this study significantly contributes to the product knowledge literature by
23 examining the moderating effect of product knowledge on causal attribution within
24 review sets of different consistencies. Although previous research has highlighted the
25 influence of internal characteristics, such as personality traits (Liu *et al.*, 2021), on
26 consumers' causal attribution and decision-making behavior, internal cognitive
27 resources, such as consumer product knowledge, have not been given sufficient focus.
28 Furthermore, to our knowledge, no prior research has investigated the interaction effect
29 between product knowledge and the consistency of the review set. Our study fills this
30 gap by revealing that consumers with low product knowledge are more likely to
31 attribute inconsistencies within review sets to the product instead of the reviewer,
32 thereby expanding our understanding of how internal cognitive resources come into
33 play when interacting with the consistency of the review set.
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38 Finally, it addresses an often-overlooked factor in the online review literature—the
39 perceived misleadingness of the review set. Although existing literature has focused
40 primarily on consumers' perceptions of online reviews, such as credibility (Chiou *et al.*,
41 2018), helpfulness (Liu *et al.*, 2021), value (Chen and Lurie, 2013), and attitudes
42 (Purnawirawan *et al.*, 2012), the issue of misleadingness within the evaluation of online
43 reviews has received limited attention. This study fills this gap by investigating how
44 the perception of misleadingness is linked to the causal attribution of reviews. By
45 exploring this relationship, the study contributes to a more comprehensive
46 understanding of online reviews, emphasizing the importance of considering the
47 misleadingness aspect.
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52 *6.3. Practical implications*

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54 Our study explores strategies to amplify the positive effects of consistent review sets
55 and alleviate the negative effects of inconsistent review sets, thereby providing practical
56 insights for practitioners.
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3 Given that repeating purchase cues increase the product attribution of consistent review
4 sets to a greater extent than inconsistent review sets, marketers can encourage
5 consumers who have made multiple purchases to share their experiences on online
6 review platforms. These loyal customers can be motivated to be opinion leaders to
7 actively talk about their excellent product and emphasize their repeating purchase times
8 in their online reviews. In addition, managers are suggested to indicate the consumers'
9 cumulative purchase times in the consumers' online reviews. Reviews with repeating
10 purchase cues can lead to other consumers' attribution to excellent product quality.
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14 Our research reveals that consumers with high product knowledge are less susceptible
15 to negativity bias in online reviews. Consumers with limited product knowledge tend
16 to attribute inconsistent review sets to the product rather than the reviewer. To
17 counteract the negative perception of product quality caused by inconsistent review
18 sets, managers can emphasize the importance of consumer product knowledge. One
19 effective approach is fostering online communities that share product information and
20 enhance consumers' brand awareness. By promoting such product knowledge-centered
21 communities, managers can mitigate the influence of negativity bias and improve
22 consumers' perception of product quality.
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27 This study significantly contributes to businesses by enhancing our understanding of
28 diverse causal attributions in online reviews. Our investigation reveals that external
29 informational cues, particularly repeating purchase cues, strongly affect product
30 attribution, whereas internal cognitive resources, such as product knowledge, influence
31 reviewer attribution. Importantly, this research sheds light on the influences of product
32 and reviewer attributions on consumers' perceptions of misleadingness in online
33 reviews. By promoting the presence of repeating purchase cues and enhancing
34 consumers' product knowledge, thus encouraging greater product (vs. reviewer)
35 attribution within consistency review sets, businesses can effectively mitigate the
36 perceived misleadingness of the review set, which results in consumers having more
37 informed decision-making and improved trust in online reviews.
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42 *6.4. Limitations and future work*

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45 Although this research divides the motivation for writing online reviews into product
46 attribution versus reviewer attribution, future research can further explore different
47 attributions in more subdivisions. For instance, readers might attribute consistent
48 review sets to writers' social desirability motives, self-enhancement, or financial
49 incentives. To enrich the understanding of the psychological processes that will affect
50 the influence of online reviews, the inference process to examine how information cues
51 work should be explored in detail.
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55 Moreover, additional variables may moderate the relationships within our model. For
56 example, the type of product (utilitarian vs. hedonic, search vs. experience, high vs. low
57 involvement, high vs. low price) could potentially moderate the influence of review set
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3 consistency on attributions. Therefore, further research is necessary to test the proposed
4 model with different types of products.
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7 Furthermore, future research could expand the literature by investigating the
8 consequences of other types of information or personal traits in online review systems,
9 such as the display format, presentation order, and other elements. By conducting
10 further studies on online review systems, academic researchers can enhance their
11 understanding of how consumers process multiple sources of information. In addition,
12 marketers and third-party infomediaries can utilize these findings to improve their
13 systems and support consumers' online purchasing decisions.
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16 17 **7. Conclusion** 18

19 In conclusion, this study employed a scenario-based experiment to explore the impact
20 of review set consistency on causal attribution (product vs. reviewer attribution), the
21 moderating effects of repeating purchase cues and consumers' product knowledge, and
22 the impact of causal attribution on misleadingness perception. This research makes
23 substantial contributions to the field. First, it advances the causal attribution literature
24 by providing empirical evidence of the moderating role played by the presence of
25 repeating purchase cues and product knowledge in the relationship between consistency
26 of the review set and causal attribution, shedding light on previously unexplored factors
27 that mitigate the negative association between consistency of the review set and product
28 attribution. Second, it contributes to the online review literature by addressing the often-
29 overlooked factor of review set misleadingness and its intricate link with causal
30 attribution, specifically focusing on the causal attribution of review set consistency or
31 inconsistency and strategies for mitigating review set misleadingness. Ultimately, this
32 study offers valuable insights of practical relevance to managers concerned about the
33 misleading aspects of online reviews.
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40 41 **Acknowledgements** 42

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