

The Impact of Selected Factors on Consumer Responses to Conflicting Online Consumer Reviews

A Thesis Submitted

In Partial Fulfillment of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

by

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(2017HSZ0007)



DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES
INDIAN INSTITUTE OF TECHNOLOGY ROPAR

January, 2025

Aun Ahmed: *The Impact of Selected Factors on Consumer Responses to Conflicting Online Consumer Reviews*

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Acknowledgment

I am incredibly fortunate to have had the support of many remarkable people throughout my dissertation journey. First and foremost, my profound gratitude goes to Dr. Amritesh, my mentor and advisor. His unwavering trust, insightful guidance, and constant support were invaluable. I could not have completed this dissertation without his belief in me. I am also immensely grateful to my doctoral committee members: Dr. Somdev Kar, Dr. Samaresh Bardhan, Dr. Parwinder Singh, and Dr. Arti Pandey. Their keen eyes and insightful suggestions significantly improved the quality of my dissertation.

A special thanks goes to my colleagues in the Department of Humanities and Social Sciences at the Indian Institute of Technology Ropar. Their support, camaraderie, and stimulating discussions made this journey much richer.

My deepest appreciation extends to my parents, parents-in-law, and siblings. Their unwavering encouragement and love throughout my Ph.D. studies were a constant source of strength.

Finally, my heartfelt thanks go to my wife, Sara, and my sons, Abdullah and Omar. Words cannot express my gratitude for your love, care, encouragement, unwavering support, and understanding. Having you by my side throughout this remarkable experience has been the greatest blessing.

Lay Summary

This dissertation examines how online consumer reviews (OCRs) influence buyer decisions, especially when the OCRs offer mixed signals. Since both companies and shoppers heavily rely on OCRs, understanding their impact is key to navigating the modern marketplace. The study acknowledges that while OCRs are widely used to gauge product quality and make purchase decisions, not all information found in OCRs is clear-cut; often, OCRs present conflicting opinions that can confuse potential customers. At the heart of this work is exploring how people process these conflicting OCRs and how certain factors—like a person’s ability to embrace contradictions (dialecticism) and the power of mental imagery—influence customer attitudes and actions. Through four studies, including looking at different product scenarios such as renting a houseboat, buying earphones, and booking hotel stays, the research uncovers some intriguing dynamics. Key findings suggest that conflicting OCRs can sometimes harm the likelihood of a product being recommended by consumers, but this effect is lessened in (high-dialecticism) individuals who are more comfortable with contradictory information. Additionally, the research explores how visual elements accompanying OCRs can enhance a customer’s willingness to book a hotel despite encountering conflicting opinions. In summary, this dissertation sheds light on how consumers interact with conflicting OCRs and highlights important considerations for businesses wanting to leverage OCRs to impact customer decision-making positively.

Abstract

Online consumer reviews (OCRs) carry economic value for businesses, and consumers rely on them to reduce perceived risks and enhance predictability before buying a product or service. Nevertheless, the near-ubiquitous prevalence of conflicting information in OCRs poses challenges to both consumers and OCR-platform managers. The OCR literature is inconclusive with regard to the effect of conflicting OCRs on consumer attitudes and behaviors and presents contradictory empirical findings. This underscores the necessity for a deeper exploration into the dynamics at play. Accordingly, this dissertation aims to elucidate the moderation of the effect of conflicting OCRs on consumers' OCR processing outcomes. Specifically, it explores the effects of a personal factor, namely dialecticism, and a contextual factor, mental imagery, on the impact of conflicting OCRs on consumer attitudes and intentions. Utilizing a verbal protocol analysis in Study 1, the research probes into how consumers navigate through and process discrepancies inherent in OCRs. Building upon the insights gleaned from Study 1, a conceptual framework delineating the influence of conflicting OCRs on consumer attitudes and behavioral intentions was developed. The framework's robustness was subsequently tested across three online experiments, each situated within distinct consumption contexts: a houseboat rental (Study 2), earphone purchase (Study 3), and hotel accommodation booking (Study 4). The findings from Study 1 illustrate the nuanced ways consumers interact with conflicting OCRs, including instances where conflicting information is sought after to bolster decision-making confidence. In Study 2, it was observed that the presence of conflicting OCRs adversely impacted consumers' recommendation intentions, a phenomenon that was mitigated among individuals with high levels of dialectical thinking. Furthermore, the negative influence of conflicting OCRs on attitude confidence - a mediator in the relationship with recommendation intentions - was similarly moderated by dialectical thinking. Aiming to validate these insights in a different product category, Study 3 replicated the experiment with a search product while also introducing a different operationalization of conflict within OCRs. The findings largely paralleled those of Study 2, albeit with the moderation effect of dialectical thinking on direct product evaluations not holding. Finally, Study 4's exploration into the role of mental imagery, induced by images accompanying OCRs, unveiled a positive moderation effect on the nexus between conflicting OCRs and hotel booking intentions. This dissertation contributes to the burgeoning literature on OCRs by attempting to resolve the inconsistencies in the past literature. The four studies shed light on the nuanced effects of conflicting information, underscored by the interplay of personal and contextual factors. These insights advance academic discourse and offer pragmatic implications for businesses in leveraging OCRs to foster a conducive consumer decision-making environment.

List of publications

Journals

Ahmed, A., & Amritesh. (2023). Information processing from electronic word of mouth: an integrative framework. *International Journal of Electronic Marketing and Retailing*, 14(4), 371-393.

Conferences

Ahmed, A., Amritesh (2023) The effect of conflicting online ratings on hotel recommendation intentions: moderation and mechanism In BAM 2023: *British Academy of Management Conference*. University of Sussex, September 01, 2023.

Ahmed, A., Amritesh (2019), “Persuasion from Electronic Word of Mouth: An Integrative Dual Process Model”, *International Conference on Digital Economy (ICDE)-2019*, IIM Raipur, India, December 6-8, 2019.

Ahmed, A., & Amritesh. (2018). Electronic Word-of-mouth (eWOM) Processing: A Three-stage Dual-process Model. *PANIITIMC 2018 Conference*, IIT Roorkee, Nov. 30 - Dec 02, 2018.

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Chapter 1

Introduction

1.1 Research background

A fundamental principle of consumer behavior is that consumers are susceptible to interpersonal influence (Litvin et al., 2008). Word-of-mouth (WOM) is an age-old tool for interpersonal influence and a source of information for consumers. A company's most valuable customers are not those who buy the most but rather those who bring new, profitable customers through their WOM referrals. Kumar et al. (2007) have experimentally demonstrated that companies that designed marketing campaigns to influence high-CRV (customer referral value) customers to gain new customers realized more than double the marketing ROI of other companies in the same industry.

The "bidirectional characteristic" of the Internet and the advent of Web 2.0 have led to the digitization of WOM and the creation of huge WOM networks (Dellarocas, 2003). Unlike traditional or face-to-face WOM, digital WOM facilitates consumer information search and is characterized by huge reach and permanence since it typically remains on the web, whereas spoken WOM is quickly lost (Bickart & Schindler, 2001; Gavilan et al., 2018). Moreover, research has revealed that WOM is more influential and credible than marketer-generated information (Katz & Lazarsfeld, 1955; Bickart & Schindler, 2001; Godes & Mayzlin, 2004). Thus, it is natural for marketers to seek to manage and influence consumers' WOM activities (Litvin et al., 2008), a phenomenon termed word-of-mouth marketing (WOMM). The Internet has enhanced marketers' ability to influence and monitor WOM like never before (Kozinets et al., 2010). However, it has also created challenges because of the anonymity of WOM communicators (Litvin et al., 2008) and the actual or perceived deception in content (Petrescu et al., 2022; Petrescu et al., 2023; Román et al., 2019). Moreover, the Internet is "inundated with conflicting

information" (Ku et al. 2021). Therefore, marketers need fresh knowledge to better understand, interpret, and manage digital WOM (Gavilan et al., 2018; Litvin et al., 2008).

Digital WOM has been referred to as online word-of-mouth (e.g., King et al., 2014; Sun et al., 2006) and electronic WOM or eWOM (e.g., Hennig-Thurau et al., 2004). eWOM has garnered the attention of both marketers and academic researchers (Cheung & Thadani, 2012). The academic interest in eWOM has come from diverse disciplines such as electronic commerce, consumer research, tourism and hospitality, management, marketing, and information systems. The meaning of eWOM was not clearly elucidated in the literature. The meaning of eWOM was not clearly elucidated in the literature so Babić Rosario et al. (2020) conducted an exhaustive review of the eWOM literature published from 1996 to 2019 and offered the following definition of eWOM: "consumer-generated, consumption-related communication that employs digital tools and is directed primarily to other consumers" (p. 427). The majority of eWOM research has paid attention to one type of eWOM — online consumer reviews (OCRs) (Cheung & Thadani, 2012). According to research conducted with over 30,000 global consumers, Bazaarvoice found that 88% of shoppers rely on online consumer reviews (OCRs) for product evaluation and making confident purchase decisions. Additionally, 80% of consumers trust OCRs as much as personal recommendations (Invesp, n.d.). Most OCR research has primarily focused on Western consumers. However, Indian consumers differ significantly from their Western counterparts, both culturally and linguistically (Singh et al., 2017). Additionally, their motivations for writing online reviews are shaped by distinct cultural factors (Kaur, K., & Singh, T. (2021b). Despite these differences OCRs are equally popular amongst Indian consumers — 85% actively seek product reviews alongside other product information before making a purchase (Kaur & Singh, 2021a). Recognizing the growing reliance on OCRs, the Department of Consumer Affairs, under the Ministry of Consumer Affairs, Food & Public Distribution, introduced the Indian Standard IS 19000:2022 to regulate the "collection, moderation, and publication" of online consumer reviews (Press Information Bureau, n.d.). The impact of OCRs is more pronounced for experience (versus search) goods, where consumers can only evaluate the product after use (Litvin et al., 2008). Beyond benefiting consumers, OCRs provide substantial value to businesses. For

instance, a one-star increase in Yelp ratings is associated with a 5-9% increase in revenue (Invesp, n.d.). With consumer interaction with OCRs having risen by 50% since pre-pandemic levels (PowerReviews, 2021), the need for an in-depth study of OCRs has become more crucial than ever.

OCRs are a specific aspect of the broad construct of eWOM (Zablocki et al., 2019; p. 63). Mudambi and Schuff (2010) define OCRs as "peer-generated product evaluations posted on company or third-party websites" (p. 186). Zheng (2021) provides a more comprehensive definition: "peer-generated evaluations of a product, service, or content regarding price, function, performance, or usage experience in the form of text, images, or videos" (p. 226). Indeed, with technological advancements and the rise of modern OCR platforms, OCRs come in a hybrid format containing text, plus photos, and videos (Wu et al., 2021). Thus, this dissertation considers different facets of OCRs, such as conflicting information and the presence of images.

The literature on conflicting OCRs presents mixed findings. Some studies suggest positive consumer outcomes, such as increased helpfulness or higher acceptance of novel products (Lee et al., 2021; Wu et al., 2021). However, others report adverse effects, including lower credibility, helpfulness, ambivalence, and dissonance (Qiu et al., 2012; Lee & Baek, 2021; Siddiqi & Akhtar, 2021; Xu & Jin, 2022). Firm outcomes, such as sales, also show contradictory results, with some studies finding increased sales due to high OCR variance, while others report decreased sales (Etumnu et al., 2020; Wang et al., 2015). These inconsistencies suggest the need to investigate moderating factors. Researchers have explored interactions between review, product, and consumer characteristics. The objectives of this dissertation are to:

- Provide deeper insights into how Indian consumers process OCRs.
- Focus on key moderators to explain the mixed empirical evidence on the downstream impact of conflicting OCRs.
- Uncover the underlying psychological mechanisms driving these responses.

Specifically, the dissertation investigates the role of dialecticism and mental imagery in the processing of conflicting OCRs. According to the theory of dialecticism (Peng & Nisbett, 1999), people vary in their tendency to accept conflicting information and low dialectical thinkers prefer consistency. Conversely, high dialectical thinkers process conflicting information more fluently. The degree of fluency with which people process information can have downstream consequences, such as liking a product or perceiving the information as true (Graf et al., 2018). Dialectical thinking helps decision makers incorporate and synthesize conflicting information (Kahle & Liu, 2000). Consumers engaging in a more dialectical thinking are likely to resolve the conflicting OCRs and their product evaluations will be impacted (DeMotta et al., 2009).

Much of the consumer behavior literature has investigated descriptive information processing, mental imagery processing is gaining traction (MacInnis & Price, 1987). As more and more consumer interactions with products and product information becomes digital, understanding imagery processing becomes more crucial. Mental imagery processing relies partly on information stored in the memory, but memory and imagery are distinct in that the former focuses on prior experiences whereas the latter focused on the future (e.g., an upcoming consumption or purchase) (Elder & Krishna, 2022). In their seminal article, MacInnis and Price (1987) proposed that consumers engaging in mental imagery processing will evaluate fewer products and attach a higher probability to their decision outcomes. OCRs contain both visual and verbal information and because of the virtual environment in which they occur. Consumers are very likely to engage in mental imagery processing if such visual cues are available, when they come across contradictory verbal information.

1.2 Research problem

Cognitive conflict arising from conflicting information is a 'prominent characteristic' of OCRs (Liu & Karahanna, 2017), and it can affect consumer decision-making and choice (Zhang et al., 2016). Conflicting OCRs arise because of disagreement among reviewers (Zablocki, et al., 2019), which manifests into mixed reviews (Lim &

Lee, 2019) or inconsistent reviews (Byun et al., 2021). Any form of conflicting information reflects a lack of consensus among the reviewers. The degree of consensus is effectively captured by the dispersion of the ratings, which is visible at the top of most OCR platforms. Variance of the OCRs captures the degree of conflict information in OCRs. OCRs can contain conflicting information a variety of ways. For example, the aggregate rating and the individual rating may be inconsistent (e.g., Qiu et al., 2012), conflicting information about product attributes (e.g., Liu & Karahanna, 2017), inconsistency between the review text and the corresponding rating (e.g., Aghakhani et al., 2021). Among the three characteristics — valence, volume, and variance — of online reviews, variance, has received the least attention in the literature (He & Bond, 2015). However, variance moderates the impact of valence and volume on consumer outcomes such as brand attitudes (Zablocki et al., 2019). Prior literature is inconclusive about the effects of conflicting reviews on consumer outcomes such as attitudes and product adoption (Hwang et al., 2018; Wu et al., 2021) and firm outcomes, for example, product sales (Wang et al., 2015). For example, Qiu et al. (2012) found that conflicting OCRs decrease their credibility whereas Cheung et al., (2009) found that conflicting OCRs are more credible. Prior research has considered product categories (Park & Park, 2013; He & Bond, 2015), level of brand familiarity (Lim & Lee, 2019), or different consumer characteristics as moderating variables to understand the differential effects of conflicting information on consumer responses to OCRs.

Therefore, this dissertation seeks to address the mixed findings on consumer responses to conflicting OCRs. To this end, we explore the role of moderating variables and add to and extend prior research by examining when consumers are likely to respond less or more favorably to conflicting OCRs. Overall, this dissertation investigates, across product types, how dialecticism (a personal factor) and mental imagery (a contextual factor) moderate the effect of conflicting OCRs on consumers' attitudinal and behavioral outcomes of product evaluation. No empirical research shows how dialecticism impacts Asian consumers' processing of conflicting OCRs; prior research has mostly focused on American and Chinese consumers. Furthermore, the role of mental imagery in processing conflicting OCRs is hitherto unexplored.

Conflicting OCRs arise from inconsistencies in the following ways:

- i. Between aggregate ratings and individual ratings.
- ii. Between one review and other reviews.
- iii. Between a review and its corresponding rating.
- iv. Conflicting information regarding product attributes.

In Study 1, we expose participants to OCRs on the Amazon.in and TripAdvisor.com websites which typically contain a combination of the above inconsistencies. In Study 2, we examine the effect of high-variance ratings. The variance of the ratings subsumes all inconsistencies listed above. Study 3 used a different type of conflicting OCRs: conflict arising from inconsistency between one review and other reviews. Study 4 examined conflict arising from the inconsistency between aggregate ratings and individual ratings.

1.3 Empirical strategy

This dissertation aimed to understand information processing from conflicting OCRs. We undertook mixed methods research which by definition combines both qualitative and quantitative research approaches. (Johnson et al., 2007) to enhance the breadth and depth of understanding of the phenomenon. We first conduct a qualitative study to explore consumers' information processing from conflicting OCRs. Building on insights from the qualitative study we select factors that may moderate the effect of conflicting OCRs. Three experiments test the moderating effect of the selected factors in different consumption contexts.

In study 1, we developed a theoretical model of OCR processing based on a review and synthesis of the literature. Thereafter, the model was validated and extended using directed content analysis of qualitative data in the form of verbal protocols, screen recording, and interviews. Building on the insights gained from Study 1, we proposed and tested two potential moderating factors. Study 2, a 2X2 between-subjects experiment, tested the moderation by dialecticism of the effect of conflicting OCRs of a tourism product (houseboat) on recommendation intention. It also examined attitude confidence as the mechanism through which the effect of conflicting OCRs is transmitted.

Study 3 replicated the effects identified in Study 2 for a different product category (earphones). Study 4 tested the moderating effect of mental imagery on the effect of conflicting OCRs on hotel booking intentions. Figure 1.1 provides a schematic overview of the four studies.

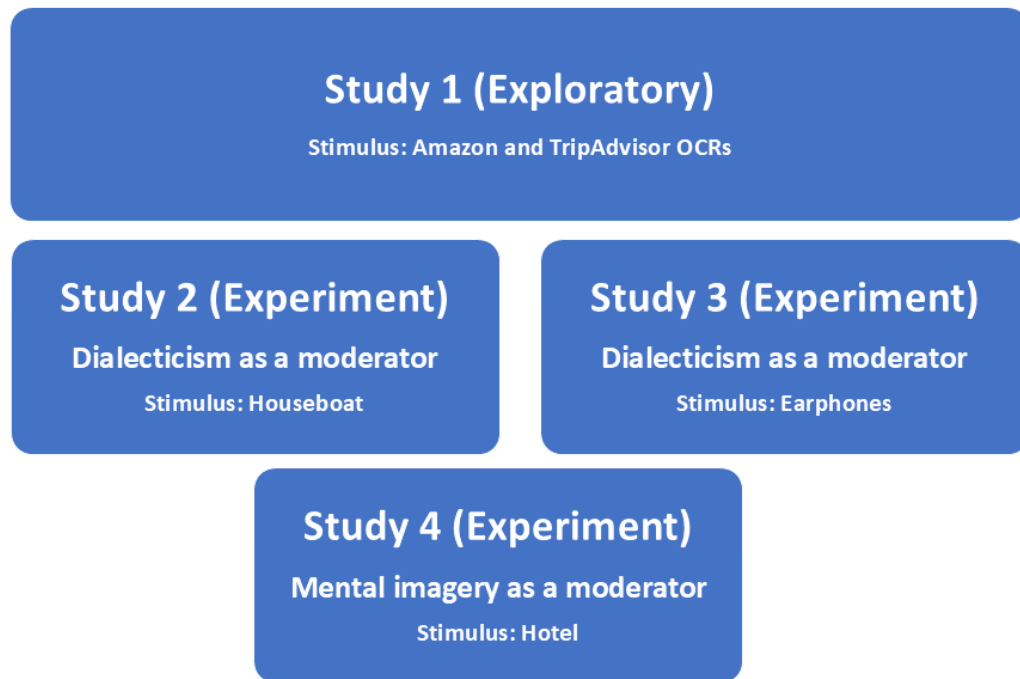


Figure 1.1 Schematic overview of the four studies.

1.3.1 Construct definitions

The constructs occurring in the dissertation are defined below.

Attitude confidence (also, attitude certainty): "the subjective sense of confidence or conviction one has about an attitude" (Tormala, 2016; p. 6).

Booking intention: Intention to book a hotel online.

Conflicting online consumer reviews (Conflicting OCRs): OCRs containing information comprising favourable as well as unfavourable product claims or opinion (Xu and Jin, 2022)

Dialectical thinking (dialecticism): The "cognitive tendency toward acceptance of contradiction" (Peng & Nisbett, 1999; p. 742).

Mental imagery: "a process by which sensory information is represented in working memory" MacInnis & Price, 1987; p. 473).

Product evaluation: Consumers' overall assessments of liking, quality, and purchase intention toward a product (Schroll et al., 2018).

Recommendation intention: "the extent to which a consumer is likely to recommend that someone else use a product or service" (Furner et al., 2022; p. 11).

Variance of ratings: the statistical variance of the online product ratings, also called dispersion (He & Bond, 2015).

1.4 Key Contributions

This dissertation addresses the mixed empirical findings about the effects of conflicting online consumer reviews (OCRs), identifying dialectical thinking and mental imagery as key moderators. It highlights the underexplored role of dialectical thinking in processing contradictory information, particularly in a South Asian context, showing how it can mitigate the impacts of conflicting OCRs. The dissertation introduces the idea of linking dialectical thinking with metacognition in consumer behavior, suggesting that consumers with higher dialectical thinking are more confident in their attitudes toward products, which in turn affects their purchase intentions. This insight bridges the gap between conflicting OCRs and purchase intentions by focusing on consumers' metacognitive experiences. Additionally, the research introduces mental imagery as a

novel mitigator for the adverse effects of conflicting OCRs, suggesting that enhancing consumers' mental imagery might alleviate the negative impacts of such conflicts.

Moreover, the dissertation adapts a new dual-process model to understand better how consumers process conflicting information, critiquing existing models and offering a more nuanced perspective. Lastly, it contributes methodologically by employing a mix of qualitative approaches, including think-aloud protocols, screen recordings, and follow-up interviews, to gain a deeper understanding of how consumers process conflicting OCRs. This comprehensive approach provides novel insights into consumer information processing and decision-making dynamics in the face of conflicting online reviews.

The findings of this research have implications for marketers and OCR platform managers. Practitioners will benefit by realizing dialectical thinking as a source of customer heterogeneity, which is especially relevant in conflicting OCR processing. The role of mental imagery in mitigating the adverse effects will prompt practitioners to present user-generated images judiciously in the presentation of OCRs.

Study 1 explores consumers' cognitive appraisals when processing OCRs, focusing on how they interpret equivocal, conflicting information—a common feature of OCRs. The findings show that consumers form positive, negative, or inconclusive evaluations depending on their cognitive appraisals. Study 2 examines how dialectical thinking moderates the processing of conflicting OCRs for experience products, revealing that higher levels of dialectical thinking reduce the negative indirect effects of these conflicts. Study 3, a conceptual replication of Study 2, extends the findings to search products, showing that attitude confidence mediates the negative effect of conflicting OCRs, with dialectical thinking moderating the mediation. Study 4 tests the role of mental imagery, identified in Study 1, as a moderator and finds it mitigates the negative effects of conflicting OCRs.

Together, the four studies make significant theoretical and practical contributions: (I) clarify mixed findings on the effects of conflicting OCRs by identifying individual and

contextual moderators, (II) they connect dialectical thinking with metacognition in consumer information processing, (III) they establish mental imagery processing as a mitigator of conflicting OCR effects, (IV) advocate for a new dual-process model for understanding conflicting information processing, and (V) they offer a methodological contribution by using think-aloud protocols, screen recordings, and follow-up interviews to gain deeper insights into online consumer behavior. Additionally, the studies integrate both "process theory" and "variance theory" methodologies, providing an event-driven and outcome-driven explanation of how consumers process conflicting information.

For marketing practice, this dissertation highlights that conflicting OCRs can help marketers build consumer confidence by facilitating conflict resolution. AI and web development advances enable personalized OCR presentations tailored to individuals' dialectical thinking levels. Firms can also use user-uploaded images to enhance mental imagery and alleviate the negative impact of contradictory OCRs. Finally, OCR platforms should encourage reviewers to align their ratings with their review sentiment to enhance credibility and helpfulness.

Chapter 2

Literature Review

This chapter presents a detailed literature review and further develops the theoretical and conceptual frameworks for the dissertation. The first section reviews the literature on conflicting online consumer reviews (OCRs). We note the limitations of the extant literature and identify gaps in the literature that motivate the studies. The second section builds the theoretical framework and discusses consumer information processing, the dual process theory, the theory of dialecticism, mental imagery processing, and other theoretical constructs that form the conceptual framework of this dissertation. The third section develops the hypotheses.

We begin by defining OCRs as consumer-generated product evaluations and emphasizing their role in the decision-making process. The structure of OCR systems is examined, including ratings, reviews, and summary statistics, with a focus on rating distributions, which are often J-shaped due to biases. Additionally, we explain how consumers categorize ratings and the influence of herd behavior on review patterns.

Next, we explore various types of conflicts in OCRs, such as inconsistencies between aggregate ratings and individual reviews, or conflicting information about product attributes. We review different operationalizations of conflicting OCRs in the literature and introduce the three approaches used in this dissertation.

Following this, we discuss consumer responses to conflicting OCRs. Mixed findings in the literature are highlighted, with key insights into both consumer and firm outcomes resulting from conflicting OCRs.

Finally, the upcoming sections present the theoretical framework and the development of hypotheses.

2.1 General Characteristics of Online Consumer Reviews

OCRs are consumer-generated product evaluations posted on e-retail websites (e.g., Amazon.com), review platforms (e.g., Yelp.com), or brand websites (e.g., Dell.com) (Mudambi & Schuff, 2010; Zheng, 2021). Consumers read these OCRs in the ‘evaluation of alternatives’ stage of their purchase decision process (Mudambi & Schuff, 2010; Baek et al., 2012). Most online review systems provide a rating, representing an evaluation of the product, and some text (the review) explaining the evaluation (Schlosser, 2011). Since there are numerous ratings and reviews, review websites provide summary statistics of the reviews – aggregate rating, number of ratings, number of reviews, and rating distribution. The aggregated rating represents the average of product evaluations by all reviewers (Qiu, Pang, and Lim, 2012). An individual rating can be regarded as a summary of the corresponding review (Hu, Koh, and Reddy, 2014), but consumers can also rate products without writing a review. According to Hu, Pavlou, and Zhang (2009), the distribution of ratings is expected to be normal but is often J-shaped because of purchasing bias (consumers purchasing a product are more likely to write a review) and under-reporting bias (consumers perceiving the product as average are less likely to write a review). The J-shaped distributions mean that very positive and very negative ratings are considerably more numerous than moderate ratings. Consumers integrate the variation in ratings by categorizing both four- and five-star ratings as positive and one- and two-star ratings as negative (Fisher, Newman, and Dhar, 2018; LaCour and Serra, 2022). Overwhelmingly positive ratings arise because of herd instincts and social influence bias (Aral, 2014). When reviewers see that others have rated a product positively, they also tend to write a positive review.

Most OCR platforms facilitate OCRs in a hybrid format containing textual and visual information such as pictures and videos (Kim et al., 2021; Wu et al., 2021). Visual information adds diagnostic value to OCRs and enhances their value to consumers (Wu et al., 2021). Lin et al. (2012) have found that the presence of visual information enhances purchase intentions for both search and experience products. However, sometimes, there

may be an inconsistency between the visual and textual information, which may alter consumer perceptions of the product (Lee & Choi, 2019).

The effect of OCRs in shaping consumer decision-making and online sales is well established in the Western context. The same has also been found in the Indian context. Consumers in tier 2 and tier 3 Indian cities rely more on positive OCRs to form their purchase intentions (Ullal et al., 2021). Indian consumers differ culturally from Western consumers; therefore, their responses to OCRs differ. For example, Chatterjee et al. (2022) have found that age and gender moderate the effect of OCRs on the purchase intentions of Indian consumers but not those of UK consumers.

2.2 Sources of Conflicting OCRs

Inconsistent or conflicting information contains both negative and positive information bits. (Sengupta & Johar, 2002). Conflicting OCRs contain conflicting information arising in one of the following ways:

- i. Conflict arising out of inconsistency between aggregate rating and individual rating; i.e., between general opinion (or the ‘default’) and single individual’s opinion.
- ii. Conflict arising out of inconsistency between a review and other reviews; i.e., between the opinions of two different individuals,
- iii. Conflict arising out of inconsistency between a review and the corresponding rating; i.e., between the information provided by the same individual.
- iv. Conflicting information about product attributes

Conflicting information is a characteristic feature of OCRs. It arises from a lack of consensus among OCR writer's product evaluations. This lack of consensus, in turn, depends on consumers' varying tastes and preferences. Sometimes, however, the lack of consensus stems from product characteristics. For example, He and Bond (2015) studied the effect of OCR dispersion on taste-similar and taste-dissimilar products. All of the types of conflicting information in OCRs are captured by the dispersion or variance of the ratings.

Various terms have been used in the literature for conflicting OCRs, namely, review inconsistency (Huang, Wang, Liao, and Liu, 2017; Choi and Leon, 2020), (lack of) consensus (Kim and Lee, 2015; Munzel, 2016; Yan and Tan, 2017), mixed reviews (Zhang, Wu, and Mattila, 2016; Lim and Lee, 2019), and ambivalent reviews (Xie, Miao, Kuo, and Lee, 2011). However, these terms have neither an accepted definition nor a uniform operationalization. The literature discusses several types of conflicting information in online reviews, including conflicting information about product attributes (e.g., Liu and Karahanna, 2017), conflicting ratings (Qiu et al., 2012;), disagreement in the consumer opinions (e.g., Lim and Lee, 2019), and conflict between reviews from different platforms (e.g., Byun et al., 2021). Table 2.2 lists the different operationalizations of conflicting information in OCRs and online shopping websites found in the empirical literature. We use the term conflicting OCRs to subsume all forms of inconsistencies and deviations in OCRs that result from a lack of reviewer agreement (Zablocki et al., 2019) and provide conflicting information to consumers. An abstraction or summarization of conflicting OCRs is indicated by the variance of the reviews, usually displayed graphically on OCR websites. Jiménez and Mendoza (2013) defined reviewer agreement as “the degree of perceived agreement among reviewers regarding the evaluation of a product” (p. 227).

In this dissertation, we use three different operationalizations of conflict in OCRs across three experiments. We use (1) a high variance of ratings, (2) a mix of positive and negative reviews, and (3) a conflicting aggregate rating to operationalize conflict in OCRs in experiments one, two, and three, respectively.

2.3. Consumers response to conflicting OCRs

Unless there is variance in the ratings and diversity in the opinions expressed in the reviews, consumers will find the review system to be unhelpful (Donaker, Kim, Luca, and Weber, 2019) and may not perceive the reviews as authentic or credible (Doh and Hwang, 2009; Wu et al., 2021). Conflicting reviews strengthen the impact of consumers' trust (in the online retailer) on purchase intentions (Zhang, Cheung, and Lee, 2014). Trustworthy review systems give consumers the confidence they need to make online purchases of relatively unknown products from unknown sellers (Donaker et al., 2019). Conflicting reviews are perceived as realistic and credible, which makes consumers "accept the conflict" (Bigne, Chatzipanagiotou, and Ruiz, 2020). Thus, conflicting reviews lend trustworthiness to review platforms and are helpful to consumers, as noted in the opening example from Amazon described earlier. However, the literature on conflicting reviews is not equivocal. Some authors have found conflicting reviews to have positive consumer outcomes whereas others have found negative outcomes. For e.g., Lee et al. (2021) have found that in case of low dispersion, reviews are perceived as less helpful, or equivalently, conflicting OCRs (high dispersion) will be more helpful. Similarly, Wu et al., (2021) have found that for slightly novel products, conflicting OCRs are associated with higher acceptance. Contrarily, the another set of research findings reported negative consumer outcomes of conflicting OCRs such as lower credibility (Qiu et al., 2012), lower helpfulness (Lee & Baek, 2021), ambivalence (Siddiqi & Akhtar, 2021), and dissonance (Xu and Jin, 2022). The empirical evidence about firm outcomes such as sales is also mixed. For e.g., Etumnu et al. (2020) found that sales improved as the standard deviation of ratings increased, whereas Wang et al (2015) found that reviews with high variance decrease sales. Table 2.1 summarizes the key findings of the studies investigating the impact of one or the other form of conflicting OCRs.

Table 2.1: Findings of prior research on conflicting OCR

Sl.	Authors, year	Conflict type	Key finding	Effect of conflicting OCRs (positive/negative/contingent)	Type of product
1	Qiu et al., 2012	Conflict between aggregate rating and individual rating	A conflicting aggregated rating will decrease review credibility	Negative (OCR credibility)	Experience (Multimedia speakers)
2	Cheung et al.,2009	Evaluative consistency between a review and other reviews	Consistency makes reviews more credible	Negative effect on credibility	NA (survey method)
3	Schlosser, 2011	Consistency between a reviewer's arguments and rating	Consistency between rating and review increases persuasiveness	Negative effect on persuasiveness	Experience (Books, movies)
4	Baek et al., 2013	Rating inconsistency	Rating inconsistency lowers review helpfulness	Negative effect on OCR helpfulness	Multiple products (field data)
5	Cheung et al., 2012	Review consistency	Review consistency enhances review credibility	Negative effect on credibility	NA (survey method)
6	Quaschnig et al., 2015	Valence consistency	Consistent reviews are more helpful	Negative (OCR helpfulness)	Experience (field data)
7	Song et al., 2022	Variance of ratings	High variance ratings negatively affect the decision to order	Negative (on purchase decision)	Experience (Hotel)

8	López-López & Parra, 2016	Conflicting aggregate valence	Helpful reviews that are incongruent with the aggregate rating are persuasive	Positive effect on persuasiveness	Experience (Hotel)
9	Kupor & Tormala, 2018	Deviation between aggregate rating and individual rating	Deviatory reviews are more persuasive	Positive effect on persuasiveness	Experience (Café, ridesharing)
10	Fisher et al., 2018	Variance of ratings	Conflicting ratings result in binary bias and a preference for lower aggregate rating products	Contingent	Experience (Music albums, hotel)
11	Liu & Karahanna, 2017	Conflicting information about attributes	Greater weight is attached to attributes which have conflicting information	Contingent	Search (Camera)
12.	Bigne et al., 2020	Conflicting reviews	The effect of conflicting reviews depends on the sequence, positive-negative versus negative-positive.	Contingent	Experience (Restaurant)
13.	Chu et al., 2015	Dispersion of ratings	Highly dispersed ratings of hedonic products elicit positive evaluations	Positive effect on product evaluation	Both (Music and car navigation device)

14.	Zhang, Cheung, and Lee, 2014	Mix of positive and negative OCRs	Consumers' trust in the online retailer is more likely to influence purchase intention when reviews are inconsistent	Contingent	Experience (Restaurant)
15.	Wu et al., 2021	Review variance	Low (High) review variance leads to higher adoption intentions for "really new products" ("incrementally new products")	Contingent	Search (Bikes, computer keyboard)
16.	He & Bond, 2015	Review variance	The negative influence of review variance on product evaluations is moderated by product type	Negative effect on product evaluation	Both (Lamps, painting)
17.	Lee et al., 2021	Dispersion of ratings	When dispersion is low (high), average ratings are trusted (not trusted), and incentive to read individual reviews decreases (increases). In case of low dispersion, review helpfulness decreases	Negative effect on trust in the ratings	Experience (DVDs, Field data)

18.	Lim & Lee, 2019	Mixed reviews	Consumers exposed to mixed online reviews about an unfamiliar brand form ambivalent and more certain attitudes	Negative effect on product attitude	Search (Smart doorbell)
19.	Kim & Lee, 2015	Review consensus/ consistent ratings	When ratings are consistent, consumers' attitudes are not influenced by the (positive-negative) sequence of reviews	Contingent	Experience (Hotel)
20.	Park & Jeon, 2018	Mixed eWOM	Positive-negative (vs. negative-positive) sequence of reviews produces more attitude change in Western (vs. Eastern) consumers	Contingent	Search (Laptop)
21.	Ruiz-Mafe, et al., 2018	Conflicting OCRs	Negative-positive sequence of conflicting reviews leads consumers to do deeper (systematic) processing	Positive effect on systematic processing of OCRs	Experience (Hotel, TripAdvisor)
22.	Siddiqi & Akhtar, 2021	Conflicting OCRs	Conflicting expert and peer reviews cause ambivalence	Negative effect on product attitude	Experience (Hotel)

23.	Xu and Jin, 2022	Conflicting OCRs	Conflicting OCRs cause more dissonance in prevention (vs. promotion) focused consumers	Negative effect on purchase intention	Experience (Hotel, and online food delivery)
24.	Wang, Tariq, and Alvi, 2021	Inconsistent reviews	Ambivalence mediates the adverse effect of inconsistent reviews on purchase intention	Negative effect on purchase intention	Search (Smartphone)
25.	Akhtar, Sun, Akhtar, and Chen, 2019	Conflicting reviews	Conflicting font diagnosticity and conflicting language comprehension are positively associated with ambivalence	Negative effect on product attitude	Experience (Hotel)
26.	Xie, Miao, Kuo, and Lee, 2011	Ambivalent reviews	Ambivalent OCRs containing reviewer's personal identifying information lower purchase intentions	Negative effect on purchase intention	Experience (Hotel)
27.	Park and Han, 2008	Conflicting reviews	Consumers response to conflicting OCRs depends on whether they attribute the conflict to the product or the reviewer, and on their prior brand attitude.	Contingent	Search (Multimedia player)

The inconsistent empirical results imply moderating effects to be investigated to identify the alternative theoretical explanations of such results. Researchers have examined the interaction between review characteristics and other contextual factors with the conflicting OCRs to investigate various outcome variables. A few studies have also examined the moderating effect of product characteristics (e.g., hedonic versus utilitarian), consumer characteristics (e.g., regulatory focus), and review characteristics (e.g., personal identification information in the OCR) on consumer responses to conflicting OCRs.

Table 2.2. Operationalizations of conflicting information in OCRs

Sl. no.	Term	Operationalization	Authors, year
1.	Conflicting reviews	Three four-star reviews and three one-star reviews	Xu & Jin, 2022
2.	Dispersion of ratings	High versus low variance of ratings	He & Bond, 2015
3.	Image-text inconsistency	Inconsistency between the quantity mentioned in the product listing and that shown in the product image	Lee & Choi, 2019
4.	Mixed reviews	Reviews containing a mix of words indicating positive and negative emotions	Zablocki et al., 2019a
5.	Dispersion of online review ratings	Variance (or dispersion) of online ratings	Lee et al., 2021
6.	Conflicting aggregated rating	Discrepancy between aggregated rating and individual rating	Qiu et al., 2012

7.	Inconsistent reviews	Discrepancy between the review and the corresponding rating	Schlosser, 2011
8.	Rating inconsistency	Inconsistency between the rating and average rating	Baek et al., 2013
9.	Conflicting aggregate valence	Incongruence between the review rating and overall rating	López-López & Parra, 2016
10.	Mixed online consumer reviews	Negative information about two product attributes and positive information about the other two attributes	Lim & Lee, 2019
11.	Review consensus	High (low) consensus review set had reviews with ratings varying from 2(1) to 4 (5)	Kim & Lee, 2015

In this dissertation, we focus on an individual difference variable (dialectic) and a marketer-controlled variable (mental imagery) to account for variance in consumer responses to conflicting OCRs. These moderating effects, we hope, will provide an alternative explanation of some of the inconsistencies in the literature. We also explore a psychological mechanism (attitude confidence) underlying the processing of conflicting OCRs.

2.3.1 Research gaps and contributions

Table 2.1 presents prior literature on conflicting OCRs, organized by the type of conflict, key findings, and the effect of these conflicts on consumer behavior, categorized as positive, negative, or contingent.

Key findings indicate that conflicts, such as inconsistencies between aggregate and individual ratings, generally negatively affect credibility, persuasiveness, and product evaluations. For example, Qiu et al. (2012) found that conflicting aggregate ratings reduce OCR credibility, while Baek et al. (2013) demonstrated that rating inconsistency lowers the perceived helpfulness of reviews. Adverse effects were also noted in the context of consumer ambivalence and purchase intentions when reviews conflict (Siddiqi & Akhtar, 2021).

However, certain studies show positive or contingent effects, depending on the context. For example, López-López and Parra (2016) found that incongruent but helpful reviews could be persuasive. Chu et al. (2015) suggested that highly dispersed ratings of hedonic products can elicit positive evaluations.

Some findings indicate that the impact of conflicting OCRs is contingent on factors such as product type, review sequence, or consumer characteristics (e.g., Ruiz-Mafe et al., 2018; Park & Jeon, 2018).

These apparent inconsistencies in the literature might stem from “a lack of consideration of moderating or mediating influences” (Endrikat et al., 2014; p. 736). Therefore, this dissertation first undertakes a qualitative inquiry to provide deeper insights into the conflicting OCR processing by Indian consumers. Based on Study 1, we identify two moderators and a mediator, investigated in Studies 2,3 and 4. We employ different operationalizations of conflict in OCRs across our experiments. Specifically, we use (1) high variance in ratings, (2) a combination of positive and negative reviews, and (3) conflicting aggregate ratings to represent conflict in experiments one, two, and three, respectively.

The dissertation addresses the research gaps and contributes to the literature by identifying and establishing vital moderating effects, conducting what may be the first empirical study on the role of dialecticism in the Indian context. We also empirically

demonstrate the role of mental imagery in conflicting OCR processing and examine the critical nexus between dialecticism and attitude confidence.

2.4 Theoretical Framework

2.4.1 Consumer information processing

Information processing is a prominent paradigm in consumer research. It focuses on how consumers perceive, comprehend, interpret, retain, and use product information (Haugtvedt, Herr, & Kardes, 2018). Consumers may obtain information from advertisements, online consumer reviews, word of mouth, direct experience, or prior knowledge (Wyer, 2019). MacInnis & Price (1987) noted that information processing research has paid more attention to “discursive or descriptive information processing,” but increasingly, attention is being paid to imagery processing. Imagery processing and information processing fall on a continuum rather than being a dichotomy. Discursive processing takes language-like information (e.g., words and numbers) as input, whereas imagery processing takes sensory experiences (e.g., sight, smell, haptics, etc.) as input (Stern, Zinkhan, & Jaju, 2001). The axiomatic distinction between discursive and imagery processing is relevant to the current study because online consumer reviews are commonly found in a hybrid format— photos and videos appear along with text to create a largely coherent meaning (Wu, Wu, & Wang, 2021). Electronic commerce is inherently intangible and entails risk perceptions (Weathers, Sharma, & Wood, 2007; Jiang & Benbasat, 2007; Boardman & McCormick, 2019). Therefore, consumers use imagination to form product evaluations when shopping online (Orús, Gurrea, & Flavián, 2017), and companies employ various technology tools to enhance product presentations (Jiang & Benbasat, 2007). For example, IKEA uses augmented reality to enable consumers to digitally place, remove, and recolor furniture in their homes (Heller, Chylinski, de Ruyter, Mahr, & Keeling, 2019). Such uses of augmented and virtual reality technologies exploit imagery processing (Elder & Krishna, 2022). Using eye-tracking data and interviews, Boardman & McCormick (2019) found that providing a wide variety of product images aided consumer

decision-making and made them more confident in ordering garments online. The presence of images in online consumer reviews has similar effects. Images help reduce uncertainty and enhance trust and purchase intentions (Zinko, Stolk, Furner, & Almond, 2020). OCRs with images are also perceived as having higher information quality (Zinko, Furner, de Burgh-Woodman, Johnson, & Sluhan, 2020), and consumers may skip some review text in favor of images (Zinko, Stolk, Furner, & Almond, 2020). Moreover, eye-tracking data has revealed that the visual attention paid to images comes at the expense of attention required for processing the review text (Bigne et al., 2020). Thus, it is essential to consider both discursive and imagery processing to understand how consumers process hybrid OCRs.

2.4.2 Dual process theory

The term dual process theory (also called dual process model) is used to label any of a class of theories that distinguish between two fundamentally different types of cognitive processes (Pennycook, De Neys, Evans, Stanovich, & Thompson, 2018). Dual process theories are ‘ubiquitous in psychology’ (Barrett, Tugade, & Engle, 2004) and generously used in consumer behavior and marketing research. Two dual process models — the elaboration likelihood model (ELM) and the heuristic systematic model (HSM) — are especially popular in the OCR literature. The ELM and the HSM are dual process models of persuasion. Both the models posit two modes – a more, and a less effortful – in which people can process information. According to the ELM the two modes fall on the ends of a continuum, whereas according to the HSM, the two modes can occur concurrently (Maheswaran & Chaiken, 1991). Zhang, Zhao, Cheung, & Lee (2014) have noted the overwhelming prevalence of ELM in the information systems literature and the relatively less popularity of HSM. In a systematic review of the electronic word-of-mouth (eWOM) literature, Cheung & Thadani (2012) found that the ELM and the HSM were the most common theoretical foundations; the frequency of papers using the ELM versus the HSM was higher. Samson & Voyer (2012) reviewed dual process models in consumer psychology and noted that “considerably fewer studies have used the HSM” (p. 52) versus the ELM.

In spite of being relatively less popular, the HSM has led to some interesting findings by allowing for the two processes to be simultaneously active (Samson & Voyer, 2012). The ELM presupposes the selection of one of the two mutually exclusive processes (central or peripheral) on the basis of motivation to process (Glöckner & Witteman, 2010). The ELM has been criticized for not adequately explaining the mechanisms underlying information processing and only specifying the conditions under which one or the other type of process will be employed (Kim, King, & Kim, 2018). Our review of both the dual process theory literature and the OCR literature has led us to conclude that the ELM is unsuitable for understanding conflicting OCR processing. According to the HSM there may be three motives of information processing (a) to form an accurate judgment (accuracy motivation), (b) to defend their positions (defense motivations), and (c) to attain the desired level of confidence (judgmental confidence) These aspects of the HSM provide insights into the processing of conflicting OCRs. Kim, King, & Kim (2018) have used the HSM to explain consumers' processing of conflicting brand information. According to the ELM, sufficient motivation is a precondition for elaboration or effortful processing. However, according to the HSM, conflicting OCRs may promote systematic processing even in low if consumers' confidence in the evaluation is less than they wish for (Maheswaran & Chaiken, 1991). The HSM is preferred over the ELM because it can explain more information processing activities than the ELM, and also because it has more theoretical extensions (Zhang et al., 2014). Moreover, it postulates attaining desired attitude confidence as one of the motives of information processing. Indeed, one of the consumer motives behind OCR processing is to gain confidence in their product judgments and improve decision quality (Khammash & Griffiths, 2011).

The OCR literature often categorizes OCR cues into two categories and assumes they will be processed in distinct ways -- central and peripheral cues. For example, Agnihotri and Bhattacharya (2016) categorize the text in OCRs as central cues and OCR writer's credibility and likeability as peripheral cues. Such categorization stems from the dichotomy perpetuated by various dual process models, with the elaboration likelihood and the heuristic-systematic models being the most

common ones. Dual process models not only dictate dichotomizing information cues but also posit two types of information processing. Moreover, they do not further differentiate within the two types of processing (Glöckner & Witteman, 2010). These ideas have been canonized and designated a metatheory (e.g., Pennycook et al., 2015). However, advances in research have led to their re-examination, and the dual-process typology has been challenged. There is little evidence supporting the idea that different types of information processing fall into two distinct categories, and considerable evidence contradicts this notion (Melnikoff & Bargh, 2018).

The dichotomized information processing routes are popular in part for their heuristic value. It has been embraced for its simplicity and applicability in designing advertisements, marketing campaigns, and understanding consumer decision-making. However, the various dual process models have undergone refinements, clarifications, and extensions. It turns out that the overly simplistic dichotomy of these models denies the complexity of consumer information processing and information-rich, computer-mediated environments such as OCR platforms. Increasingly, scientific evidence shows that cognitive processes are often interdependent and dynamic rather than strictly dichotomous.

Conflicting information is a characteristic feature of OCRs and presents a unique information processing instance for consumers. Extant dual-process models treat inconsistency in information as a peripheral cue, but it has been recognized that a given cue can be processed in both ways. The elaboration likelihood model and other dual process models are unable to explain the differential processing outcomes (Kitchen et al., 2014). For example, OCR platforms almost always contain both positive and negative information about a product. Yet some consumers buy, while others forego the product after processing the same set of OCRs.

2.4.3 Theory of Dialecticism

Culture influences most facets of consumer behaviour (De Mooji & Hofstede, 2011), including information processing (Lee et al., 2021a). Cultural differences also lead to differences in processing and resolution of conflicting information (Aaker & Sengupta, 2000). One such cultural difference is dialectical thinking. Culture is defined as “the collective programming of the mind which distinguishes the members of one group or society from those of another” (Hofstede 1984; p. 82). This definition represents the traditional view according to which culture is a static entity. However, according to Briley, Wyer Jr, and Li (2014), there are three views of culture: (1) “culture is in society,” (2) “culture is in our biology,” and (3) “culture is in the mind.” The last of these is the cognitive perspective, which focuses on the psychological processes underlying cultural preferences (Briley et al., 2014; p. 560). In this dissertation, we subscribe to the cognitive perspective of culture for its utility.

Cultural differences influence information processing (McCort & Malhotra, 1993; Briley et al., 2014) and how consumers evaluate and respond to products (Shavitt & Barnes, 2020). Since culture resides and operates in the consumer’s mind, one or the other cultural inclination can be activated by context or situational factors (Shavitt & Barnes, 2020). One such cultural inclination is dialectical thinking (or dialecticism).

Dialectical thinking is a “cognitive tendency toward acceptance of contradiction” (Peng and Nisbett, 1999; p. 742). The importance of dialectical thinking in understanding how consumers process information and make decisions was recognized by Kahle et al. (2000), but its proliferation in the consumer behavior and marketing literature appears to have taken off relatively recently. Dialectical thinking has mostly been investigated as a cross-cultural (Western versus Eastern) variable, but researchers (e.g., Luttrell, Petty, Chang, & Trogans, 2022) have also examined it as an individual-difference variable. Jakubancs, Fedorikhin, & Iversen (2018) examined consumer responses to vice food products with the dialectical

thinking lens and noted that their hypotheses applied to cultural differences across individuals as well as cross-culturally. Treating dialectical thinking as a situational, individual-difference variable is consistent with the cognitive perspective of culture.

2.4.4 Mental imagery theory

The old adage “a picture is worth a thousand words” has been subjected to empirical testing to crystallize its meaning (Lutz & Lutz, 1978). This gave rise to mental imagery research. MacInnis and Price (1987) described mental imagery as “a processing mode in which multisensory information is represented in a gestalt form in working memory” (p. 473). Mental imagery should not be confused with mental image; moreover, mental imagery is not always about images (Nanay, 2021). Mental imagery may arise with any sensory input — visual, auditory, gustatory, interoceptive, tactile, and olfactory (Young, 2020). However, much of consumer behavior and marketing research has focused on visual imagery (Elder & Krishna, 2022). MacInnis and Price’s (1987) oft-quoted definition of mental imagery emphasizes that imagery is a process, not a structure. This distinction distinguishes imagery from knowledge structures (e.g., schemas). A knowledge structure may generate imagery or be processed discursively (MacInnis & Price, 1987). Mental imagery can be “deliberate” or “automatic,” depending on whether it occurred under high or low elaboration (Elder & Krishna, 2022). Automatic imagery, also called mental simulation, can influence product evaluation (e.g., Eelen, Dewitte, & Warlop, 2013; Maier & Dost, 2018; Zhao, Hoeffler, & Zauberger, 2011), behavioral intentions (Yoo, & Kim, 2014; Kim, Kim, Park, & Yoo, 2021), purchase intention (Elder & Krishna, 2012), attitude toward social media ads (Ha, Huang, & Park, 2019), product attitude (Lee & Shin, 2020) online hotel booking intentions (Lv, Li, & Xia, 2020), and word-of-mouth intentions (Heller, Chylinski, de Ruyter, Mahr, & Keeling, 2019).

The consumer behavior and marketing literature has explored the consequences of imagery in advertising, new product development, online and offline shopping, and

experiential marketing (Elder & Krishna, 2022). Researchers have elicited mental imagery by showing stimuli such as those shown in Table 2.3.

Table 2.3. Types of stimuli to elicit mental imagery

	Stimulus	Authors
1.	Instagram accounts of a brand	Ha et al. (2019)
2.	Background of product image	Yoo & Kim (2014); Maier & Dost (2018)
3.	Haptic cues	Lv et al. (2020)
4.	Sound effects on the website	Lee et al. (2010)
5.	Augmented reality	Heller et al. (2019); Park & Yoo (2020)
6.	Virtual reality	Bogicevic, Seo, Kandampully, Liu, & Rudd (2019)
7.	Product presentation videos	Orús et al. (2017)
8.	Product images	Lee & Gretzel (2012); Bogicevic et al. (2019)
9.	3-D images	Kim, Baek, & Yoon (2020)
10.	Imagery-provoking advertising messages	Unnava & Burnkrant (1991)
11.	Animated banners on webpage	Argyriou, 2012

Lee & Shin (2020) studied the moderating effect of image complexity on mental imagery evoked by product names.

Mental imagery or imagery processing can be facilitated by enhancing the vividness (Fennis, Adriaanse, Stroebe, & Pol, 2011) of the stimuli, for example, a message, online consumer reviews, and advertisements. Vividness can have different

meanings in different disciplines, but here, we adopted the meaning ascribed to it in social psychology which has also been adopted in marketing and related disciplines. According to Nisbett and Ross (1980), vivid information is “emotionally interesting, concrete and imagery-provoking, proximate in a sensory, temporal, or spatial way” (p. 45). Visual stimuli are perceived as more vivid and can impact consumer decision-making more than text (Weathers et al., 2007; Nazlan, Tanford, & Montgomery, 2018). Vivid information can also lower consumers’ perceived performance uncertainty, especially about experience goods (Weathers et al., 2007). Drawing on mental imagery theory, Townsend and Kahn (2014) predicted and found empirical support for their “visual preference heuristic,” according to which consumers prefer product information presented visually rather than verbally.

Consumers are very likely to engage in mental imagery when they come across conflicting information in OCRs. Mental imagery is relevant because sensory information (in the form of images) is present in OCRs, and they have the potential to evoke imagery processing.

Prior studies have used a variety of vividness manipulations, for example, including or excluding pictures, providing product descriptions versus expert ratings, and using concrete or narrative versus pallid information (Fennis et al., 2011). Nazlan et al. (2018) manipulated vividness by presenting online ratings and reviews versus ratings or reviews alone and found that higher vividness enhanced restaurant evaluation and visit intentions. In another study, they manipulated vividness by including (versus excluding) a picture. Similarly, Weathers et al. (2007) manipulated vividness by having participants view multiple pictures of the product or no pictures at all. Argyriou (2012) manipulated vividness by including animated banners on web pages and found that higher mental imagery led to higher intentions to revisit online retail websites.

2.5. Hypothesis development

Prior online consumer reviews (OCRs, hereafter) research has heavily focused on consumer perceptions of OCRs (e.g., helpfulness, usefulness, and credibility) but less on the impact of OCRs on consumer decision-making and business performance (Zheng, 2021). In the same vein, research on conflicting OCRs has also frequently investigated consumer perceptions of credibility (e.g., Qiu, Pang, & Lim, 2012; Cheung, Luo, Sia, & Chen, 2009; Cheung, Sia, & Kuan, 2012), persuasiveness (e.g., Schlosser, 2011; López-López & Parra, 2016; Kupor & Tormala 2018) and helpfulness (e.g., Lee, Lee & Baek, 2021). Motivated by the relative neglect, we extend the focus on consumer decision-making rather than perceptions of conflicting OCRs. In line with Liu, Karahanna, and Watson (2011), we conceptualize OCR processing as a constructive judgment and choice process in which consumers process information to arrive at a product evaluation.

Drawing on attribution theory, He & Bond (2015) argued that when the consensus among reviewers is high, that is, in a low conflict condition, OCRs will have a positive effect on product evaluations. Munzel (2016) has also shown that high-consensus or low-conflict OCRs have a negative effect on purchase intention via perceptions of trustworthiness.

According to the heuristic-systematic model, conflicting information can cause reconciliatory elaboration (Sengupta & Johar, 2002). However, in the absence of reconciliatory elaboration, negative judgments are easier (Nohlen et al., 2019). Prior studies have documented several negative consumer responses to conflicting OCRs. For e.g., Akhtar et al. (2019) have shown that conflicting OCRs of hotels cause ambivalence. Song et al., (2022) have shown that conflicting OCRs negatively affect hotel booking intentions. It has also been shown that conflicting OCRs are perceived as having less credibility (Qiu et al., 2012; Cheung et al., 2009), lower helpfulness (Quaschnig et al., 2015, Baek et al., 2013). Any form of conflicting information in OCRs reflects a lack of consensus among the reviewers (Zablocki et al., 2019). The

degree of consensus is effectively captured by the standard deviation of the ratings (Song et al., 2022) and is graphically displayed at the top of most OCR platforms. Drawing on attribution theory, He & Bond (2015) argued that when the consensus among reviewers is high, that is, in a low conflict condition, OCRs will positively affect product evaluations. Munzel (2016) has also shown that high-consensus or low-conflict OCRs positively affect purchase intention via perceptions of trustworthiness. Social consensus is an antecedent of attitude confidence. When consumers form attitudes based on high-consensus information, they will be more confident in their attitudes (Tormala & Rucker, 2007).

Higher confidence in attitudes, that is, higher attitude confidence enables consumers predict with higher certainty how well they will like the product (Moore, 2015; Tormala & Rucker, 2007). Empirical evidence for these phenomena has been obtained in different contexts but mostly in the western countries. Evidence from India is lacking, so we intend to obtain the same in Indian consumers.

The literature presents contradictory findings on the effects of conflicting OCRs. However, we hypothesize a negative effect based on a reasoned analysis of existing evidence relevant to our research question. We employ both inductive and deductive reasoning by drawing on prior research findings and grounding our approach in established theory. When empirical evidence is unequivocal, aligning hypotheses with one set of findings is essential, particularly when attempting to resolve such contradictions. Notably, prior studies that explicitly addressed contradictory findings (e.g., He & Bond, 2015; Hwang et al., 2018; Akhtar et al., 2019) also hypothesized negative effects of conflicting OCRs, such as decision discomfort (Hwang et al., 2018), cognitive dissonance (Akhtar et al., 2019), and negative product evaluation (He & Bond, 2015).

Our literature review, summarized in Table 2.1, categorizes the effects of conflicting OCRs in some studies as contingent, implying that the outcome depends on contextual factors. For example, the effect of conflicting OCRs on purchase intention

may interact with trust in the OCR platform (Zhang et al., 2014). Similarly, cultural differences in thinking style moderate the effect of conflicting OCRs on brand attitude change (Park & Jeon, 2018). Studies supporting positive effects also involved contextual factors, such as helpfulness ratings of OCRs (López-López & Parra, 2016) and the presence of a default evaluation (Kupor & Tormala, 2018). In the current study, we have designed the experimental stimulus to minimize the influence of such contextual factors, including helpfulness ratings and default evaluations, which are known to buffer negative effects. We did so in service of our research objectives and to focus primarily on conflicting OCRs.

In addition to empirical evidence, we rely on the appraisal-based framework for attitude and persuasion (Rucker et al., 2014) for theoretical support. This framework posits that after forming an attitude, consumers evaluate the accuracy of the information (e.g., OCRs) on which their attitude is based. According to this framework, information processing is conceptualized as an "attribution-based reasoning process linked to a finite set of distinct appraisals" (Rucker et al., 2014, p. 119). Two key dimensions on which consumers appraise information are social consensus and consistency. Studies suggest that more positive and confident attitudes are formed from high-consensus information (Tormala & Rucker, 2007; Rucker et al., 2014). Similarly, He & Bond (2015) draw on attribution theory to argue that when the consensus among reviewers is low, as in the case of conflicting OCRs, product evaluations are likely to be negative. Munzel (2016) also demonstrated that a lack of consensus in OCRs negatively affects purchase intentions.

Furthermore, consumers assess information consistency, and when there is inconsistency, the accuracy of each piece of information becomes more questionable (Rucker et al., 2014). These principles readily apply to our context, where conflicting OCRs signal a lack of both consensus and consistency to prospective consumers.

Thus, by experimentally controlling for contextual factors and focusing on conflicting OCRs, we hypothesize the following

H1(a): Conflicting OCRs have a negative effect on product evaluation

Attitude confidence is consumers' assessment of how sure or confident they are of their own attitudes (Petrocelli et al., 2007). Attitudes held with confidence have greater predictive power than those held with doubt (Mello, Garcia-Marques, Briñol, Cancela, & Petty, 2020; Rucker et al., 2014). More confident attitudes have more influence on thoughts and behavior, are more resistant to change, and are less susceptible to decay over time (Mello et al., 2020; Rucker et al., 2014). Attitude confidence also influences information processing; higher attitude confidence leads to lower information processing activity (Maheswaran & Chaiken, 1991; Rucker et al., 2014). As discussed earlier, confidence is essential to the Heuristic-Systematic Model (HSM). The HSM posits a continuum of confidence for consumer attitudes and judgment (Zuckerman & Chaiken, 1998). Consumers will engage in processing OCRs to the degree that it helps them attain their desired levels of confidence. Conflicting information can cause reconciliatory elaboration and enhance attitude confidence (Sengupta & Johar, 2002). However, in the absence of reconciliatory elaboration negative judgments are easier (Nohlen et al., 2019). Moreover, low social consensus and inconsistent information both lead to a lowering of attitude confidence (Rucker et al., 2014). Conflicting OCRs indicate a low consensus amongst reviewers and contain inconsistent information; therefore, we hypothesize the following.

H1(b): Conflicting OCRs have a negative effect on consumers' attitude confidence

Prior literature is inconclusive about the effects of conflicting reviews on consumer outcomes such as attitudes and product adoption (Hwang, Choi, and Mattila, 2018; Wu, Liu, Teng, Zhang, and Xie, 2021) and firm outcomes, for example, product sales (Wang, Liu, and Fang, 2015). Some authors have found positive outcomes such as persuasiveness (López-López and Parra, 2016; Kupor and Tormala, 2018) and positive product evaluations (Chu, Roh, and Park, 2015). Others have found negative effects, such as choice deferral (Pang, Keh, Li, and Maheswaran, 2017) and decision discomfort (Hwang et al., 2018). To reconcile this confusion in the literature, we explore dialectical

thinking – a ‘person characteristic’, as a moderator of the effect of conflicting OCRs on product evaluation. Indeed, person characteristics, in addition to the decision problem and the social context, influence consumer decision-making processes (Bettman, Johnson, and Payne, 1991; Kahle, Liu, Rose, and Kim, 2000).

Dialectical thinking is a “cognitive tendency toward acceptance of contradiction” (Peng and Nisbett, 1999; p. 742) that varies across cultures as well as across individuals within a culture (Luttrell, Petty, Chang, and Togans, 2022). Variation in the level of dialectical thinking results in differences in consumers’ tolerance and acceptance of inconsistencies, ambiguities, and contradictions (DeMotta, Chao, and Kramer, 2016; Su et al., 2021). There are several consumption contexts in which consumers face the paradox of duality or contradiction, resulting in conflicting psychological states (Williams and Aaker, 2002). Over two decades ago, Kahle et al. (2000) proposed dialectical thinking as an additional perspective to better understand consumer decision-making. Ever since Wang, Batra, and Chen (2016) noted that the use of dialecticism has been very limited in understanding consumer research, it has picked up the pace. Su, Monga, and Jiang (2021) have examined the role of dialectical thinking in consumer responses to brand extensions when there is a poor fit or even a contradiction between the parent brand and the brand extension. Wang, Chen, Nguyen, and Shukla (2020) have studied the impact of dialectical thinking on consumers’ attitudes toward co-brands involving culturally dissimilar brand personality traits. DeMotta (2021) has found dialecticism to moderate the relationship between charitable giving and whether the donor perceives the receiver to be responsible for their plight. DeMotta et al. (2016) have demonstrated that low dialectical thinkers process conflicting information less fluently, resulting in low judgmental confidence and moderate attitudes. Wang et al. (2016) have also examined the moderating role of dialecticism in consumers’ responses to conflicting OCRs. They have found that the relationship between subjective ambivalence and discomfort is moderated by dialecticism. Hwang, Choi, and Mattila (2018) found that consumers processing conflicting OCRs exhibited low attitude certainty if they were low dialectical thinkers.

Departing from extant OCR research, which has mostly assumed a uniform consumer response to conflicting OCRs, we argue that consumers' dialectical thinking moderates the effect of conflicting OCRs on product evaluation. Indeed, dialectical thinking facilitates the incorporation and synthesis (Kahle et al., 2000) of opposing opinions and product evaluations expressed in the OCRs. Thus, we hypothesize the following:

H2 (a): Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on product evaluation will be smaller for the high-dialectical thinking condition.

H2 (b): Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high-dialectical thinking condition.

Luttrell et al. (2022) have shown that high dialectical thinking is associated with high objective ambivalence but lower subjective ambivalence. Objective ambivalence results from conflicting cognitions and emotions held by a consumer toward an object, whereas subjective ambivalence refers to the evaluative conflict experienced because of the objective ambivalence (Priester and Petty, 1996; Itzhakov and Van Harreveld, 2018). Ambivalence research has further shown that the relationship between ambivalence and anticipated regret of making a wrong decision is mediated by uncertainty (Van Harreveld, Van der Pligt, and de Liver, 2009; Itzhakov and Van Harreveld, 2018) associated with choosing the attitude object. The attitude toward a product or a brand reflects a consumer's first-order evaluation; higher-order, metacognitive appraisals of the evaluation provide perceptions of certainty or uncertainty of the attitude (Cheatham and Tormala, 2017). Certainty is the subjective sense of confidence or conviction a consumer has about an attitude (Tormala and Rucker, 2018). Certainty indicates to consumers that their attitudes are valid or correct; it attenuates processing activity and the need for additional information (Rucker, Tormala, Petty, and Briñol, 2014). The psychological literature has explored several

‘origins’ of certainty (Smith, Fabrigar, Macdougall, and Wiesensthal, 2008); however, the origins pertinent in the present context are social consensus and structural consistency. Social consensus is indicated by the variance of the OCRs, and structural consistency is indicated by the degree of agreement in reviewer opinions. Social consensus and information consistency generally enhance certainty, but when consumers think of conflicting information as accurate, it may produce ambivalent but certain attitudes (Rucker et al., 2014). Scholars have used confidence and certainty interchangeably (Rucker et al., 2014); Simintiras, Yeniaras, Oney, and Bahia (2014) have also noted that the two concepts share their meaning.

Petty, Brinol, and Tormala (2002) draw a parallel between thought confidence and attitude confidence; they suggest that just as confident attitudes are more likely to guide behavior, confidence in thoughts is also more likely to guide attitudes. Thought confidence has been shown to mediate the relationship between the source credibility of advertisements and product attitudes (Briñol, Petty, and Tormala, 2004). Though different authors have used different names for the confidence construct, its mediating role has been recognized in the OCR literature. Moore (2015) has shown confidence (they call it attitude predictability) to mediate the effect of the explanation type of OCRs on product choice. Hwang et al. (2018) have demonstrated that the effect of conflicting OCR valence on decision discomfort is mediated by attitude certainty; specifically, when consumers are confident about their attitude, they experience more decision discomfort. More recently, Yin, de Vreede, Steele, de Vreede (2023) have shown that conflicting OCRs reduce attitude certainty. Attitude certainty is a dimension of attitude strength that promotes selective processing, selective judgment, and seeking attitude-consistent information (Tormala and Rucker, 2018; Pomerantz, Chaiken, and Tordesillas, 1995). It does not always make attitudes stronger. According to the amplification hypothesis (Clarkson, Tormala, and Rucker, 2008), attitude certainty amplifies consumers’ responses to the OCRs. If consumers develop a univalent attitude, certainty enhances attitude strength, but if they develop ambivalent attitudes, certainty diminishes attitude strength.

Based on this discussion, we predict mediation by attitude confidence of the effect of conflicting OCRs on product evaluation, which is moderated by consumers' dialectical thinking. Specifically, we put forth the following hypothesis:

H3: Attitude confidence mediates the effect of conflicting OCRs on product evaluation.

As noted earlier, consumers' attitude certainty depends on their level (high versus low) of dialectical thinking (Hwang et al., 2018). The interaction between dialecticism and ambivalence has been established in the OCR literature (Wang et al., 2016). Moreover, ambivalence is negatively related to certainty (e.g., Luttrell et al., 2022). Hence, we expect dialectical thinking to moderate the mediating effect of attitude confidence on product evaluations.

H4: The indirect effect of conflict on product evaluation is moderated by dialectical thinking such that HDL consumers generate higher attitude confidence.

In other words, dialectical thinking moderates the negative relationship between conflicting OCRs and attitude confidence such that it weakens the negative relationship between conflicting OCRs and product evaluation via attitude confidence

Images and visual information facilitate mental imagery (Kim, 2019; Paivio, 1971). They are paramount in online shopping and e-commerce websites because of the intangibility of virtual shopping environments. The role of images in inducing mental imagery processing has been studied extensively, however little attention has been paid to its role in virtual environments such as e-commerce and e-tourism websites (Bogicevic et al., 2019). Mental imagery has been shown to enhance consumers' behavioral intentions. For example, Yoo and Kim (2014) and Kim (2019) have shown that images enhance behavioral intentions in online apparel shopping. Similarly, Park and Yoo (2020) have found that mental imagery positively impacts both product attitude and behavioral intention. Maier and Dost (2018) have also shown that mental imagery

enhances product evaluation and behavioral response. All these positive effects of mental imagery stem from the fact that imagery functions as sensory compensation (Lv et al., 2020) which play an important role especially in virtual environments and conflicting information in OCRs. Though the role of mental imagery in online shopping contexts has been explored, its role in online consumer reviews has been scarcely studied. Zinko et al (2020) have shown that images in OCRs reduce consumers' perceived uncertainty in virtual environments. However, the role of mental imagery in mitigating uncertainty stemming from conflicting OCRs remains unexplored. Therefore, we propose that mental imagery processing facilitated by the presence of images in OCRs mitigates the adverse effects of conflicting OCRs. Given that mental imagery enhances attitude strength, attitude confidence (Bogicevic et al., 2019), and behavioral intentions, we hypothesize the following:

H5a. Mental imagery moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on product evaluation will be smaller for the high mental imagery condition.

H5b. Mental imagery moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high mental imagery condition.

H6. The indirect effect of conflict on product evaluation is moderated by mental imagery such that consumers in the high mental generate higher attitude confidence.

Study I: Exploring conflicting information in online consumer reviews

3.1. Introduction

This study aimed to understand and interpret consumer responses to conflicting online consumer reviews (OCRs). Based on a literature review, a modified dual-process model is adapted to explain consumer information processing from OCRs. The model was tested thereafter using directed content analysis (Hsieh and Shannon, 2005) of qualitative data from verbal protocols, screen recording, and interviews.

3.2 Literature review

This section reviews the OCR literature to identify research gaps, and the following section seeks “to provide a theoretical filling of the gap” (Leidner, 2018, p. 555) by drawing on the modified dual-process model of Pennycook et al. (2015). Consumers often encounter conflicting information from OCRs. For example, (1) a very positive (e.g., a five-star review) and a very negative review (e.g., a one-star review) may occur successively on a review website, (2) the rating provided by an OCR may conflict with the products’ aggregated rating (e.g., Qiu, Pang, and Lim, 2012; López-López and Parra, 2016), (3) OCRs may present conflicting information about product attributes (e.g., Liu and Karahanna, 2017), or there may be conflicting OCRs across multiple review sources (e.g., Byun, Ma, Kim, and Kang, 2021). All these types of conflicting information are captured by the variance or dispersion) of the ratings, which most review websites display prominently (Yin et al., 2016). Variance represents the heterogeneity or dissensus across reviews of a product (Lee, Lee & Baek, 2021). None of the instances of conflict in the prior literature have accounted

for the schema -- the knowledge structure about products or brands, which serves as an anchor or reference point in forming judgments (Lee & Schumann, 2004), that consumers have before they begin reading OCRs. However, conflicting information challenges consumers and forces them to reconfigure their schema (Yoon, 2013; Chu, Lee & Kim, 2019).

Consumers processing conflicting OCRs may develop positive, negative, or inconclusive product evaluations (Hwang, Choi, and Mattila, 2018). Drawing on the HSM, Kim, King, and Kim (2018) have proposed that consumers' processing of conflicting information may depend on their motivation to form accurate evaluations or defend their prior attitude about the product. The human motivation to achieve cognitive consistency is a common assumption in balance theory, cognitive dissonance theory, congruity theory, and the HSM. But the role of such motivation as a universal human need has been questioned (e.g., Kruglanski, Jasko, Milyavsky, Chernikova, Webber, Pierro, & di Santod, 2018). Consumers reading OCRs may have different motivations apart from accuracy and defense of prior attitude. Khammash & Griffiths (2011) have found twenty-one consumer motives, including dissonance reduction, for reading OCRs. Such diverse motives will entail different psychological processes. Process models (as opposed to variance models) are required to gain insights into these psychological processes. Process models 'explain the sequencing of events that lead to some outcome' (Payne, Pearson, and Carr, 2017; p. 12), whereas variance models specify independent variables to account for the variance in the dependent variable (Komiak and Benbasat, 2008). Attention to processes is critical because one of the most significant criticisms of dual-process models (such as the ELM and the HSM) is that they conflate different information types with different processes (Gawronski & Creighton, 2013). It is common in the literature to classify characteristics of OCRs as central versus peripheral cues or some cues to be processed through the central route and others through the peripheral route. Such classification has also been noted by Cheng & Ho (2015): "researchers often classify the content quality of reviews into the central route and other cues into the peripheral route" (p.

884). However, this contradicts the multiple-roles hypothesis of the ELM, according to which a variable can take different roles under different circumstances (Kitchen, Kerr, Schultz, McColl, & Pals, 2014; Petty & Cacioppo, 1986). The processes by which the two types of information are integrated into judgments may be the same (Erb, Pierro, Mannetti, Spiegel & Kruglanski, 2007). The two processes in dual-process models are not homogeneous-within; they are two collections of processes. The dual-process models “assume a clear distinction” between the processes but “provide no further differentiation within both categories” (Glöckner & Witteman, 2010; p.1). Process tracing methods are required to explore the inside of those ‘categories’ or the ‘black box of decision processes’ (Todd & Benbasat, 1987). Such methods help us understand how consumers acquire and process information, which is crucial for marketers to elicit desired reactions to stimuli (Zuschke, 2020), including OCRs.

There is little consensus in the literature about the effects of conflicting information processing. Noting that different streams of research suggest a strengthening or a weakening of the attitudes resulting from conflicting information processing, Sengupta & Johar (2002) proposed that the resultant attitude will depend on the way conflicting information is processed, which in turn depends on the processing goals. Ambivalence enhances the processing of pro-attitudinal information, but the opposite effect, avoidance of processing counter-attitudinal information, has also been found (Clark, Wegener & Fabrigar, 2008). The empirical findings on the impact of dispersion or variance of OCRs are also mixed (He & Bond, 2015). Researchers generally introduce moderators of an effect to address mixed empirical results in the literature. Another way is to investigate the underlying mechanism or the processes via which the effect operates. He & Bond (2015) have noted that researchers have begun investigating the cognitive processes underlying the influence of OCR dispersion on consumer judgment. Byun et al. (2021) have called for investigating psychological mechanisms to explain the impact of conflicting OCRs on consumer decision-making and purchase intention.

In sum, our review of the literature shows that

- i. The impact of schema on OCR processing has not been explored
- ii. There have been calls to study the psychological processes underlying the impact of conflicting OCRs.
- iii. There is a contradiction in the literature regarding empirical findings on the effects of conflicting information processing.
- iv. There is an oversimplification in applying dual-process models in the OCR literature.

To address these gaps in the literature and respond to the research calls in the prior literature, we present a theoretical process model of conflicting OCR processing, collect data using process tracing methods, and use directed content analysis to validate and extend the model. Specifically, we address two main research questions:

- i. How do consumers process conflicting online consumer reviews?
- ii. What cognitive mechanisms underlie their decision-making in the presence of such conflicting information?

3.3. A process model of information processing from online consumer reviews

Dual-process models, e.g., the elaboration likelihood model (ELM) (Petty & Cacioppo, 1986) and the heuristic systematic model (HSM) (Chaiken, 1980) abound in consumer psychology and marketing and also the OCRs literature (Zhang et al., 2014; Cheung & Thadani, 2012). They cover a wide variety of psychological phenomena such as attribution, person perception, persuasion, self-regulation, emotion, etc. (Barrett, Tugade, & Engle, 2004). Two dual-process models – the ELM and the HSM– are common in the OCR literature; the ELM is especially popular (Cheung & Thadani, 2012). The ELM is so influential that in a framework integrating the OCRs literature, Zheng (2021) has categorized all ‘review-level features’ into the two routes of the ELM:

central and peripheral. However, the author also notes that some features (e.g., dispersion) are of a peripheral nature but require central processing. These dual-process models originated in the social psychology literature and have attracted criticism for conflating different information cues with different processes or processing routes. The cognitive psychology literature on dual-process theories emphasizes the role of cognitive control in information processing (Barrett, Tugade, and Engle, 2004). Cognitive control refers to the mental mechanisms that help people revoke or reinforce reflexive and habitual reactions to achieve the intended goals (Miller, 2000). It is essential to explain information processing when multiple stimuli compete for attention (Zhang, Xiao, and Nicholson, 2020), such as when consumers visit an OCR platform. It helps consumers evaluate and integrate information and predict the next steps to be taken to achieve their goals (Whang et al., 2021). Cognitive control processes are triggered in part “by the detection of the simultaneous activation of alternative and thus incompatible responses,” referred to as “response conflict” (Dewitte, Bruyneel, and Geyskens, 2009; p. 395). According to the conflict monitoring hypothesis (Botvinick, Braver, Barch, Carter, and Cohen, 2001), in the human mind, there is a system whose function is to monitor conflicts in information processing. Dewitte et al. (2009) have used the cognitive control theory and the conflict monitoring hypothesis to explain consumers’ self-regulatory decisions. Stillman & Ferguson (2019) argued that conflict is the defining feature of several classes of decisions, and choosing between multiple outcomes or responses fundamentally requires conflict resolution. We extend their argument to include OCR-based decision-making because OCRs often contain conflicting information. Also, the numerous cues, such as aggregated ratings, the number of reviews, the variance of ratings, heterogeneous consumer opinions, etc., will compete for attention and elicit response conflicts.

This study adopts and extends the modified dual-process model by Pennycook et al. (2015) to explain consumers' OCR processing, addressing criticisms of traditional dual-process models. While the focus was on the overall framework rather than an in-depth discussion of Type 1 or Type 2 processing, Type 1 refers to intuitive, automatic information processing that occurs with minimal cognitive effort. This fast, heuristic-

based processing plays a critical role in emerging judgments when consumers encounter conflicting OCRs, particularly in high-volume or time-constrained environments. The decision to focus on the broader model rather than an isolated discussion of Type 1 or Type 2 was intentional, as it aligns with the study's objective of exploring how consumers process conflicting OCRs.

To gain insights into the consumers' processing of conflicting OCRs, we adopt the modified dual-process model of Pennycook, Fugelsang, and Koehler (2015). Their model addresses some of the criticisms of dual-process theories and incorporates the cognitive control theory and the conflict monitoring hypothesis discussed earlier. According to Evans (2019), the Pennycook model is a rare example of a model that distinguishes between the two functions of the Type 2 processes — rationalizing the intuitive responses and engaging in reasoning to draw a conclusion. Most other models emphasize that the purpose of Type 2 processes is to reason; the idea of rationalizing is ignored. Reasoning is unbiased analysis of information guided by accuracy goals, whereas rationalization is biased and guided by prior beliefs or a pre-decision. We contend that consumers perform both the functions of Type 2 processes, and these are essential to understanding consumers' processing of OCRs and information processing in general.

Our process model (Figure 3.1) builds on the Pennycook model. It divides consumers' OCR processing into three stages: Emerging judgment (stage 1), Conflict detection (stage 2), and Conflict resolution (stage 3). Stages 1 and 2 correspond to Type 1 processing; stage 3 corresponds to Type 2 processing. The distinction between Stages 1 and 2 as Type 1 processing, and Stage 3 as Type 2 processing, is based on Pennycook's dual-process model, which has been adopted in this study. According to this model, Type 1 processing is characterized by fast, automatic, and intuitive judgments (Stages 1 and 2), while Type 2 processing involves slower, more deliberate, and analytical reasoning (Stage 3). This distinction is fundamental to the theoretical framework and is essential for understanding how different cognitive processes are involved in consumer review processing. As such, it is axiomatic to the study's design and analysis.

The three stages are discussed below.

Stage 1

According to the model, in Stage 1, consumers will first process the summary statistics of the OCRs displayed at the top of the OCR platforms. They will develop initial beliefs about the product on the basis of the summary statistics (Yin et al., 2016; Lee et al., 2021). This stage has a high potential for response conflicts because the dispersion of ratings and attribute-wise ratings are available here. The dispersion of ratings invariably signals heterogeneity; the attribute ratings are also most often dispersed. The summary statistics are visually salient and contain concrete numeric information. They are less effortful to process than the text of the reviews (Liu and Karahanna, 2017). These will be processed quickly because the fast and automatic Type 1 processes are ‘mandatory’ (Stanovich and Toplak, 2012); they are bound to occur when a consumer reads OCRs. The processes in Stage 1 lead to forming an emerging judgment (Liu and Karahanna, 2017) – an interim judgment before a consumer has formed the final decision.

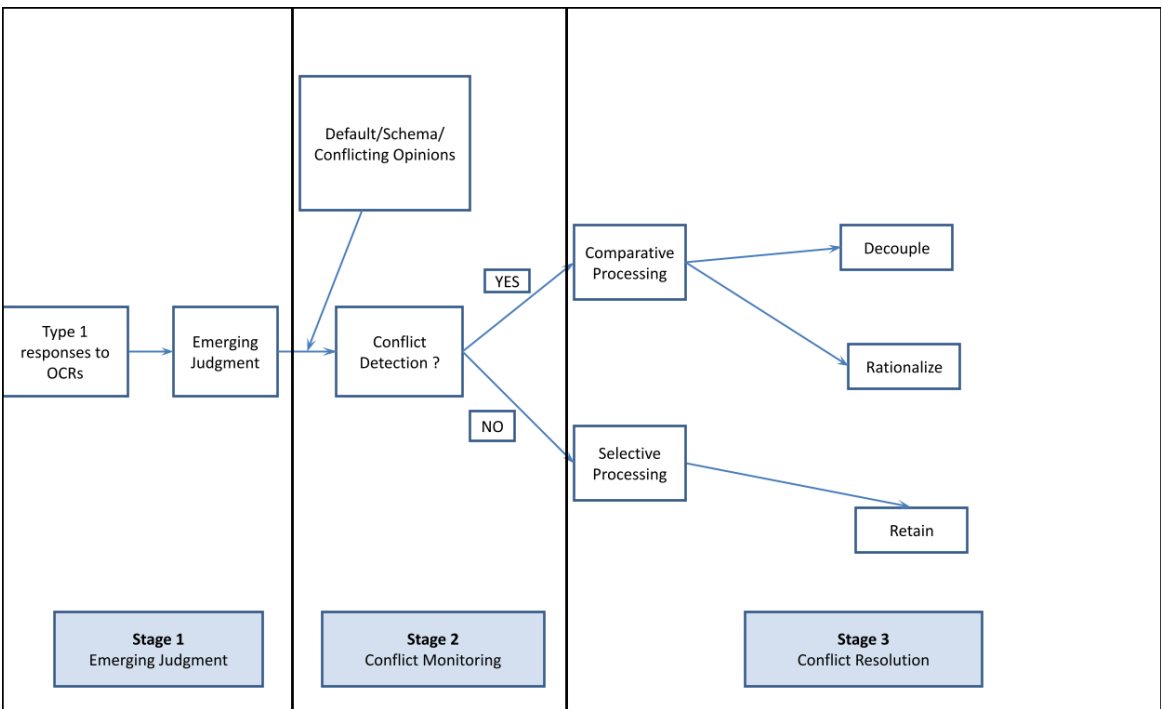


Figure 3.1: Stagewise processing of conflicting OCRs

The aggregated ratings are the default in the context of OCRs; consumers perceive them as the status quo and consider them before other options (Kupor & Tormala, 2018). They provide a quick, overall picture of the product (Qiu et al., 2012). Some consumers may prefer viewing them rather than the distribution of ratings because they consume fewer cognitive resources (LaCour and Serra, 2022).

Stage 2

Consumers arrive in stage 2 with an emerging judgment from stage 1, where the available information is primarily graphical. In stage 2, consumers will evaluate the product based on their reading of reviews.

Deviation from default

The reviews available to the consumer may be in conflict with the emerging judgment from stage 1 (Liu & Karahanna, 2017). Conflicts arising out of deviations from default or from emerging judgment can affect consumers' information processing. These types of conflict have been investigated by Qiu et al. (2012), López-López & Parra (2016), and Kupor and Tormala (2018). Qiu et al. (2012) investigated the conflict in OCRs arising out of the presence of a conflicting aggregate rating. According to their operationalization, when the rating of an OCR does not match with the aggregate rating, the OCR's credibility decreases and the perceived diagnosticity of the OCR is also low. López-López & Parra (2016) found that when the aggregate rating is positive, and a helpful-voted OCR is negative, consumers form a negative product attitude. Kupor and Tormala (2018) found that when an OCR is deviatory, that is, the OCR is a moderately positive review and the aggregate rating is extremely positive, the OCR is perceived as more persuasive.

Schema incongruity

Schema is an organizing framework for human cognition (Puligadda et al., 2012), allowing encoding, storage, and decoding of information (Yoon, 2013). It is an “anticipatory structure” that consumers use in searching and assimilating information (Puligadda et al., 2012), such as OCRs. Consumers may have a product category schema (Meyers-Levy & Tybout, 1989), a brand schema (Puligadda et al., 2012), a retail schema (Puccinelli et al., 2009), or a self-schema (Wheeler et al., 2005) all of which affect consumer information processing. Apart from the conflicting information in the OCRs, consumers’ schema may also trigger a response conflict known as schema incongruity. Sometimes, even popular brands cannot generate much online sales for some of their products; this may cause them to have low ratings and few reviews. Such instances may trigger conflict because of the schema consumers may have of the popular brands. Another instance of schema-based conflict may occur when a consumer has a network of associations about the attributes of a brand and the attribute ratings on the OCR platform are not aligned with the consumers’ expectations. Schema conflict may surprise consumers and trigger extensive processing of OCRs (Filieri, Javornik, Hang, and Niceta, 2021). It may also occur when consumers buy a product that does not meet their expectations, leading them to write a negative OCR (Ullah, Amblee, Kim & Lee, 2016).

Conflicting opinions

Conflicting opinions in OCRs may signal to consumers that complete information is present (Cheung, Luo, Sia, and Chen, 2009). However, when there is a lot of conflicting information, consumers may feel puzzled, discard or ignore such information (Kim and Lee, (2015), and be unable to decide whether to buy the product (Purnawirawan, De Pelsmacker & Dens, 2012). Conflicting reviews may trigger an adaptive behavior and enable consumers to realize whether more cognitive effort and thorough processing are required (Ruiz-Mafe, Chatzipanagiotou, and Curras-Perez,

2018). An essential premise of the three-stage model is that conflict detection stimulates systematic processing (Evans, 2019). Detection of conflict is a bottom-up or stimulus-based initiator of systematic processing. Both the ELM and the HSM emphasize the ‘selection of a particular style of thought’ (Bond, Bettman, and Luce, 2009, p. 5) depending on factors attributable to the consumer, for example, product involvement, motivation, etc. However, inconsistent or contradictory information may trigger Type 2 processing and the consumer may abandon their selected style of thought.

Stage 3

Conflict detection may fail or occur but remain unresolved (Pennycook et al., 2015) due to situational (for example, time pressure) or individual factors (for example, lack of product knowledge). Recently, Janssen, Veling, de Neys, & van Gog (2021) have shown the occurrence of conflict in both decision-making and decision-evaluation (evaluating decisions made by others). We contend that both these phenomena are relevant to processing OCRs. Consumers read OCRs to facilitate their purchase decision-making by evaluating the decisions of others, that is, the reviewers.

Type 2 or systematic processing occurs in stage 3. Whereas prior OCR literature using dual-process models regards systematic processing as one homogeneous process, the three-stage model distinguishes between two ‘classes’ of Type 2 processes- ‘rationalization’ and ‘cognitive decoupling.’ Rationalization is an attempt to justify or elaborate a prior response (e.g., the default or the emerging judgment), whereas decoupling is an attempt to reconfigure or change a prior response. Xiao and Lee (2014) distinguish decoupling from biased assimilation and find that decoupling is more effective at defending a positive attitude toward a brand.

Consumers lacking the motivation or opportunity to process OCRs carefully will likely proceed selectively (Kardes, 2013; Gottschalk and Mafael, 2017). Even if a consumer had sufficient motivation and opportunity to begin with, it might decrease during the OCR processing, leading to less effortful selective processing or

abandonment of the OCR platform. Such consumers are likely to retain their prior attitude toward the product, with a minimal change in schema.

3.4. Methodology and procedure

The previous sections presented a process model of consumer information processing from OCRs. In this section, we describe the collection and analysis of process-tracing data to explore consumer information processing from OCRs. We designed a process study since we were interested in the “how” of a process. Process studies focus on the how and the why of events in a process (Langley, Smallman, Tsoukas, Van de Ven, 2013). In this study, we explore the process of reading and navigating through OCRs on review websites. The study adopted three data collection methods – think-aloud activity, screen recording, and semi-structured interviews. Specifically, we used the think-aloud approach to collect verbal protocol data from twenty-five participants during a decision-making task.

Think-aloud or verbal protocol data have been used frequently in the OCR and online consumer behavior research (e.g., Li, Daugherty and Biocca, 2001; Gottschalk and Mafael, 2017; Li et al., 2017). Researchers have also used video recordings (e.g., Karimi, Papamichail, and Holland, 2015) and screen recording (Xu and Sundar, 2016) to capture process-level data. Follow-up interviews help respondents to retrospect their task performance and supply further insights about their protocols.

In qualitative research, purposive sampling is often employed to enhance the depth of understanding by selecting participants who can provide rich, relevant information (Campbell et al., 2020; Palinkas et al., 2015). Therefore, in this qualitative study, we employed purposive sampling. This ensured that respondents were most likely to offer valuable insights are included, allowing for a more focused exploration of the research topic (Kelly, 2010). From the sample, selected protocols were presented because they provided the most relevant and meaningful insights for illustrating the codes derived from the process model. Twenty-seven (nineteen male and eight female)

undergraduate students participated in the study in exchange for course credit. The participants performed a scenario-based decision-making task. After reading the scenario, they read OCRs on Amazon.com or TripAdvisor.com and decided whether to recommend the given product or not. Participants were randomly assigned to evaluate an electronic product (wireless earphones) or a hotel. The random assignment helped eliminate any selection or preference effects in participants about the product or service. Throughout their browsing and reading OCRs, participants verbalized their thoughts, which were audio-taped. We also obtained a screen recording of their browsing activity, followed by a semi-structured follow-up interview. The latter helped us triangulate the observations from the verbal protocols (Li et al., 2017).

We employed purposive sampling. The participants were students at a technical Indian university. Students were chosen as participants because of their significant engagement with OCRs, a behavior that aligns well with the objectives of Study 1. Expressly, students represent a tech-savvy demographic that frequently interacts with OCR platforms and relies heavily on OCRs for decision-making. Moreover, students form a significant chunk of online shoppers, and their online consumer behavior does not significantly differ from the general population (Jiang, Chan, Tan, & Chua, 2010).

Participants were selected based on their self-reported experience with reading and using online consumer reviews in their purchase decisions. Only those who indicated regular engagement with online reviews across multiple product or service categories were included in the study. All participants were active OCR platform users, each with an Amazon account. While not all participants had a registered TripAdvisor account, every participant had prior experience reading OCRs on TripAdvisor.com. The participants' familiarity with the platform and its review ecosystem ensured they could provide valuable insights relevant to the research questions.

Participants were provided with a scenario and the weblink to an electronic product on Amazon or a hotel on TripAdvisor. They could freely read from the OCRs available for the product. They were asked to decide whether they would recommend

purchasing the product or booking the hotel. It was iterated that they had to base their decision on the OCRs.

Earphones and hotels were chosen to represent different consumption situations and product types: earphones as a search product, where consumers rely on objective information, and hotels as an experience product, where subjective experience plays a larger role. This selection allows for a broader investigation of how conflicting online consumer reviews (OCR) are processed across different product categories.

Amazon and TripAdvisor were selected as they are two of the largest and most well-known OCR platforms, frequently used by consumers for product and service reviews. Their extensive presence in both consumer usage and academic literature makes them ideal platforms for studying consumer review processing in realistic settings. These platforms provide a diverse range of reviews, which enhances the external validity of the findings.

Protocol data were transcribed, and directed content analysis of the data was performed. The directed approach to content analysis is done when there is an existing theory or research about a phenomenon (Hsieh and Shannon, 2005). It is “structured and guided by theory” (Vespestad and Clancy, 2021, p. 4) and helps the researcher “to validate or extend conceptually a theoretical framework or theory” (Hsieh and Shannon, 2005; p. 1281). Our guided content analysis of protocols, supplemented with screen recording and interview data, helped us validate and extend the new dual-process model to explore consumers’ processing of conflicting OCRs and answer our research questions.

3.5. Findings

Analysis of the coded protocol data, screen recordings, and interview data supported the three stages in the processing of OCRs and the events in each of the stages.

3.5.1. Stage 1 processing by the participants

In Stage 1 participants processed concrete information (e.g., summary statistics of OCRs) available to them. Categorical and concrete information is easy to process and helps consumer efficiently deal with information overload (Luan, Shan, Wang, & Xiao, 2019) The screen recording data showed that all participants began OCR processing at the top of the webpage and paid attention to the summary statistics. Following the instructions to verbalize their thoughts continuously, several participants verbalized their observation of the summary statistics and the aggregate rating, which, as noted earlier is the default in the OCR context.

For example, a participant assigned to evaluate wireless earphones uttered:

"Ok, 29,306 global ratings! Many people have bought, that means."3.8 out of 5, and 45 % have given 5-star, that's good. "

Such protocols represent the Type 1 responses to the OCRs which forms the first phase of the Stage 1.

The verbal protocols and screen recordings of many participants showed that they paid attention first to the summary statistics of the OCRs, especially the aggregate rating, to form an emerging judgment.

In the second phase of Stage 1, participants form an emerging judgment and then carry on OCR processing. This was obvious in the following protocol:

“The first thing that I see is that there has been 716 review provided by different customers, so I believe this is a good amount of reviews which can help me in deciding...”

Specifically, the emerging judgment from the summary statistics of the OCRs was that this hotel has a good number of reviews.

One participant evaluating a hotel did not perceive the aggregated rating to be the default. He appeared to give more weightage to the hotel image than the aggregated rating:

“First thing that catches my eyes is the picture, how does the hotel look”. Hmm, 4.5”

The inclusion of images enhances the veracity of OCRs and reduces the effects of information overload (Zinko, Stolk, Furner, & Almond, 2020).

Protocols from two other participants noting the aggregated rating as the default were:

“4.5, that’s obviously much better review.”

“3.8 out of 5 from 30000 ratings which is good, pretty good.”

Another participant had a different default:

“I look for how many people have given a number of stars. Okay around 60% raters have given a 5 star.”

“Then I look for latest or recent reviews, I use the drop down to look for types of reviews [e.g. critical reviews].”

Another participant, assigned to evaluate a hotel, verbalizes her emerging judgment:

“The hotel has a wow 4.5 star out of 5 stars... As well as the hotel has at least 4 star rating in any of the areas [referring to the attribute-wise ratings].”

The verbal protocols and screen recordings showed that participants were more interested in viewing images of the experience product (hotels) versus search product (earphones)

3.5.2. Role of schema in conflict monitoring

After forming an emerging judgment in Stage 1, participants proceed to Stage 2. The emerging judgement forms the basis of a conflict detection. Participants may detect a conflict if they find that their schema is incongruent with the emerging judgment. The impact of schema incongruity on OCR processing is evidenced in the following protocol by a participant assigned to evaluate wireless earphones:

“So, the customer rating is 3.8 out of 5, which is quite low, as I am accepting at least 4.2 for electronics products”

This participant revealed an element of her schema for the electronics product category and perceived a schema incongruity. In the follow-up interview she revealed that for electronics product she expects a product to have an aggregate rating of at least 4.2 out of 5.

Confidence in emerging judgment

As the participants advanced from one stage to another, their cognitive involvement increased. We found that seventeen participants detected a conflict at least once in the process of browsing and reading the OCRs. Some participants were actively seeking conflicting information to examine the contradictory opinions of reviewers. For example, one participant verbalized, “...these are all good reviews, can I find a negative review somewhere?” and then clicked on the hyperlink “Poor” to navigate to poor reviews on TripAdvisor. Such behavior is indicative of attempts to be more certain or confident about their attitude. This participant reported feeling confident that the online reviews provided a complete picture of the hotel. Confident attitudes are more predictive of behavior (Glasman and Albarracin, 2006). When the participant was asked,

in the follow-up interview, to recall any instance of confusion or conflict during the task, the participant reported, “As per some people, the room service is fast and good; as per others, it is horrible. Someone was especially pleased with the room service; others specifically pointed it out”. The participant also revealed that one of his ways of resolving conflict was to look at the ratio of positive and negative reviews; this was also detected in the verbal protocol data of the participant.

3.5.3. Rationalization and decoupling for conflict resolution

We gained additional insights by virtue of triangulating verbal protocol data with screen recording data. For example, after verbalizing "... everyone has given five stars, that's not good", screen recording data revealed the participant hurriedly scrolled the web page, skipped 5-star reviews, and stopped and focused on a 3-star review. Such comparative processing occurs in bottom-up (stimulus-based) information processing or when the motivation and opportunity to process information are high (Kardes, 2013). Indeed, the scenario was framed with the intent to induce high motivation in the participants. They had ample opportunity to process information; following Li et al. (2017), we explicitly informed the participants that there was no time restriction. Comparative processing was evidenced by another participant who read a few OCRs and then scrolled back to read the product description, comparing the attribute descriptions by the reviewers with those written by the brand. He seemed to agree more with the product description by the brand and then denigrated the OCR:

"I don't think this is a helpful review; I'm not sure why it is highly liked [referring to the helpful votes received by the review] by so many people"

In Table 3.1, we provide exemplar protocol segments (within speech marks), and relevant observations from screen recording, revealing participants' conflict detection and conflict resolution. Thereafter, we discuss how participants detected and resolved conflict by utilizing different pieces (e.g., textual information, consensus information, aggregate rating, individual review rating, distribution of ratings, and images) of OCR information

Table 3.1. Exemplar protocol segments on conflict detection and conflict resolution

Participant	Conflict detection	Conflict resolution
1	Immediately after noting that 45% gave 5-star, says "But 15% also gave 1-star?"	
2		"One or two major, ... umm, minor mistakes like from their management side", on seeing a negative review
3	While looking at only 4-star reviews "Anything, anything negative by the four stars"	Seeing conflicting opinions about the attribute comfort, "I think comfortable depends on person to person"
4	"In pics it is looking very very fine and how is he [the reviewer] saying that rooms are very ordinary"	Again goes back to look at the room pictures and says while clicking to move from one picture to another, " how they are telling that rooms are ordinary?"
5	"...one of the review mentioned about fast service but here the review has mentioned that room could have been bit better...I have to look at a few other reviews..."	"...and since majority of the people have mentioned that customer service was good, I can assume that the customer service at this hotel

Participant 1 in Table 1 detected conflict by noting the bar graphs which indicate the percentage of reviewers assigning one through five stars to the product. Specifically, the participant noted the number of people giving very positive (five stars) and very negative (one star) ratings.

Participant 2's verbal protocol showed no evidence of conflict detection. This does not necessarily mean they did not detect a conflict. They may have detected the conflict but not verbalized it.

Participant 3 actively sought conflict detection by looking for some negative attribute mentioned in a four-star review.

Participant 4 detected conflict by comparing two very different pieces of information. They compared the hotel images with the review text and observed that the hotel evaluation by the reviewer was inconsistent with the hotel images.

Participant 5 compared the review by two reviewers and found them conflicting.

We now discuss conflict resolution by the participants, as observed in their verbal protocol data.

Participant 1 did not verbalize their conflict resolution.

Participant 2 seemed to resolve the conflict by rationalizing. As mentioned earlier, rationalization is an attempt to justify or elaborate a prior response. The participant discounted the negative evaluations by the reviewer, saying that those were minor mistakes by the hotel management.

Participant 3 read some negative evaluation about the comfort level of the earphone's fit and tried to rationalize it by saying that perceptions of comfort are subjective and may vary from person to person.

Participant 4 attempted to resolve their conflict by reconfiguring their prior positive response about the hotel. The participant doubted the poor evaluation by the reviewers and scrolled back to view the hotel images which they had found to be good. As mentioned earlier decoupling is different from biased assimilation and is attempted to defend a positive product attitude (Xiao & Lee, 2014).

Participant 5 resolved their conflict by giving more weightage to the consensus among the reviewers. They observed that the majority of the reviewers had a positive opinion about the hotel's customer service.

3.6. Conclusion

This study demonstrates some of the contingencies in consumers' processing of conflicting OCRs. It also revealed that consumers may or may not detect the presence of conflicting information. Some consumers may even seek conflicting information to inform their purchase decisions and reinforce or change their prior attitudes about the product for which they read OCRs. We adapted a modified dual process model to explain information processing from OCRs. Prior dual-process models applied to OCR processing do not make explicit predictions about how consumers will process conflicting information. However, the current model posits that consumers may detect a conflict and have different strategies to deal with conflicting information. The model presented and validated with qualitative data professes that consumers engage in stage-wise processing of conflicting OCR information. Depending on contextual factors such as the default, the schema, and the level of conflicting opinions in the OCRs, consumers may or may not detect a conflict. Understanding the contextual factors involved in processing conflicting OCRs helps clarify the inconsistencies found in the literature regarding the impact of conflicting OCRs on consumer attitudes and recommendation intention. Analysis of verbal protocol and screen recording data reveals that consumers have different approaches to processing OCRs. While most participants initially focused on easy-to-process information (e.g., aggregate ratings and summary statistics), they selectively weighted additional information to bolster their confidence in their initial judgment or scrutinize conflicting information more closely. This processing involved invoking their

schemata, prioritizing salient or vivid information, and engaging in deeper analysis when confronted with contradictory information. Motivated by conflicting information, some consumers delved into deeper processing, updated their emerging judgment, and bolstered their confidence in their attitudes. Indeed, according to some theoretical accounts (e.g., balance theory), consumers are naturally motivated to resolve inconsistencies (Aaker & Sengupta, 2000). Others compared conflicting evaluations to understand the reasons behind the contradiction. Yet another strategy involved prioritizing information that aligned with their emerging judgment. The insights were made possible through the adoption of the more granular dual-process model by Pennycook et al. (2015), which was further enriched by incorporating rich qualitative data.

Traditional dual-process models, such as the elaboration likelihood model, provide an ‘anatomy’ of information processing and attitude change, whereas extensions of the models pursue the ‘physiology.’ In other words, dual-process models effectively describe and categorize processes but lack sufficient detail to comprehensively explain how these processes unfold (Bitner & Obermiller, 1985). In this regard, the cognitive appraisals approach (Rucker et al., 2014) extends, rather than challenges, prior models. One of the benefits of taking a granular look at different types of processes undergone by consumers processing conflicting OCRs is that it explains the differential processing outcomes. Moreover, the recruitment of Type 2 processes in the event of a contradiction between Type 1 processes is a feature of dual process models but is absent from the OCR literature. In the current study, we draw on a novel dual process model (Pennycook et al., 2015) to specify conflicting OCRs as a likely initiator of Type 2 processing.

The data analysis also indicated that consumers placed greater emphasis on attribute information when evaluating search products (earphones), and relied more on experiential information when evaluating an experience product (a hotel). Additionally, the study found that participants considered hotel images to be crucial in resolving conflicting opinions expressed in online customer reviews. Consumers differing in their ability to detect and resolve conflicting information in OCRs motivates us to investigate individual differences in handling conflicting information, which we will undertake in Study 2. Since we aim to focus on conflicting information, we remove (by exercising

experimental control) other contingencies identified in this study. Specifically, we use unbranded products as stimulus in Study 2 so that, prior attitudes and schema incongruity are ruled out.

Study 1 is exploratory, and no claims are made about generalizing the results to a wider population. However, the study employs the concept of ‘qualitative generalization,’ or ‘generalization to the phenomenon’ (Levitt, 2021), aiming to generalize the findings to the broader phenomenon of conflicting OCR processing.

Study II: The moderating role of dialectical thinking **(experience product)**

4.1. Overview

The objective of Study II was to test the moderating role of dialectical thinking in consumers' responses to conflicting online consumer reviews (OCRs). The variance of the ratings (ratings variance) was used to operationalize conflicting information in OCRs. The study also tested the mediating effect of attitude confidence and whether this effect (in addition to the direct effect of conflicting OCRs) was also moderated by dialectical thinking. Specifically, we hypothesized that consumers processing high- (versus low-) conflict OCRs would be less confident about their attitudes toward the target and would exhibit lower recommendation intention. Moreover, this effect would be moderated by dialectical thinking. The level of conflict in OCRs was manipulated by manipulating the variance of the ratings. (See Appendix A1). Participants were first primed with high or low dialectical thinking with the help of a reading-and-writing exercise adapted from prior literature. Figure 4.1 depicts the conceptual model for this experiment, and the hypotheses are listed in Table 4.1.

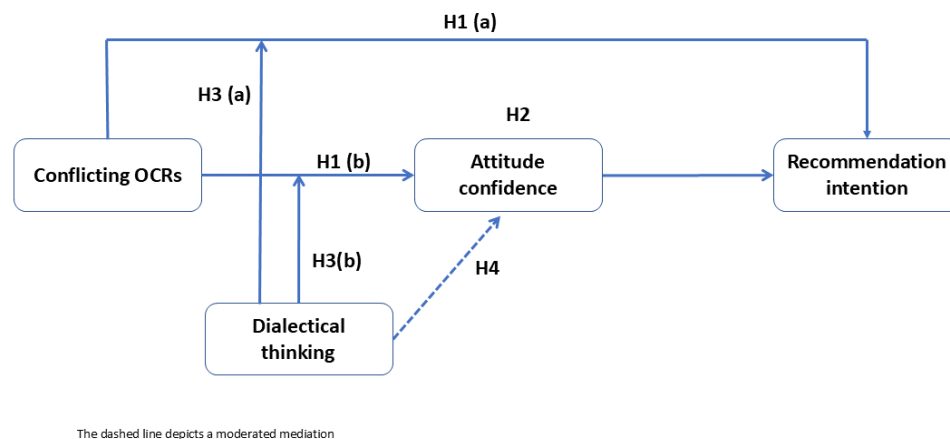


Figure 4.1. Conceptual Model of Study 2

Table 4.1. Hypotheses of Study 2

H1 (a)	Conflicting OCRs decrease recommendation intention
H1 (b)	Conflicting OCRs decrease attitude confidence
H2	Attitude confidence mediates the effect of conflicting OCRs on recommendation intention.
H3 (a)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on recommendation intention will be smaller for the high-dialectical thinking condition.
H3 (b)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high-dialectical thinking condition.
H4	Dialectical thinking moderates the mediating effect of attitude confidence such that high dialectical thinking consumers generate higher attitude confidence

4.2. Product Selection

We selected a tourism product because Online Consumer Reviews (OCRs) are crucial in the tourism and hospitality industry. The intangibility and higher risk perceptions of tourism offerings make consumers more likely to seek OCRs for decision-making, and marketers are more likely to use OCRs to their advantage because of the intense competition in the industry (Litvin et al., 2008).

We selected the product on the basis of two criteria: (a) familiarity and (b) relevance to the participants. All participants had prior experience booking online hotels and other types of stays for leisure trips. Therefore, we selected a houseboat at a probable tourist destination for the participating students. To avoid any confounding effects, such as prior brand attitude or brand familiarity, the target stimulus was given a fictitious name (Royal Houseboat).

4.3. Stimulus Development

Online ratings invariably accompany OCRs on all major OCR platforms, such as Amazon.com and TripAdvisor.com. They take precedence over other forms of word-of-mouth when consumers seek information about the quality of tourism and hospitality offerings (Gavilan, Avello, & Martinez-Navarro 2018). The dispersion of ratings is prominently displayed on the top of OCR platforms, and consumers form an “emerging judgment” about the product or service on the basis of this visual information (Yin, Mitra, & Zhang, 2016; Lee et al., 2021; Liu & Karahanna, 2017). Therefore, we chose an OCR stimulus that shows bar graphs showing the variance or dispersion of ratings. The variance of ratings depicted by bar graphs captures conflicting opinions or the level of disagreement amongst the reviewers. The online ratings were preceded by descriptive information about the houseboat and two images of the houseboat. This is consistent with how OCR platforms present information to consumers.

Bar graphs showing the variance of the ratings have been used in prior research (e.g., He & Bond, 2015; Chu, Roh, & Park, 2015). The standard deviation of the ratings was calculated, and the bars were manipulated accordingly to have a high and a low ratings variance. In accordance with He & Bond, 2015, we set the SD equal to 1.6 for the high variance condition and equal to 0.7 for the low variance condition. The participants only saw the bars reflecting the manipulated standard deviation and the aggregate rating. A rating of 8.5 versus 6.5 out of 10, respectively, was shown for the high and low aggregate rating conditions. Thus, the level of conflict in OCRs was manipulated by showing high- or low-variance of ratings.

The stimuli for dialecticism priming were two passages adapted from DeMotta (2021). The passages primed the participants with high versus low dialecticism. We pre-tested the passages for the intended manipulation ahead of the main experiment.

4.4. Experiment design and participants

Study 2 was a 2 (ratings variance: high vs. low) X 2 (dialectical thinking: high vs. low) between-subjects experimental design. We used a convenience sample of one hundred and seventy undergraduate students. Students form a major chunk of online shoppers, and their online consumer behavior does not significantly differ from the general population (Jiang, Chan, Tan, & Chua, 2010). Though the use of convenience student samples is contentious, they are overwhelmingly used in marketing, consumer behavior, and social psychology research (Peterson & Merunka, 2014; Ashraf & Merunka, 2017). Moreover, participants sourced from online panels (e.g., MTurk) also are a convenience sample (Rapp & Hill, 2015).

Citing Cohen (1988), Hair et al. (2010) recommend a minimum of twenty participants per cell. Therefore, our overall sample size of one hundred and seventy was deemed adequate. Undergraduate students (N = 170, 81.76% male, mean age = 20.71 years) studying an introductory industrial management course at an Indian university participated in the experiment in exchange for partial course credit. We had a skewed gender ratio, but that was not a concern because Hernández, Jiménez, & Martín (2011) have empirically established that socioeconomic variables (age, gender, income) do not moderate the online shopping behavior of experienced shoppers. Indeed, all our participants were experienced online shoppers.

The skewed gender ratio in the participant sample could limit the generalizability of the findings, as the results may primarily reflect the preferences or behaviors of males, the overrepresented gender. This imbalance may also introduce bias, potentially influencing the observed effects in ways that differ across genders. Future research should aim for a more balanced sample to ensure that gender-specific influences are adequately captured and that the findings are representative of a broader population.

One limitation of student samples is that they may be on the lower side of the purchasing power and relatively homogeneous in terms of other demographic variables.

This may, perhaps lower the external validity of the study. However, there are alternative views among researchers regarding convenience sampling. For example, Kriska et al. (2013) consider all human participant samples as convenience samples because ethical requirements necessitate voluntary participation, and the high costs of implementing pure random sampling often render it impractical. Crowdsourced samples from online panels are an alternative to student samples. However, such samples have been found to be of lower quality in comparison to student samples. For example, Novielli et al. (2023) found that Qualtrics panel samples may be of lower quality than that of student pool samples with regard to attentive responding.

Student samples have been favored in the OCR literature because they belong to the age group that makes up almost 95% of the consumers who read OCRs (Wu et al., 2020).

Three participants did not follow the instructions in the first part of the experiment. They failed to write according to the passage they were assigned. They completed the experiment, but their data were removed from the analysis, leaving a sample of 167. Participants were randomly assigned to one of the four experimental conditions. The demographic information of the participants is shown in Table 4.2.

Table 4.2. Demographic data of participants

		Frequency	Percentage
<u>Age (years)</u>	16-21	108	63.53%
	22-27	62	36.47%
	28-33	0	0.00%
	34-39	0	0.00%
<u>Gender</u>	Male	139	81.76%

	Female	31	18.24%
<u>Online Shopping Expenditure (INR)</u>	< 25,000	98	32.46%
	25,000-50,000	68	40.00%
	50,000-75,000	1	0.59%
	75,000-100,000	3	1.76%
	> 100,000	0	0.00%

4.5. Procedure

The study followed the independent studies paradigm, in which participants are made to believe they are participating in unrelated studies (Geuens & Pelsmacker, 2017). Participants first read the instructions. They read that they were to participate in two short experiments — a “psychology study” and an “online reviews study.”

They were asked to imagine that they were planning a trip to Srinagar (a tourist spot), with their friends. One of their friends has sent them the link of a houseboat on an online booking website where online consumer ratings are also available. The friend has asked them to view the ratings of the houseboat and decide whether they would recommend booking the houseboat during.

Dialectical thinking priming The supposed “psychology study” primed participants with high or low dialectical thinking using a reading-and-writing task adopted from DeMotta (2021). Participants in the high- and low-dialecticism conditions read passage 1 or passage 2 (See Appendix A2), respectively, and recalled and wrote an experience in accordance with the outlook presented in the passage. Participants were asked to rate three statements adopted from DeMotta (2021) for the manipulation check of dialecticism.

Conflicting OCRs After the priming task participants completed the “online reviews study”. They read the houseboat description and viewed the houseboat picture and its online ratings.

After processing the houseboat stimulus, the dependent measures, manipulation checks, and demographic questions followed.

4.6. Dependent measures

The dependent measures, the corresponding items, the scale reliabilities, and the sources of the scale are reported in Table 4.3 below. All items were measured on a seven-point scale.

Table 4.3. Scale items, reliabilities, and source

Dependent measure	Item(s)	Cronbach's α	Source
Recommendation intention	Based on the ratings, how likely are you to recommend this houseboat to a friend, if asked	—	Furner, Drake, Zinko, & Kisling (2022)
Attitude confidence	1. How confident are you in predicting [your attitude toward the houseboat] 2. How certain are you of [...] 3. How well can you predict your [...]	$\alpha = .818$	Moore (2105)

4.7. Results

4.7.1. Pretest of dialecticism manipulation

To manipulate dialectical thinking, we adopted the priming exercise used by DeMotta (2021). Their research was conducted in a different country, so we did a pretest ($N = 33$ participants) to ensure that the exercise indeed primed different levels of dialecticism in Indian participants. Thirty-two undergraduate students participated in the pretest. They were randomly assigned to read Passage 1 or Passage 2, respectively, for high and low dialecticism (see Appendix A2). After that, they were instructed to recall an incident in which they experienced ‘change and contradiction’ or ‘stability and consistency’ as described in the passages. Participants could write freely without a time or word limit. After the writing exercise, the participants indicated their agreement ($1 = \text{strongly disagree}$, $7 = \text{strongly agree}$) with three statements used by DeMotta (2021): (1) “Life is full of contradictions” ($M_{\text{HDL}} = 3.93$, $SD = 2.40$, $M_{\text{LDL}} = 2.22$, $SD = 1.16$, $t(30) = 2.64$, $p = .013$), (2) “Things in the world are different from one time to the next” ($M_{\text{HDL}} = 3.50$, $SD = 2.50$, $M_{\text{LDL}} = 2.11$, $SD = 1.07$, $t(30) = 2.12$, $p = .042$), and (3) “A person can be both good and bad at the same time” ($M_{\text{HDL}} = 3.71$, $SD = 2.05$, $M_{\text{LDL}} = 1.94$, $SD = 1.056$, $t(30) = 3.167$, $p = .004$). The three scores were averaged ($\alpha = .91$) to compute a dialectical thinking index ($M_{\text{HDL}} = 3.71$, $SD = 2.15$, $M_{\text{LDL}} = 2.09$, $SD = 0.93$, $t(30) = 2.87$, $p = .007$). The results showed that the participants in the HDL condition reported significantly higher levels of agreement with each of the three statements. The statements were designed such that higher scores indicated higher dialectical thinking.

Dialectical thinking was also measured using six items of the attitude towards contradiction subscale of the Analysis-Holism Scale (Choi, Koo, and Choi, 2007). The two groups showed significant differences ($M_{\text{HDL}} = 4.00$, $SD = 1.14$, $M_{\text{LDL}} = 2.75$, $SD = .97$, $t(30) = 3.34$, $p = .002$).

4.7.2. Manipulation checks

To test whether the manipulations were perceived by the participants as intended, we conducted a one-factor ANOVA on the manipulation check question. Levene's test of homogeneity of variances showed that the assumption of homoscedasticity was violated ($F(1, 165) = 12.303, p = 0.001$). Since the group sizes were unequal, we expected the variances to be unequal. Nevertheless, the $F_{\max}$ ($= 2.05$) was small, and the ratio of the largest to the smallest cell size was 1.08. These are within the limits suggested by Tabachnick and Fidell (2012) to assess the homogeneity of variance, so we proceeded with the ANOVA. The results of the one-factor ANOVA revealed that participants perceived the high-variance condition as less consistent than the low-variance condition ($M_{HV} = 4.23, M_{LV} = 5.55; F(1, 165) = 44.188, p < .001$).

4.7.3. Hypotheses tests

Recommendation Intention and Attitude Confidence.

To examine differences in the participants' response to conflicting OCRs, we performed a 2X2 (ratings variance x level of dialectical thinking) between-subjects multivariate analysis of covariance (MANCOVA) on recommendation intention and attitude confidence, with aggregate rating as a covariate. Follow-up univariate analyses were conducted after MANCOVA.

The result of Box's M test suggested that the assumption of homogeneity of variance-covariance matrices across groups was met (Box's $M = 18.887, p = .030$). The MANCOVA showed that participants responded significantly differently in terms of recommendation intention and attitude confidence. The results of the MANCOVA revealed a significant main effect for ratings variance (Pillai's Trace = .107, $F[2, 161] = 9.662, p < .01$) and dialectical thinking (Pillai's Trace = .115, $F[2, 161] = 10.428, p < .01$). The interaction between ratings variance and dialectical thinking was also significant (Pillai's Trace = .050, $F[2, 161] = 4.217, p < .05$).

Univariate Analyses

The assumption of homogeneity of variances was violated, however ANOVA is robust to normality violations (Schmider et al., 2010; Blanca Mena et al., 2017) so we proceeded with univariate ANOVAs. The results, shown in Table 4, of the MANCOVA and the follow-up univariate analyses revealed that ratings variance had a significant main effect on recommendation intention and attitude confidence. The dialectical thinking priming had a significant main effect on recommendation intention only. The interaction (ratings variance x dialectical thinking) had significant effects on recommendation intention and attitude confidence. The covariate aggregate rating significantly affected both recommendation intention and attitude confidence. The results (F s and the significance levels) are shown in Table 4.4.

Table 4.4. MANCOVA and Univariate Follow-up Results

			Univariate analyses		
	Pillai's trace	p value	Dependent variable	F	p value
Aggregate rating	.081	.001	Recommendation intention	11.709	.001
			Attitude confidence	5.684	.018
Ratings variance	.107	.000	Recommendation intention	12.477	.001
			Attitude confidence	11.737	.001
Dialectical thinking (DT)	.115	.000	Recommendation intention	15.300	.000
			Attitude confidence	10.704	.001
Ratings variance X DT	.050	.016	Recommendation intention	7.262	.008
			Attitude confidence	3.008	.085

Simple effects analyses

To test hypotheses H1(a) and H1(b) and to make sense of the interactions, we conducted simple effects analyses. Simple effects analyses break down interaction and look into the effect of one factor in an experiment at individual levels of the other factor (Field, 2017).

The Least Significant Difference- adjusted comparisons showed that for participants primed with low dialectical thinking, the recommendation intention was 1.297 points lower when the variance of the ratings was high ($p < .001$, 95% *CI* of the difference = .705 to 1.888). This mean difference was not significant when the participants were primed with high dialectical thinking ($p > .05$, 95% *CI* of the mean difference = -.397 to .745). Thus, we find partial support for H1 (a).

The attitude confidence of the participants in the low-dialectical thinking condition was 0.748 points lower when the variance of the ratings was high ($p < .001$, 95% *CI* of the difference = .336 to 1.159). Thus, we find partial support for H1 (b). Detailed results of the simple effects analysis are shown in Table 4.5; the mean differences are computed from estimated marginal means.

The first two hypotheses [H1 (a) & H1 (b)] posited that Conflicting OCRs decrease recommendation intention and attitude confidence. However, our results indicate that these effects hold true only at the low level of Dialectical Thinking (DT, the moderator). Specifically, when DT is low, Conflicting OCRs have the hypothesized negative effect on both recommendation intention and attitude confidence. Conversely, when DT is high, the negative effects of Conflicting OCRs on both outcomes weaken significantly and become statistically non-significant.

Simple effects analyses show that the expected negative effect of Conflicting OCRs on recommendation intention and attitude confidence is significant only for the low DT condition. Thus, while the negative effects align with the hypothesized direction, they are present only under certain conditions (low DT). This interaction effect, highlighted through the simple effects analyses, accounts for the partial support of the hypotheses.

Table 4.5. Mean differences between high and low-variance conditions

Dependent variable	Dialectical thinking	Mean difference (low vs. high variance)	<i>p</i>	95% Confidence interval for difference	
				Lower Bound	Upper Bound
Recommendation intention H1(a)	High	.174	.549	-.397	.745
	Low	1.297*	.000	.705	1.888
Attitude confidence H1(b)	High	.245	.226	-.153	.642
	Low	.748*	.000	.336	1.159

Mediating effect of attitude confidence

To test hypothesis H2, we estimated a simple mediation model (Fig. 4.2) using the PROCESS macro for SPSS (Hayes, 2017). The PROCESS macro computes bootstrap confidence intervals for estimates of the mediation effect.

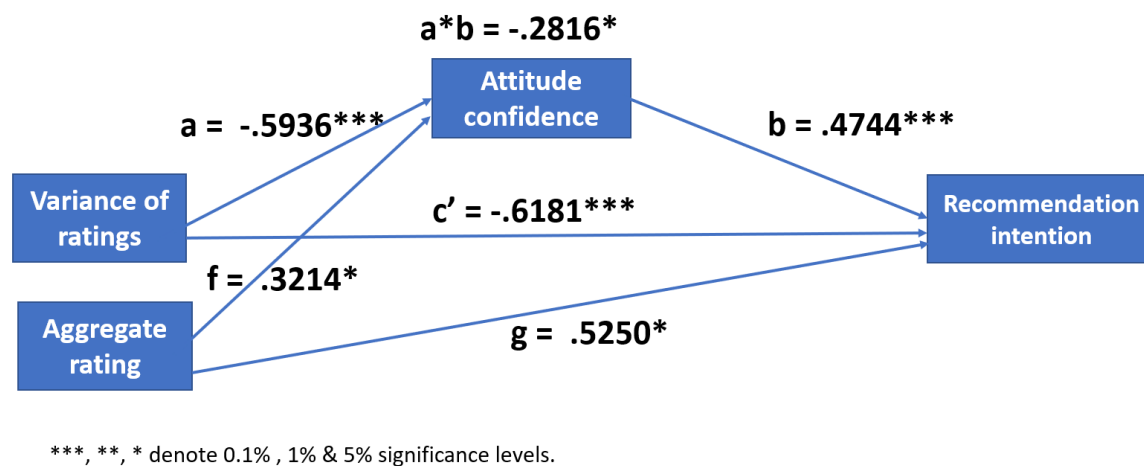


Figure 4.2. The simple mediation model

The mediation model in Figure 4.2 shows the coefficients and the significance levels. The detailed results are shown in Table 4.6 and Table 4.7. The mean attitude confidence reported by participants in the high variance (HV) group was significantly lower than the mean of the mean attitude confidence of the low variance group. The low attitude confidence led to a significantly lower ($c' = -.6181$, $p < .05$) direct effect on recommendation intention for the high variance group. The indirect effect of conflicting OCRs via attitude confidence on recommendation intention ($a \times b = -.2816$) was significant; the 95% confidence interval based on 5000 bootstrap samples estimated this effect to lie between $-.5020$ and $-.1089$. This finding supports hypothesis H2, that attitude confidence mediates the effect of conflicting OCRs on recommendation intention.

Table 4.6. The model coefficients of the simple mediation model

	Consequent					
	Attitude confidence			Recommendation intention		
Antecedent	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>
Ratings variance	-.5936	.1466	.0001	-.6181	.2154	.0046
Aggregate rating	.3214	.1466	.0297	.5250	.2083	.0127
Attitude confidence	—	—	—	.4744	.1094	.0000
Constant	6.0238	.2397	.0000	2.9707	.7397	.0001
	$R^2 = .1083$, $F(2, 164) = 9.9617$, $p = .0001$			$R^2 = .2229$, $F(3, 163) = 15.5861$, $p = .0000$		

Note: We report unstandardized regression coefficients. *SE* is Standard Error

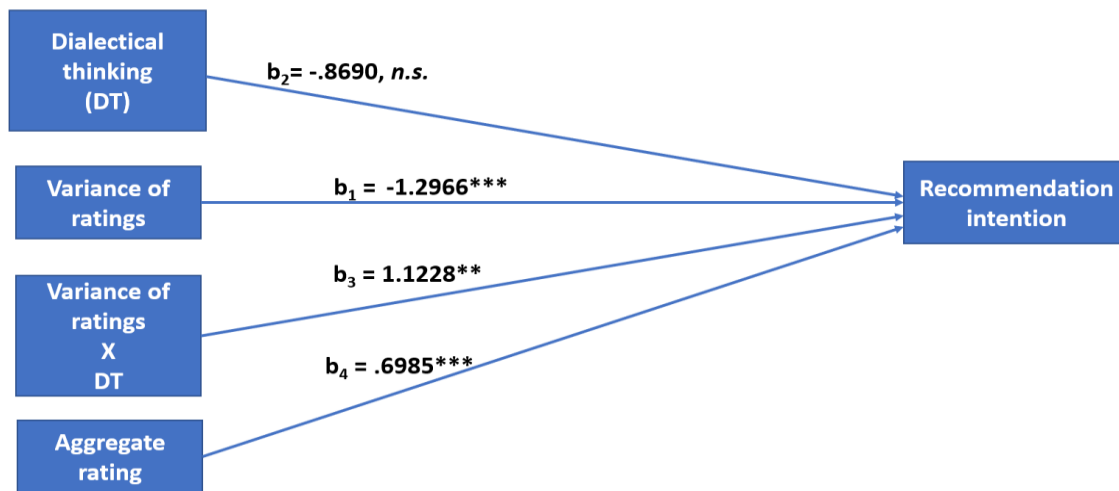
Table 4.7. The total, direct, and indirect effects

Total effect of conflicting OCRs on recommendation intention				
	Effect	SE	p	
	-.8997	.2162	.0001	
Direct effect of conflicting OCRs on recommendation intention				
	-.6181	.2154	.0046	
Indirect effect of conflicting OCRs on recommendation intention				
	Effect	BootSE	BootLLCI	BootULCI
	-.2816	.1006	-.5020	-.1089

Note: BootLLCI & BootULCI = lower and upper limits of bootstrap confidence intervals

Moderating effect of dialectical thinking

Figure 4.3 shows the statistical diagram for the moderation. To test the moderation hypothesis H3(a), we used Model 1 in the PROCESS Macro for SPSS (Hayes, 2017) with 5000 bootstrap samples. The moderation model was significant ($R^2 = .2448$, $F(4, 162) = 13.1257$, $p < .001$). Detailed results are shown in Table 4.8.



***, **, * denote 0.1%, 1% & 5% significance levels. n.s. = not significant

Figure 4.3. The moderation model for recommendation intention

Table 4.8. Model coefficients for the moderation model for recommendation intention

$R^2 = .2448$ $MSE = 1.7074$, $F(4, 162) = 13.1257$, $p = .0000$						
	β	SE	t	p	LLCI	ULCI
Constant	6.0573	.5225	11.5936	.0000	5.0256	7.0891
Ratings variance	-1.2966	.2996	-4.3277	.0000	-1.8882	-.7049
Dialectical thinking (DT)	-.8690	.6706	-1.2959	.1969	-2.1931	.4552
Ratings variance x DT	1.1228	.4166	2.6947	.0078	.3000	1.9455
Aggregate rating	.6985	.2041	3.4219	.0008	.2954	1.1017

The result (Table 4.8) above shows that the interaction between ratings variance and dialectical thinking was significant. Figure 4.4 shows the interaction plot.

Table 9 shows the conditional effects of conflicting OCRs for high and low dialectical thinking participants. The conditional effect of conflicting OCRs on recommendation intention was significant for low but nonsignificant for low dialectical thinking. Conditional effects of ratings variance for high and low dialectical thinking are shown in Table 4.9.

Table 4.9. Conditional effects of ratings variance on recommendation intention for high and low dialectical thinking

	Effect	se	t	p	LLCI	ULCI
Low Dialectical Thinking	-1.2966	.2996	-4.3277	.0000	-1.8882	-.7049
High Dialectical Thinking	-.1738	.2893	-.6008	.5488	-.7450	.3974

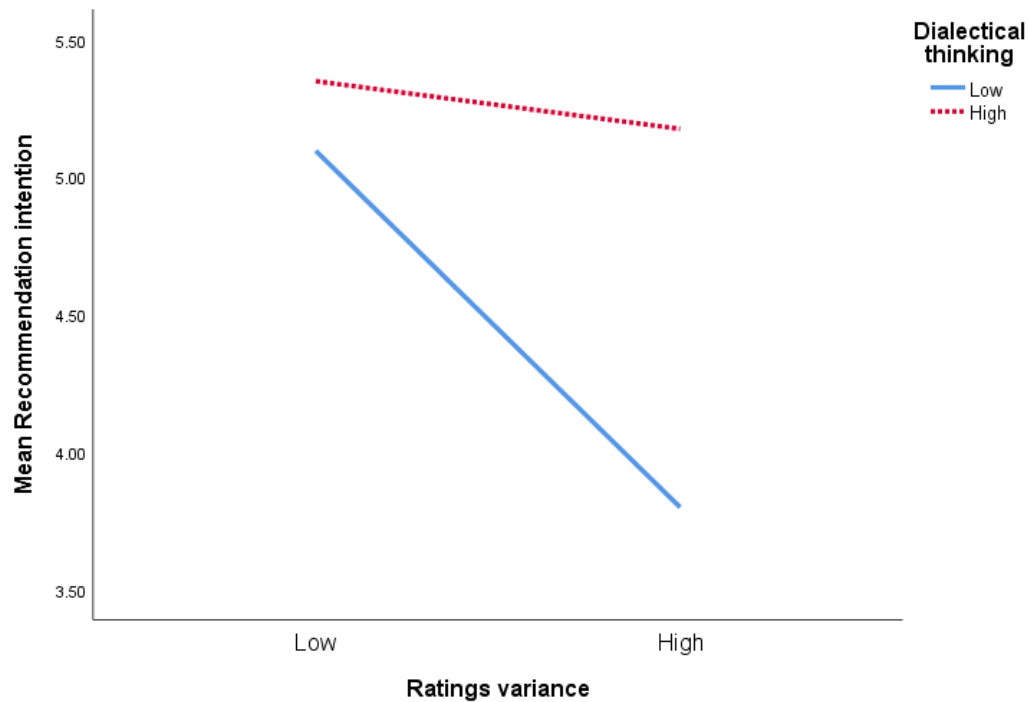


Figure 4.4. The moderating effect of dialecticism on recommendation intention

To test H3(b), we ran a moderation model with attitude confidence as the dependent variable (Figure 4.5). The moderation model was significant $R^2 = .1813$, $F(4, 162) = 8.9701$, $p < .001$. The detailed results are shown in Table 4.10.

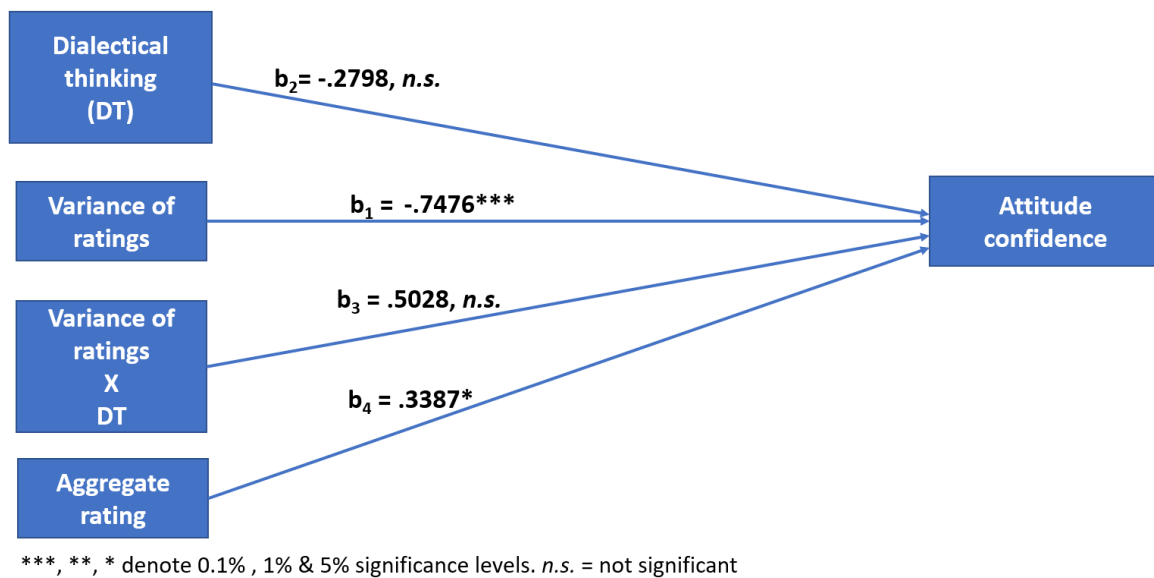


Figure 4.5. The moderation model for attitude confidence

Table 4.10. Model coefficients for the moderation model for attitude confidence.

$R^2 = .1813, MSE = .8267, F(4, 162) = 8.9701, p = .0000$						
	β	SE	t	p	LLCI	ULCI
Constant	6.0308	.3636	16.5884	.0000	5.3129	6.7488
Ratings variance	-.7476	.2085	-3.5860	.0004	-1.1592	-.3359
Dialectical thinking (DT)	-.2798	.4666	-.5996	.5496	-1.2012	.6416
Ratings variance x DT	.5028	.2899	1.7343	.0848	-.0697	1.0753
Aggregate rating	.3387	.1421	2.3841	.0183	.0582	.6192

The table above shows that the interaction Ratings variance X Dialectical thinking was nonsignificant at the conventional .05 level. However, the conditional effect of conflicting OCRs on attitude confidence was significant (Table 4.10) for low dialectical thinking. The interaction plot is shown in Figure 4.6. It shows that the negative effect of ratings variance on attitude confidence was more pronounced for low dialectical thinking participants. Thus, hypothesis H 3(b) was supported.

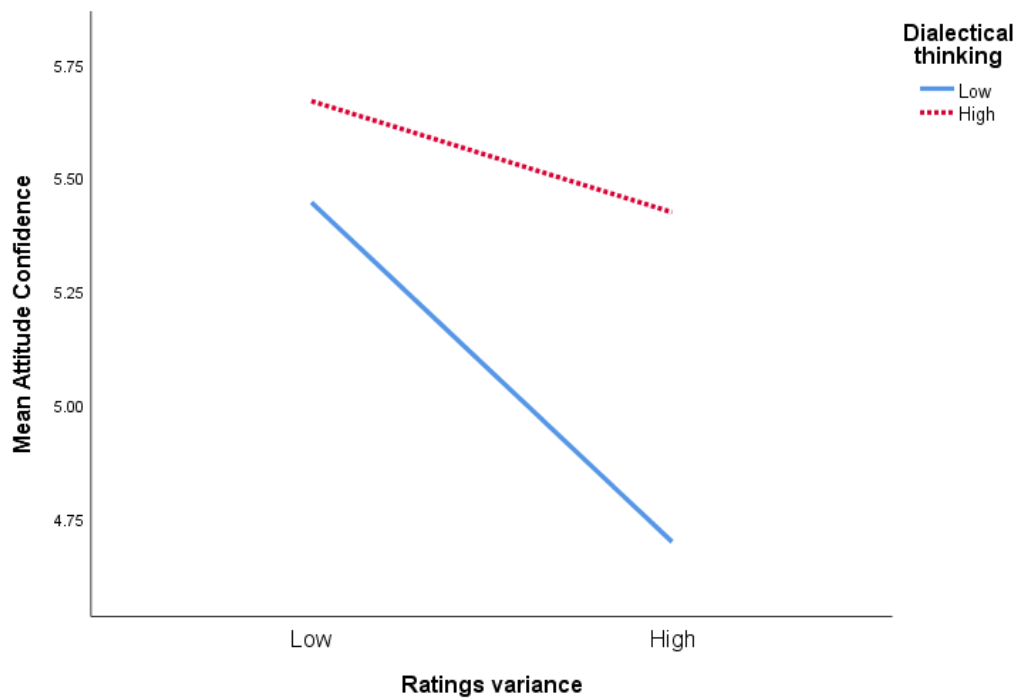


Figure 4.6: Moderating effect of dialectical thinking on attitude confidence

Table 4.11. Conditional effects of conflicting OCRs on attitude confidence for high and low dialectical thinking

High dialectical thinking					
Effect	se	t	p	LLCI	ULCI
-.2448	.2013	-1.2160	.2258	-.6423	.1527
Low dialectical thinking					
Effect	se	t	p	LLCI	ULCI
-.7476	.2085	-3.5860	.0004	-1.1592	-.3359

The non-significant main effect of Dialectical Thinking (DT) on recommendation intention and attitude confidence can be explained by the role of DT in our model. As a moderator, DT's primary function is to influence the way conflicting online reviews impact the dependent variables (recommendation intention and attitude confidence), rather than exerting a direct influence on these outcomes. In this regard, we did not hypothesize or expect a significant main effect of DT. The non-significant main effect of DT further supports the notion that DT's impact is context-dependent, primarily in the presence of conflicting information, rather than being a direct predictor of outcomes. We also note that regardless of whether the main effect of a moderator is hypothesized, when we include it in the statistical model, the analysis will automatically estimate a main effect path for the moderator, in addition to the interaction effect.

Conditional process analysis To test hypothesis H4, we performed a conditional process analysis. The MANOVA results showed an interaction between conflict and dialectical thinking; however, a conditional process analysis will also reveal whether the direct, indirect, or both effects of conflicting OCRs on recommendation intention are conditional on dialectical thinking levels. The PROCESS macro performs a conditional process analysis by estimating a conditional indirect effect and generating bootstrap confidence intervals for the indirect effect at different levels of the moderator (Palmer, Koenig-Lewis, & Asaad, 2016). Borau, El Akremi, Elgaaiied-Gambier, Hamdi-Kidar, & Ranchoux (2015) recommend using the PROCESS macro for conditional process analysis because of its

‘level of refinement’, ‘ease of use’, and frequent adoption in top marketing journals. PROCESS Model 8 allows for both the direct and the indirect effects to be conditional on the level of the moderator.

The model included ratings variance as the independent variable, dialectical thinking as the moderator, attitude confidence as the mediator, and recommendation intention as the dependent variable.

The unstandardized regression coefficients, their standard errors, the p values, and the model R -squared are shown in Table 4.11. The conditional direct and indirect effects are shown in Table 4.12.

Table 4.12. Model coefficients for the conditional process model.

	Consequent					
	Attitude confidence			Recommendation intention		
Antecedent	Coeff.	SE	p	Coeff.	SE	p
Ratings variance	-.7476	.2085	.0004	-1.0328	.3027	.0008
Attitude confidence	-	-	-	.3528	.1098	.0016
Dialectical thinking (DT)	-.2798	.4666	.5496	-.7703	.6528	.2397
Ratings variance x DT	.5028	.2899	.0848	.9454	.4089	.0220
Aggregate rating	.3387	.1421	.0183	.5791	.2020	.0047
Constant	6.0308	.3636	.0000	3.9297	.8346	.0000
	$R^2 = .1813$, $F(4, 162) = 8.9701$, $p = .0000$			$R^2 = .2540$, $F(5, 161) = 13.1700$, $p = .0000$		

Note: We report unstandardized regression coefficients. SE is Standard Error

Table 4.13. Conditional direct and indirect effects

	β	SE	t	p	LLCI	ULCI
Conditional Direct effects: Ratings variance → Recommendation intention						
Low DT	-1.0328	.3027	-3.4124	.0008	-1.6305	-.4351
High DT	-.0875	.2826	-.3095	.7574	-.6455	.4706
Conditional Indirect effects: Conflict → Attitude confidence → Recommendation intention						
	Effect	BootSE	BootLLCI	BootULCI		
Low DT	-.2637	.1183	-.5267	-.0637		
High DT	-.0864	.0685	-.2404	.0305		

To test hypothesis H4, we need evidence that the conditional indirect effects of conflicting OCRs on recommendation intention are different. The difference between conditional indirect effects is the index of moderated mediation (IMM) (Igartua & Hayes, 2021) which provides “the most direct test for evidence of a moderated mediation” (Abbu & Gopalakrishna, 2021, p. 859). As shown in Table 4.13, the 95% bootstrap confidence interval for the IMM contained zero. Hence, we conclude that the indirect effect of conflicting OCRs was not moderated by dialectical thinking. Thus, H4 was not supported at the 5% significance level. However, the 90% bootstrap confidence interval for the IMM did not contain zero.

Table 4.14. The index of moderated mediation.

	Index	BootSE	BootLLCI	BootULCI
95% Bootstrap CI	.1774	.1168	-.0131	.4406
90% Bootstrap CI	.1774	.1175	.0105	.3918

Table 4.15 below shows whether the hypotheses were supported.

Table 4.15. Hypothesis testing results

		Supported
H1 (a)	Conflicting OCRs decrease recommendation intention	Partially ¹
H1 (b)	Conflicting OCRs decrease attitude confidence	Partially ¹
H2	Attitude confidence mediates the effect of conflicting OCRs on recommendation intention.	Yes
H3 (a)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on recommendation intention will be smaller for the high-dialectical thinking condition.	Yes
H3 (b)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high-dialectical thinking condition.	Yes
H4	Dialectical thinking moderates the mediating effect of attitude confidence such that high dialectical thinking consumers generate higher attitude confidence	No

1. Supported only for low dialectical thinking

4.8 Discussion

Study 2 set out to examine the moderating effect of dialectical thinking on consumers' responses to conflicting OCRs and whether attitude confidence emerges as a mediator of the effect of conflicting OCRs on recommendation intention. The results lent support to both these predictions. The moderation hypotheses H3 (a) and H3 (b) were also supported. Attitude confidence emerged as a mediator (H3 was supported), but the moderation of the indirect effect (H4) was not supported.

One common use of OCRs by experienced online shoppers is to decide whether they would recommend purchasing a product to someone. As such, we used recommendation intention as a realistic dependent variable; it aligned with the scenario

used in the experiment. In a subsequent study, we used product evaluation which encompasses purchase intention, quality assessments, and attitude (Schroll et al., 2018).

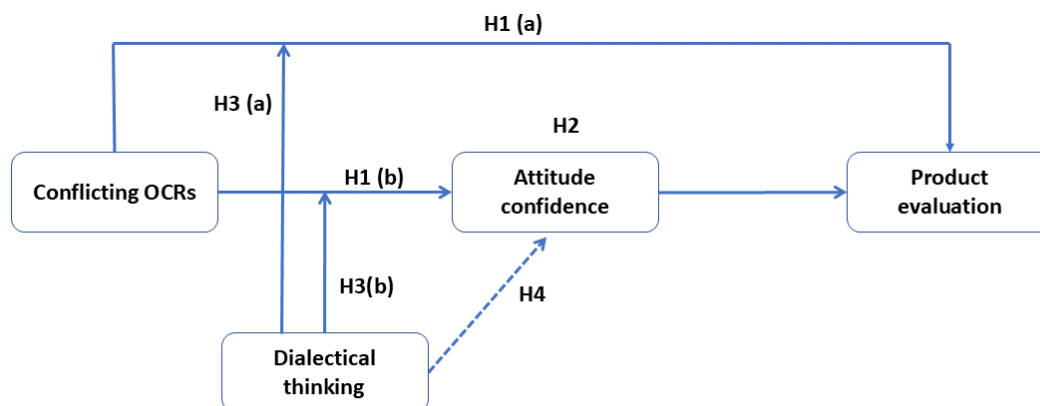
To examine the generalizability of these effects, another study was conducted using a search product (earphones). Conflicting information in OCRs can arise in various ways, and Study 2 used just one operationalization of conflict. Therefore, Study 2 used a different operationalization of conflict. To examine the robustness of the moderating effect of dialectical thinking, we used a different dependent measure in Study 3. Specifically, Study 3 used a multi-item dependent measure of product evaluation which captures the attitude, quality perceptions, and purchase intentions.

Study III: The moderating role of dialectical thinking (search product)

5.1 Overview

Study III had three objectives: (1) to generalize the results of Study II to a different product category (earphones), (2) to use a different operationalization of conflicting OCRs, (3) to use a different, multi-item measure of consumer response to conflicting OCRs. As in Study II, we expected that the negative effects of conflicting information in OCRs would generalize to a search product (earphones) and lead to less favorable consumer responses. We also expected that the moderating effect of dialecticism would generalize to earphones and that attitude confidence would mediate these effects. The level of conflict in OCRs was manipulated by varying the ratio of positive and negative reviews (Appendix B1).

Figure 5.1 depicts the conceptual model for this experiment, and the hypotheses are listed in Table 5.1.



The dashed line depicts a moderated mediation

Figure 5.1. Conceptual Model of Study III

Table 5.1. Hypotheses of Study III

H1 (a)	Conflicting OCRs decrease product evaluation.
H1 (b)	Conflicting OCRs decrease attitude confidence.
H2	Attitude confidence mediates the effect of conflicting OCRs on product evaluation.
H3 (a)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on product evaluation will be smaller for the high-dialectical thinking condition.
H3 (b)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high-dialectical thinking condition.
H4	Dialectical thinking moderates the mediating effect of attitude confidence, such that consumers with high dialectical thinking generate higher attitude confidence.

5.2 Product selection

We selected wireless earphones, a search product, to meet the experiment's objectives. Consumers process OCRs of search products differently than experience products (Luan et al., 2016; Jiménez et al., 2013; Bae & Lee, 2011). Prior research on search versus experience products (e.g., Maslowska et al., 2020; Hassanein et al., 2005) has used earphones as a stimulus because of its high score amongst search products. Moreover, wireless earphones are highly popular among youngsters and students, and their market in India grew by 168% year-on-year in 2022 (Jain, 2022).

A search product was selected because we wanted to test whether the effects obtained in Study 1 generalize to a different product category. Such variation is important for conceptual replications of experimental studies. Moreover, OCRs are processed differently for search versus experience products.

5.3 Stimulus development

Study II used ratings as the stimulus. Ratings — one of the “quantitative surrogates” of online consumer reviews — are informative, but the detailed information and the affective content in the OCR text are crucial in driving behavior (Ludwig et al., 2013). Also, for search products, consumers pay more attention to attribute-based OCRs (Luan et al., 2016). Therefore, in this study (Study III), we used review text containing attribute information as the stimulus. The high-conflict condition contained two positive and two negative reviews, whereas the low-conflict condition had three positive and two negative reviews. The presentation of reviews in each condition was randomized to rule out any order effects. Prior literature (e.g., Lim & Lee, 2019; Hwang et al., 2018) has also used two positive and two negative reviews to create the high-conflict or mixed condition. The positive and the negative reviews had a four-star and a one-star rating, respectively. Following Quaschnig et al. (2015), we replaced the adjectives in the positive reviews with negative ones to create negative reviews. The top three product attributes for earphones (battery, sound quality, and fit), curated by Amazon based on the OCRs on Amazon.in were selected and mentioned in the stimulus. The product was named Wireless Earphones to avoid any confounding effects of brand names.

The stimulus for priming dialectical thinking was the same as in Study II.

5.4 Experiment design and participants

Study II was a 2 (level of conflict: high vs. low) X 2 (dialectical thinking: high vs. low) between-subjects experimental design. Eighty-five undergraduate

students participated in the online experiment and received INR 100 as compensation. The demographic data of the participants is shown in Table 5.2.

Table 5.2. Demographic data of participants

		Frequency	Percentage
<u>Age (years)</u>	16-21	78	91.76%
	22-27	7	8.97%
	28-33	0	0.00%
	34-39	0	0.00%
<u>Gender</u>	Male	67	78.82%
	Female	18	26.87%
<u>Online Shopping Expenditure (INR)</u>	< 25,000	70	82.35%
	25,000-50,000	11	12.94%
	50,000-75,000	0	0.00%
	75,000-100,000	0	0.00%
	> 100,000	4	4.71%

5.5 Procedure

Participants first read the instructions and affirmed their informed consent to participate in the experiment. We followed the independent studies paradigm, in which participants are made to believe they are participating in unrelated studies (Geuens & Pelsmacker, 2017). Participants read that they were to participate in two short experiments — a “psychology study” and an “online reviews study.” The first “study” was the

dialectical priming exercise. Then, the task was followed by reading the description of the wireless earphones and viewing the earphones pictures and their online reviews. Participants were randomly assigned to one of the two experimental conditions. They first completed the dialecticism priming exercise. After processing the earphones stimulus, the dependent variables were measured. Thereafter, manipulation checks and demographic questions followed.

5.6 Dependent measures

The dependent measures, the measurement scales, the scale reliabilities, and the sources of the scale are reported in Table 5.3 below. All items were measured on a seven-point scale.

Table 5.3. Scale items, reliabilities, and source

Dependent measure	Item(s)	Cronbach's α	Source
Product evaluation	“Please evaluate the earphones on the following dimensions: dislike/like, bad/good, unappealing/appealing, unfavorable/favorable, and low quality/high quality” and “How likely would you be to buy this pair of earphones?” (“very unlikely/ very likely”).	$\alpha = .907$	(Schroll et al., 2018)
Attitude confidence	1. How confident are you in predicting [your attitude toward the houseboat] 2. How certain are you of [...] 3. How well can you predict [...]	$\alpha = .824$	Moore (2105)

5.7 Results

5.7.1 Manipulation check

An independent-samples *t*-test was conducted to test whether participants in the two experimental conditions perceived the reviews' consistency and valence as expected.

Participants in the high-conflict condition perceived the reviews as less consistent than the participants in the low-conflict condition ($M_{HC} = 2.10$, $M_{LC} = 5.36$; $t(83) = 12.126$, $p < .001$). The participants also responded to the question “What was the overall impression of consumer reviews?” on a seven-point scale with 1 = mostly positive and 7 = mostly negative. The mean of the response of the participants in the high-conflict condition was closer to the midpoint of the scale than those in the low-conflict condition ($M_{LC} = 3.95$, $M_{HC} = 5.02$; $t(83) = -3.011$, $p < .001$). As expected, participants in the high-conflict condition found the OCRs neither positive nor negative whereas participants in the low-conflict condition perceived the OCRs as slightly negative.

5.7.2 Hypotheses tests.

A multivariate analysis of variance (MANOVA) with OCR conflict and dialectical thinking as between-subjects factors was performed on product evaluation and attitude confidence. The MANOVA tested whether participants in the experimental conditions responded differently in terms of the dependent measures. Box's *M* test examined the assumption of the equality of the variance-covariance matrices. The test results confirmed the assumption (Box's $M = 14.434$, $p = .130$). The results of the MANOVA revealed a significant main effect for conflict (Pillai's Trace = .663, $F[2, 80] = 78.722$, $p < .001$) and dialectical thinking (Pillai's Trace = .553, $F[2, 80] = 49.545$, $p < .001$). The interaction between conflict and dialectical thinking was also significant (Pillai's Trace = .241, $F[2, 80] = 12.693$, $p < .001$). Participants in the high conflict condition reported lower product evaluation and attitude confidence. The cell means, and standard deviations of the dependent variables are presented in Table 5.4.

Table 5.4. The means and standard deviations of the dependent variables

		Product evaluation	Attitude confidence
Dialectical thinking	Low	4.870 (1.279)	5.075 (.7060)
	High	5.500 (.5913)	5.674 (.5099)
Conflict	Low	5.928 (.4719)	5.530 (.5810)
	High	4.426 (.8684)	5.243 (.7454)

Univariate Analyses

Before proceeding with univariate analyses, we tested the homogeneity of variance assumption. Levene's tests for all the dependent variables were nonsignificant (all $ps > .05$). Univariate ANOVAs revealed that conflict significantly affected product evaluation and attitude confidence. Dialectical thinking and the interaction (OCR conflict x dialectical thinking) significantly affected product evaluation and attitude confidence. The F s and the significance levels are shown in Table 5.5.

Table 5.5. Results of Univariate ANOVAs

	Product evaluation	Attitude confidence
Dialectical thinking	83.446**	25.991**
Conflict	157.850**	6.956*
Dialectical thinking x conflict	16.309**	12.214*

Note: F -values are presented in the table. * $p < 0.05$. ** $p < 0.01$. ns = not significant, $p > 0.05$.

Simple effects analysis

Since the interaction of conflicting OCRs and dialectical thinking was significant, interpreting the main effects could be misleading. So, we conducted a simple effects analysis to compare high- and low-conflict OCRs for both high and low dialectical thinking conditions.

The Least Significant Difference- adjusted comparisons across high and low dialectical conditions showed that participants in the low-dialectical thinking condition evaluated the earphones 1.703 points lower when reading high versus low-conflict OCRs ($p < .001$, 95% *CI* of the difference = 1.406 to 2.000). Participants in the high-dialectical thinking condition evaluated the earphones .875 points lower when reading high versus low-conflict OCRs ($p < .001$, 95% *CI* of the difference = .595 to 1.154). Similar differences were obtained for attitude confidence, except that the mean difference in attitude confidence was not significant for the high-dialectical thinking condition. The results of the simple-effects analysis are presented in Tables 5.6 and 5.7.

Table 5.6. Mean differences between high and low-conflict conditions

Dependent variable	Dialectical thinking	Mean difference (low vs. high conflict)	<i>p</i>	95% Confidence interval for difference	
				Lower Bound	Upper Bound
Product evaluation H1(a)	High	.875	<.001	.595	1.154
	Low	1.703	<.001	1.406	2.000
Attitude confidence H1(b)	High	.104	.534	-.227	.435
	Low	.744	<.001	.393	1.096

Table 5.7. Tests of simple effects

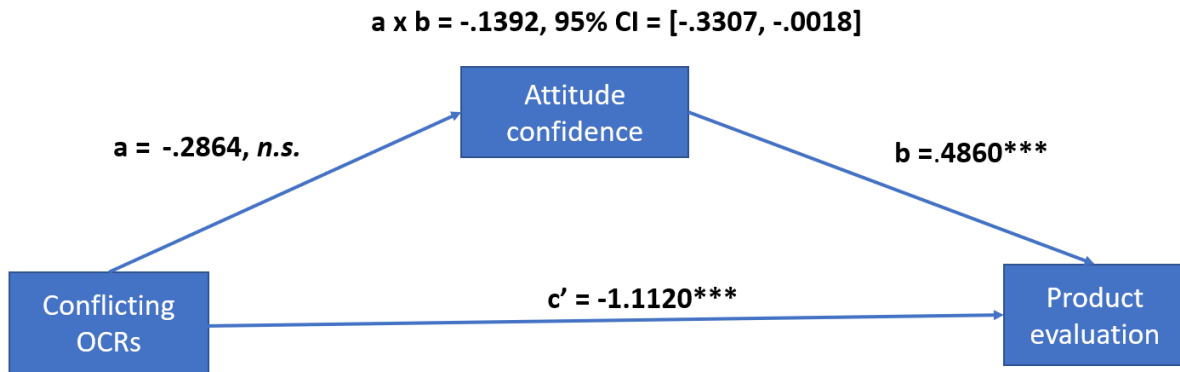
Dependent variable	Dialectical thinking	<i>F</i>	<i>p</i>	Effect size (partial η^2)
Product evaluation H1(a)	High	38.654	<.001	.323
	Low	130.039	<.001	.616
Attitude confidence H1(b)	High	.391	.534	.005
	Low	17.740	<.001	.180

In support of hypothesis H1(a), the results showed that the participants evaluated the earphones lower in the high-conflict condition than in the low-conflict condition. Hypothesis H1(b) was partially supported because the difference, across high and low-conflict, in attitude confidence was significant for low dialectical thinking; however, the effect was small and not significant when dialectical thinking was high.

Simple effects analyses show that the expected negative effect of Conflicting OCRs on attitude confidence is significant only for the low DT condition. Thus, while the negative effects align with the hypothesized direction, they are present only under certain conditions (low DT). This interaction effect, highlighted through the simple effects analyses, accounts for the partial support of the hypotheses.

Mediating effect of attitude confidence

Hypothesis 2 is tested with a simple mediation model; the model included conflicting OCRs as the independent variable, attitude confidence as the mediator, and product evaluation as the dependent variable.



***, **, * denote 0.1% , 1% & 5% significance levels. *n.s.* = not significant

Figure 5.2 shows the model coefficients and the significance levels. The detailed results are shown in Table 5.8 and Table 5.9.

Table 5.8. The model coefficients of the simple mediation model

	Consequent					
	Attitude confidence			Product evaluation		
Antecedent	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>
Conflicting OCRs	-.2864	.1444	.0507	-1.1120	.1365	.0000
Attitude confidence	—	—	—	.4860	.1014	.0000
Constant	5.5303	.1003	.0000	2.9905	.5682	.0000
	$R^2 = .0452$, $F(1, 83) = 3.9325$, $p = .0001$			$R^2 = .5751$, $F(2, 82) = 55.4930$, $p = .0507$		

Table 5.9. The direct and indirect effects

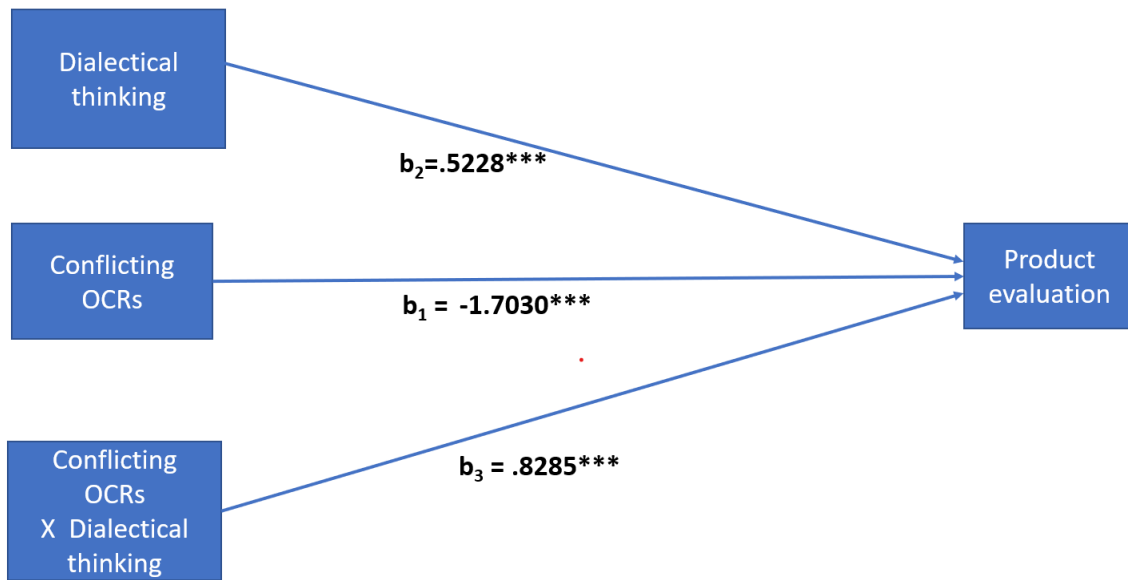
Direct effect of conflicting OCRs on product evaluation			
	Effect	SE	p
	-1.1120	.1365	.0000
Indirect effect of conflicting OCRs on product evaluation			
Effect	BootSE	BootLLCI	BootULCI
-.1392	.0839	-.3307	-.0018

The results show that participants viewing high-conflict (versus low-conflict) OCRs reported -0.1392 units lower product evaluation due to their lower attitude confidence ($a = -.2864$). This mediating effect is statistically significant because the 95% bootstrap confidence interval was entirely below zero $[-.3307, -.0018]$. Thus, H2 was supported.

The direct effect of conflicting OCRs ($c' = -1.1120$) is negative, which means that participants viewing high-conflict OCRs but having the same attitude confidence as someone viewing low-conflict OCRs reported 1.1120 units lower product evaluation. This direct effect is significant; 95% CI = $[-1.3836, -.8405]$.

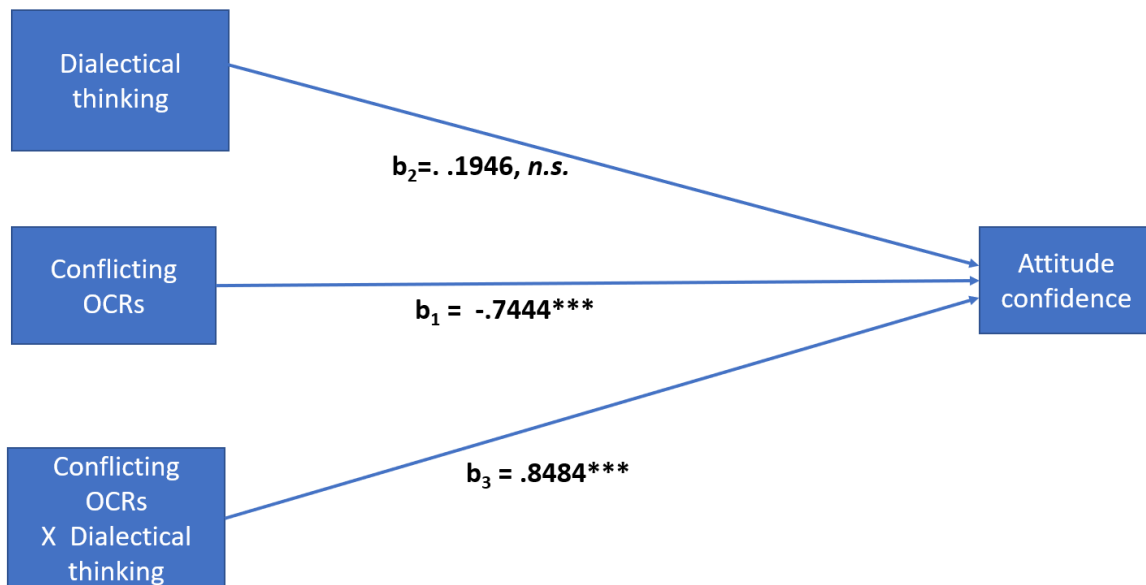
Moderating effect of dialectical thinking

To test the moderation hypotheses H3a and H3b, we used Model 1 in the PROCESS Macro for SPSS. The moderation models for product evaluation and attitude confidence are shown in Figures 5.3 and 5.4.



***, **, * denote 0.1% , 1% & 5% significance levels. *n.s.* = not significant

Figure 5.3. The moderation model for product evaluation



***, **, * denote 0.1% , 1% & 5% significance levels. *n.s.* = not significant

Figure 5.4. The moderation model for attitude confidence

The moderation models for both product evaluation ($R^2 = .2448$, $F(4, 162) = 13.1257$, $p < .001$) and attitude confidence ($R^2 = .2448$, $F(4, 162) = 13.1257$, $p < .001$) were significant. Detailed results are shown in Tables 5.10 and 5.11. The conditional effects of conflicting OCRs on product evaluation and attitude confidence are shown in Table 5.12.

Table 5.10. Model coefficients for product evaluation

$R^2 = .7527$ $MSE = .2225$, $F(3, 81) = 82.1699$, $p = .0000$						
	β	SE	t	p	LLCI	ULCI
Constant	5.4048	.1029	52.5109	.0000	5.2000	5.6096
Conflicting OCRs	-1.7030	.1493	-11.4034	.0000	-2.0002	-1.4059
Dialectical thinking (DT)	.5228	.1424	3.6722	.0004	.2395	.8060
Conflicting OCRs x DT	.8285	.2052	4.0385	.0001	.4203	1.2367

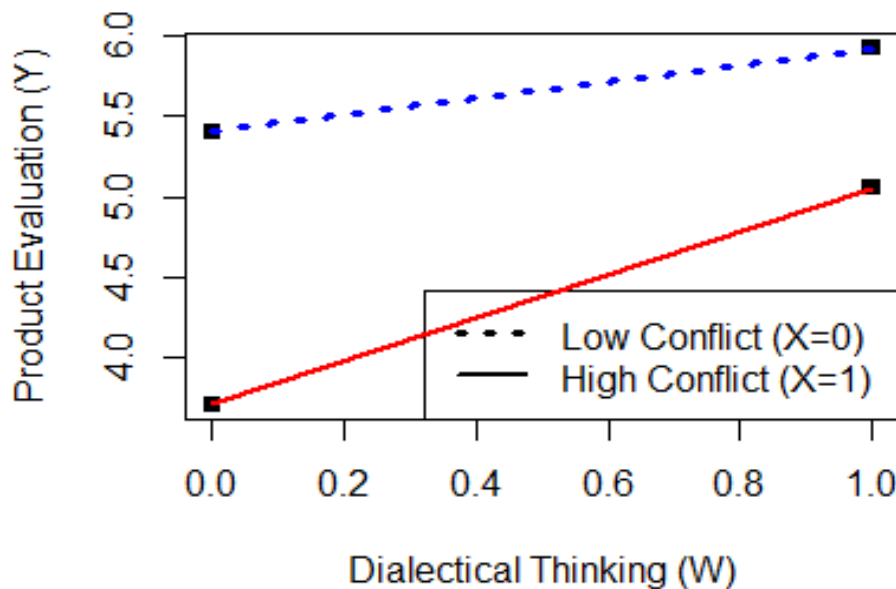
Table 5.11. Model coefficients for attitude confidence

$R^2 = .3443$ $MSE = .3115$, $F(3, 81) = 14.1754$, $p = .0000$						
	β	SE	t	p	LLCI	ULCI
Constant	5.4286	.1218	44.5694	.0000	5.1862	5.6709
Conflicting OCRs	-.7444	.1767	-4.2119	.0001	-1.0960	-.3927
Dialectical thinking (DT)	.1946	.1685	1.1552	.2514	-.1406	.5298
Conflicting OCRs x DT	.8484	.2428	3.4948	.0008	.3654	1.3315

Table 5.12. Conditional effects of conflicting OCRs for low and high dialectical thinking

	Effect	se	t	p	LLCI	ULCI
Product evaluation						
Low Dialectical Thinking	-1.7030	.1493	-11.403	.0000	-2.0002	-1.4059
High Dialectical Thinking	-.8745	.1407	-6.2172	.0000	-1.1544	-.5946
Attitude confidence						
Low Dialectical Thinking	-.7444	.1767	-4.2119	.0001	-1.0960	-.3927
High Dialectical Thinking	.1041	.1665	.6253	.5335	-.2271	.4353

The results show that the conditional effect of conflicting OCRs on product evaluation was significant for both high-, as well as low-dialectical thinking. The negative effect of conflicting OCRs on product evaluation and attitude confidence was stronger for participants primed with low dialectical thinking than those primed with high dialectical thinking. Hence, the moderation effects were significant and H3a and H3b were supported. Figures 5.5 and 5.6 show the mean product evaluation and attitude confidence for low and high dialectical thinking; the blue and red lines correspond to the low and high-conflict OCRs, respectively.

**Figure 5.5. The moderation effect of dialectical thinking on product evaluation**

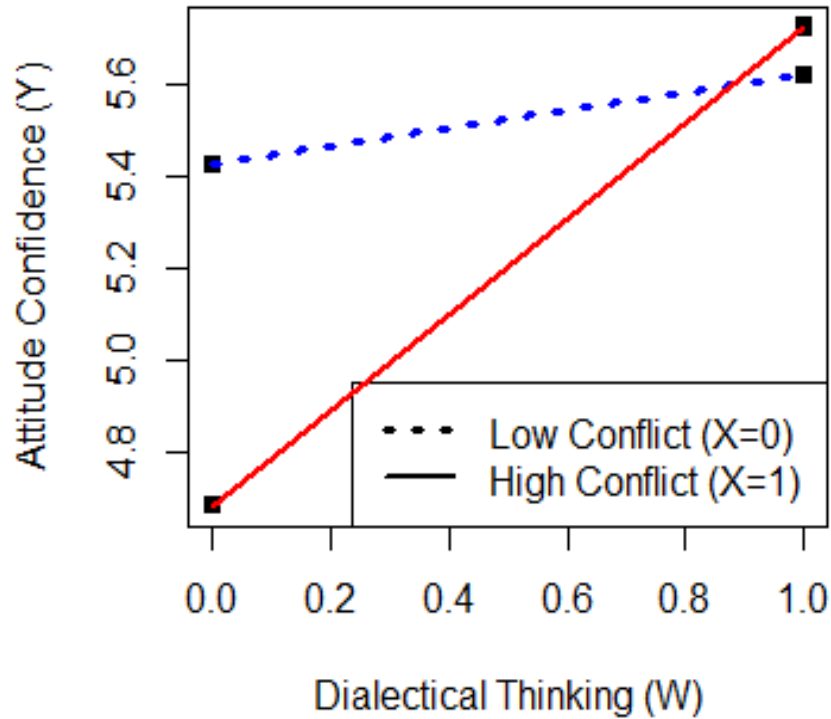


Figure 5.6. The moderation effect of dialectical thinking on attitude confidence

Conditional Process Analysis

According to H4, the mechanism (attitude confidence) through which the effect of conflicting OCRs is transmitted to product evaluation is conditional on the level of dialectical thinking. Therefore, we conducted a conditional process analysis combining moderation and mediation. As in the previous study, we estimated Model 8 in PROCESS Macro with conflicting OCRs as the independent variable, attitude confidence as the mediator, and product evaluation as the dependent variable. Model 8 allows for the moderation of both the indirect and the direct effects. In such a case, the indirect effect is not moderated; the 95% confidence interval for the index of moderated mediation contained zero. Therefore, we ran Model 7, which allows only the indirect effect to be moderated. The model coefficients and the significance levels are shown in Figure 5.7. Detailed results are shown in Table 5.13.

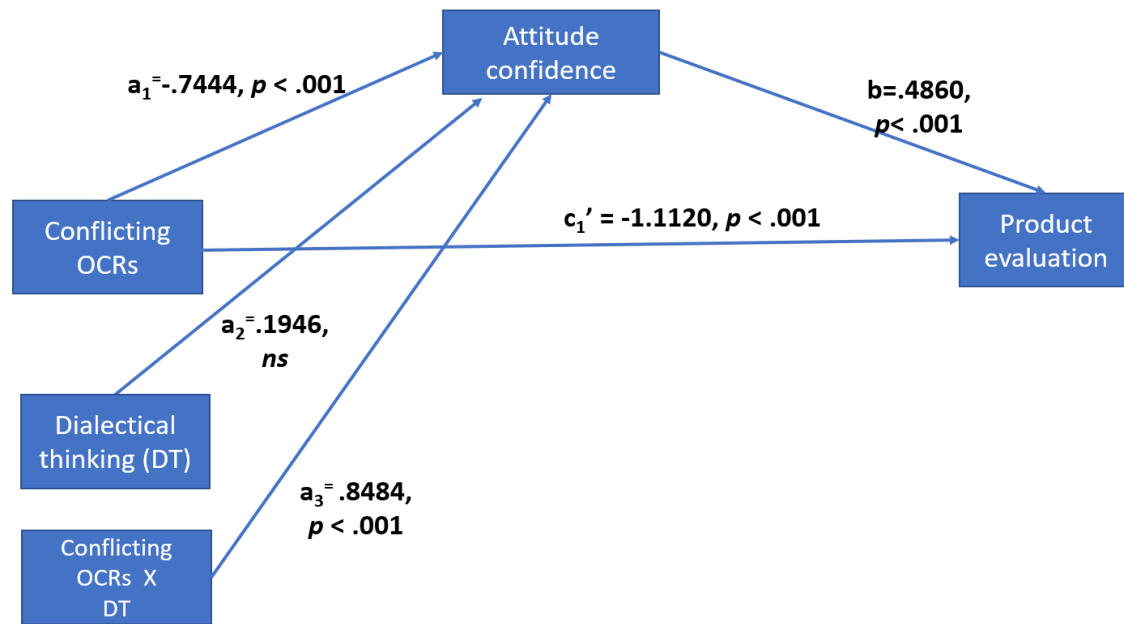


Figure 5.7. Model coefficients of the estimated model

Table 5.13. Model coefficients for the conditional process model.

	β	SE	t	p	LLCI	ULCI
Dependent variable = Attitude confidence						
Constant	5.4286	.1218	44.569	.0000	5.1862	5.6709
Conflict (C)	-.7444	.1767	-4.2119	.0001	-1.0960	-.3927
Dialectical thinking (DT)	.1946	.1685	1.1552	.2514	-.1406	.5298
C x DT	.8484	.2428	3.4948	.0008	.3654	1.3315
	$R^2 = .3443$ $MSE = .2225$, $F = 82.1699$ $p = .0000$					
Dependent variable = Product evaluation						
Constant	2.9905	.5682	5.2632	.0000	1.8602	4.1209
Conflict (C)	-1.1120	.1365	-8.1467	.0000	-1.3836	-.8405
Attitude confidence	.4860	.1014	4.7940	.0000	.2843	.6876
	$R^2 = .5751$ $MSE = .3775$ $F = 55.4930$ $p = .0000$					

Direct effect: Conflict → Product evaluation							
	-1.1120	.1365	-8.1467	.0000	- 1.3836	-.8405	
Indirect effect: Conflict → Attitude confidence → Product evaluation							
	Effect		BootSE		BootLLCI		BootULCI
Low DT	-.3617		.1315		-.6476		-.1416
High DT	.0506		.0728		-.0961		.1935
Index of moderated mediation							
	Index = .4123		.1489		.1545		.7235

The difference between the indirect effect at the high and the low levels of the moderator ($.0506 + .3617 = .4123$) is the index of moderated mediation (IMM). The bias-corrected 95 % bootstrap confidence interval for the IMM, based on 5000 bootstrap samples [.1545, .7235], did not contain zero. Therefore, the index of moderated mediation was statistically different from zero. This result supports the hypothesis (H4) that the indirect effect of conflicting OCRs on product evaluation via attitude confidence is moderated by dialectical thinking.

Table 5.14 below shows whether the hypotheses were supported.

Table 5.14. Hypothesis testing results, Study III

		Supported
H1 (a)	Conflicting OCRs decrease product evaluation.	Yes
H1 (b)	Conflicting OCRs decrease attitude confidence.	Partially ¹
H2	Attitude confidence mediates the effect of conflicting OCRs on product evaluation.	Yes

H3 (a)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on product evaluation will be smaller for the high-dialectical thinking condition.	Yes
H3 (b)	Dialectical thinking moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high-dialectical thinking condition.	Yes
H4	Dialectical thinking moderates the mediating effect of attitude confidence, such that consumers with high dialectical thinking generate higher attitude confidence.	Yes

1.Only for low dialectical thinking

5.8 Discussion

The main purpose of this study was a conceptual replication of Study I. The results of Study II reproduced the effects hypothesized and supported in Study I. The results of the previous experiment were obtained for an experience product and a different operationalization of conflict information in OCRs. The previous experiment manipulated the variance of ratings in the presence of the aggregate rating. For a search product, this experiment varied the ratio of positive and negative reviews to manipulate the level of conflict in a set of reviews. The valence (positivity/ negativity) of the OCRs was evident in the text of the OCRs as well as the review ratings. The information-rich environment presented by OCR platforms warrants investigating different aspects of the information.

The results of the previous experiment supported the hypotheses and showed the conditional process through which conflicting OCRs impact consumers' product evaluations. We could replicate the results of the previous experiment, except that the direct effect of conflicting OCRs on product evaluation was not moderated by dialectical

thinking when the mediator (attitude confidence) was added to the model. This difference could be attributed to the different consumption domains to which houseboats and earphones belong. The mediating variable attitude confidence is a metacognitive appraisal of an attitude. The impact of metacognitive experiences on product evaluation has been found to differ between ‘special-occasion goods’ (e.g., staying in a houseboat) and ‘everyday goods’ (e.g., earphones) (Pocheptsova, Labroo, & Dhar, 2010).

Study 3 replicated the results of Study 2, except that the direct effect of conflicting OCRs on product evaluation was not moderated by dialectical thinking when the mediator (attitude confidence) was added to the model. This difference could be attributed to the different consumption domains to which houseboats and earphones belong. The model included a metacognitive variable as the mediator, and there is evidence that the effect of metacognition on product evaluation differs for different product types (Pocheptsova, Labroo, & Dhar, 2010).

Different product types also entail different information-processing types. For example, Maslowska, Segijn, Vakeel, & Viswanathan (2020) have shown that consumers pay more information to OCRs (versus product information) for experience (versus search) products.

Taken together, Study II and Study III confirmed the moderating role of dialectical thinking in Indian participants for both experience and search products. Indeed, different levels of dialectical thinking entail different processing outcomes for high- and low-conflict OCRs. Dialectical thinking served to mitigate the negative effects of conflicting OCR information on recommendation intention and product evaluation. The studies also revealed the mediating role of attitude confidence.

In this chapter, we find support for the moderating role of dialectical thinking in consumer responses to conflicting OCRs. This helps fill the research gap by providing an alternative explanation to why there are mixed findings in the prior literature. The existing literature has mostly mostly assumed that depending on the valence, variance and other

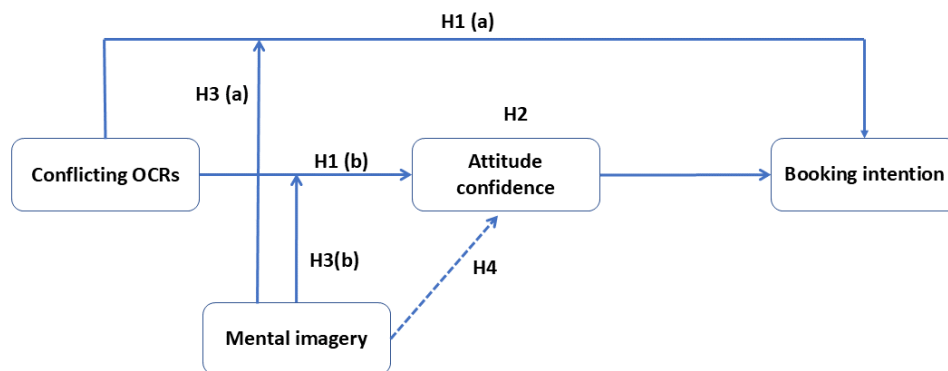
message characteristics, there would be a uniform response (e.g., high or low purchase intention) across consumers. However, this study establishes that consumers' responses will depend on their level of dialectical thinking. This is perhaps the first study to examine dialectical thinking as a mitigator of the negative effect of conflicting OCRs.

Dialectical thinking is not readily within the control of marketers because it varies across cultures and individuals within a culture. Therefore, in Study IV, we explored whether mental imagery — a variable controllable by marketers — could result in more positive consumer responses to conflicting OCRs.

Study IV: The moderating role of mental imagery

6.1 Overview

Study IV had three objectives: (1) To investigate the effect of conflicting OCRs using a different operationalization of conflict. (2) To test whether mental imagery moderates the impact of conflicting OCRs on attitude confidence and hotel booking intention (3) To test whether attitude confidence emerges as a mediator in the hotel context. We expected high-conflict OCRs would lead to less favorable consumer responses for a hotel also. Moreover, we expected that mental imagery would moderate the effects of conflicting OCRs and that attitude confidence would mediate these effects. The level of conflict in the OCRs was manipulated by altering the rating given by the focal OCR; the aggregate rating in both high- and low-conflict conditions was the same, viz. 4.5 stars. In the high-conflict condition, the rating given by all focal OCRs was three stars, whereas, in the low-conflict condition, it was 4.5 stars (Appendix A1). Following López-López & Parra (2016), we avoided extreme ratings (one or five stars) to keep the stimulus more realistic. To avoid any confounding effects of brand names, the hotel was named Aevum Hotel. Figure 6.1 shows the conceptual model of Study IV, and Table 6.1 lists the hypotheses.



The dashed line depicts a moderated mediation

Figure 6.1. Conceptual Model of Study IV

Table 6.1. Hypotheses of Study IV

H1 (a)	Conflicting OCRs decrease hotel booking intention
H1 (b)	Conflicting OCRs decrease attitude confidence
H2	Attitude confidence mediates the effect of conflicting OCRs on hotel booking intention.
H3 (a)	Mental imagery moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on hotel booking intention will be smaller for the high mental imagery condition.
H3 (b)	Mental imagery moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high-mental imagery condition.
H4	Mental imagery moderates the mediating effect of attitude confidence such that consumers in the high-mental imagery condition generate higher attitude confidence

6.2 Product selection

The product selection for this study focused on three main criteria: (1) OCRs should be important for the selected product, (2) photos should be crucial for making purchase decisions, and (3) participants should be familiar with online purchases of the product. Online hotel booking fulfills these three criteria. Book et al. (2018) found that OCRs have become more influential than prices for tourism purchase decisions. Consumers find OCRs accompanied by user-generated photos more helpful than those containing text alone (Li et al., 2023; Park et al., 2021), especially in the tourism sector (Hou & Pan, 2023). Moreover, images have become the predominant user-generated content (Zhan et al., 2024). Lastly, all prospective participants reported having booked a hotel online at least once in the past year.

6.3 Stimulus development

Conflicting OCRs

To enhance experimental realism, real reviews were obtained from TripAdvisor.com. The text font and the graphic design matched those of reviews on TripAdvisor.com. Participants first read a short description of a fictitious hotel in a real tourist location close to where the participants were located. We gave the hotel an imaginary name because brand familiarity may impact participants' perceptions of OCRs (Chatterjee, 2001; Chan, Lam, Chow, Fong, & Law, 2017). Before viewing the manipulated OCRs, all participants read the hotel description and viewed a hotel image ostensibly posted by the hotel on TripAdvisor.com.

We manipulated conflict in OCRs by introducing a mismatch between the aggregate rating and the review rating. This operationalization of conflicting OCRs has been used in the prior literature (e.g., Qiu, Pang, & Lim, 2012). In the low conflict condition, below the 4.5-star aggregate rating, a review with a 4.5-star rating was shown, whereas, in the high conflict condition, the same review with a 3-star rating was presented. On the subsequent screens, participants read two more reviews with star ratings either matching (in the low conflict condition) with or deviating (in the high conflict condition) from the aggregate rating. As shown in Appendix A2, in the low conflict condition, the aggregate rating and the rating of the first review were the same (4.5). The two subsequent reviews were within 0.5 stars of the aggregate rating. The wording of the reviews was the same except for slight modifications to reflect the review rating. For example, "best experience," was modified to "okay experience". Appendix A shows the stimuli for the two conditions.

Mental imagery

Mental imagery was manipulated by including three vivid images (Appendix A3) of the hotel and its surroundings in the high mental imagery condition. In the low imagery condition, these images were not shown. Inclusion versus exclusion of rich media has been used to manipulate constructs such as information quality (Zinko et al. (2020), website characteristics (Argyriou, 2012), visual cues (Nazlan et al., 2018), and vividness (Orús et al., 2017). Zinko et al. (2020) have shown that images lead to uncertainty reduction in OCRs. They found that the presence (versus absence) of images moderates the effect of OCR characteristics on purchase intention. Park, Sutherland, & Lee (2021) examined the interaction between OCR and images (presence versus absence). They found that reviews containing images were more effective.

6.4 Experiment design and participants

We conducted an online experiment with a 2 (conflict: high vs. low) x 2 (mental imagery: high vs. low) between-subjects factorial design. The participants were 114 undergraduates from a technical university in India who received INR 100 as compensation for their time and effort. Students were well suited for the study because the majority (95%) of the consumers who read OCRs are 18 to 34 years old; they are also a major online shopping and spending group (Wu, Tipgomut, Chung, & Chu, 2020). Undergraduates and graduates tend to be heavy Internet users and form an important market segment (Farias, 2017; Baek & Morimoto, 2012). The importance and size of this segment are evident from India's 'youth bulge.' 27.2% of India's population was 15-29 years old in 2021; this will drop to 22.7% by 2036 but would still be 345 million (Youth in India, 2022), which is more than the current (2023) population of the United States.

The participant's demographic data are shown in Table 6.2.

Table 6.2. Demographic data of participants

		Frequency	Percentage
Age (years)	16-21	55	48.25%
	22-27	56	49.12%
	28-33	3	2.63%
	34-39	0	0%
Gender	Male	83	72.8%
	Female	31	27.19%
Online Shopping Expenditure (INR)	< 25,000	37	32.46%
	25,000-50,000	66	57.89%
	50,000-75,000	7	6.14%
	75,000-100,000	2	1.75%
	> 100,000	2	1.75%

6.5 Procedure

Participants received an email containing a link to the online experiment. By following this link, they were randomly assigned to one of the four experimental conditions. First, the participants read the informed consent document and clicked an 'Agree' button to consent to participate. Next, they read the instructions and an online hotel booking scenario. Thereafter, they read the hotel description and viewed a hotel image. Then, they proceeded to read the OCRs. Participants in the high mental imagery condition viewed three additional images showing the hotel's interior, exterior, and surroundings. After processing the

stimulus material, participants responded to a questionnaire consisting of dependent measures, manipulation checks, and demographic items.

Images posted on TripAdvisor were used for the sake of stimulus realism. Mental imagery (high versus low) was manipulated in accordance with prior studies. To ensure that the images were effective in eliciting vivid mental representations, we conducted pretests with a separate set of participants ahead of the experiment.

6.6 Dependent measures

Booking intention. The focal dependent variable in this study was hotel booking intention after processing the experimental stimulus. We measured booking intention with a single item: “After reading the reviews about this hotel, if I were traveling to Manali¹, it is very likely that I would book a room at this hotel.” Similar item has been used in many studies, for example, by Chan et al. (2017), Sparks and Browning (2011), and Mauri and Minazzi (2013). The participants rated their agreement with the statement on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Attitude confidence. Three items ($\alpha = .818$) adapted from Moore (2015) measured attitude confidence:

How confident are you in predicting your attitude toward Hotel Aevum?

How certain are you of your attitude toward Hotel Aevum?

How well can you predict your attitude toward Hotel Aevum?

¹ Manali is a popular tourist destination in India which is familiar and easily accessible to the respondents because of its location proximity

6.7 Results

6.7.1. Pretest of mental imagery manipulation

An independent-samples *t*-test was conducted to test whether participants in the high and low mental imagery conditions perceived the stimuli as expected. Fifty-two university students were randomly assigned to the two experimental conditions. They rated the vividness of the hotel on 12 items ($\alpha = .814$) adapted from Orús et al. (2017) using a seven-point scale. Participants in the high mental imagery (HI) condition perceived the hotel as significantly more vivid than the participants in the low mental imagery (LI) condition ($M_{HI} = 4.39$, $M_{LI} = 3.40$; $t(50) = -4.105$, $p < .001$).

6.7.2. Manipulation checks

An independent-samples *t*-test was conducted to test whether participants in the two experimental conditions perceived the consistency and the valence of the reviews as expected.

Participants in the high-conflict condition perceived the reviews as less consistent than the participants in the low-conflict condition ($M_{HC} = 2.91$, $M_{LC} = 4.91$; $t(112) = 9.525$, $p < .001$). The participants also responded to the question “What was the overall impression of consumer reviews?” on a seven-point scale with 1= mostly positive and 7 = mostly negative. The mean of the response of the participants in the high-conflict condition was closer to the mid-point of the scale than those in the high-conflict condition ($M_{HC} = 4.09$, $M_{LC} = 2.86$; $t(112) = -4.557$, $p < .001$).

The success of the manipulation for high- versus low-conflict OCRs was checked by asking participants to respond to the following two items:

“The overall tone of the consumer reviews was:” anchored on not at all consistent (1) and highly consistent (7).

What was the overall impression of consumer reviews? anchored on mostly similar (1) and mostly dissimilar (7).

6.7.3. Hypotheses tests

A multivariate analysis of variance (MANOVA) was performed on booking intention and attitude confidence, with conflict and mental imagery as between-subjects factors. The MANOVA tested whether participants in different experimental conditions responded differently in terms of the dependent measures. The assumption of the equality of the variance-covariance matrices was examined with Box's M test. The results of the test confirmed the assumption (Box's M = 14.771, $p > .01$). For unequal sample sizes, if Box's M is significant at $p < .001$, then MANOVA's robustness is doubtful (Tabachnick et al., 2013). The results of the MANOVA revealed a significant main effect for conflicting OCRs (Pillai's Trace = .376, $F [2, 109] = 32.831$, $p < .001$) and mental imagery (Pillai's Trace = .509, $F [2, 109] = 56.495$, $p < .001$). The interaction between conflicting OCRs and mental imagery was also significant (Pillai's Trace = .097, $F [3, 108] = 5.833$, $p < .01$). Participants in the high-conflict condition reported lower booking intention and attitude confidence. The cell means and standard deviations of the dependent variables are presented in Table 6.3.

Table 6.3. Means and standard deviations of the dependent variables

		Booking intention	Attitude confidence
Conflict	Imagery	Mean (SD)	Mean (SD)
Low	Low	4.02 (0.98)	4.27(1.51)
	High	5.39 (1.12)	4.88 (1.34)
High	Low	2.04 (0.81)	2.56 (0.89)
	High	4.52 (0.91)	4.36 (1.02)

Univariate Analyses

Levene's test showed that the assumption of homogeneity of variance was met for the two dependent variables (all $ps > .05$). Univariate ANOVAs revealed that conflicting OCRs had significant effects on booking intention and attitude confidence. Mental imagery had significant effects on booking intention and attitude confidence. The interaction term (conflicting OCRs x mental imagery) had significant effects on booking intention and attitude confidence. The F s and the significance levels are shown in Table 6.4.

Table 6.4. Results of Univariate ANOVAs

	Booking intention	Attitude confidence
Conflict	62.50***	22.71***
Mental imagery	112.41***	26.60***
Conflict x Mental imagery	9.50**	6.52**

Note: F -values are presented in the table. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ ns= not significant, $p > 0.05$.

Simple effects analysis

Follow-up simple effects tests showed that, as predicted by Hypothesis 1(a), the booking intention was lower in the high-conflict condition, both when imagery was high ($F(1, 110) = 10.710, p < .01, \eta^2 = .089$) and low ($F(1, 110) = 66.066, p < .001, \eta^2 = .375$). Attitude confidence was lower in the high-conflict condition when mental imagery was high, but the mean difference (.516 points) was not significant ($F(1, 110) = 2.252, p > .05, \eta^2 = .020$). The mean difference (1.708 points) was significant in the low mental imagery condition ($F(1, 110) = 2.252, p > .05, \eta^2 = .030$). Therefore, we conclude that H1(b) was supported only in the low mental imagery condition. The mean differences in booking intention and attitude confidence based on estimated marginal means are shown in Table 6.5.

Table 6.5. Mean differences between low- and high-conflict OCRs for low and high mental imagery

	Mean difference	<i>SE</i>	<i>p</i>
Low mental imagery			
Booking intention	1.992	.245	.000
Attitude confidence	1.708	.316	.000
High mental imagery			
Booking intention	.874	.267	.001
Attitude confidence	.516	.344	.136

Mediation Analysis

To test Hypothesis H2, we used the PROCESS Macro for SPSS and ran Model 4 (Hayes, 2017). We entered conflicting OCRs, attitude confidence, and booking intention as the antecedent, mediating, and consequent variables, respectively. In support of Hypothesis 2, the results revealed that attitude confidence mediates the relationship between conflicting OCRs and hotel booking intention ($\beta = -.5737$, BootSE = .1638, 95% bootstrap CI [-.9128, -.2688]). The detailed results of the mediation model are shown in Table 6.6.

Table 6.6. Results of mediation analysis

	β	SE	t	p	LLCI	ULCI
Dependent variable = Attitude confidence						
Constant	4.5172	.1829	24.6942	.0000	4.1548	4.8797
Conflict	-1.0172	.2610	-3.8975	.0002	-1.5344	-.5001
	$R^2 = .3456$ $MSE = 1.9408$, $F = 15.1906$ $p = .0002$					
Dependent variable = Booking intention						
Constant	2.0212	.3787	5.3368	.0000	1.2707	2.7717

Conflict	-.6738	.2268	-2.9705	.0036	-1.1233	-.2243
Attitude confidence	.5640	.0771	7.3186	.0000	.4113	.7167
$R^2 = .6648$ $MSE = 1.2909$ $F = 43.9557$ $p = .0000$						
Direct effect: Conflict → Booking intention						
	-.6738	.2268	-2.9705	.0036	-1.1233	-.2243
Indirect effect: Conflict → Attitude confidence → Booking intention						
	Effect	BootSE	BootLLCI	BootULCI		
Attitude confidence	-.5737	.1638	-.9128	-.2688		

A bias-corrected, 95% confidence interval based on 5,000 bootstrap samples revealed that the conflicting OCRs had an indirect effect ($a_1 \times b$; Fig. 6.2) on booking intention through the proposed mediator, attitude confidence ($a_1 \times b = -.5737$, BootSE = .1659, 95% bootstrap CI [-.9022, -.2594]). This finding supports the hypothesized process (H2) by which the effect of conflicting OCRs is transmitted to booking intention. That is, attitude confidence mediates the relationship between conflicting OCRs and booking intention.

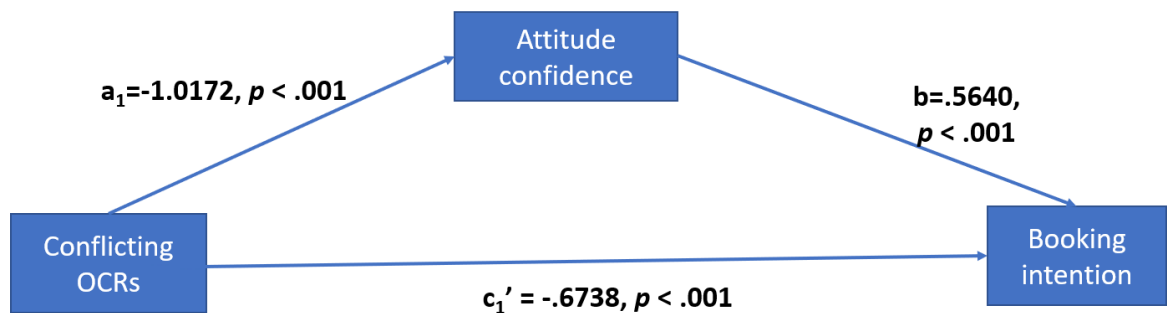


Figure 6.2. Model coefficients and significance levels of the mediation model

Moderating effect of mental imagery

To test the moderation hypotheses H3a and H3b, we used Model 1 in the PROCESS Macro for SPSS. The moderation models for booking intention and attitude confidence are shown in Figures 6.3 and 6.4.

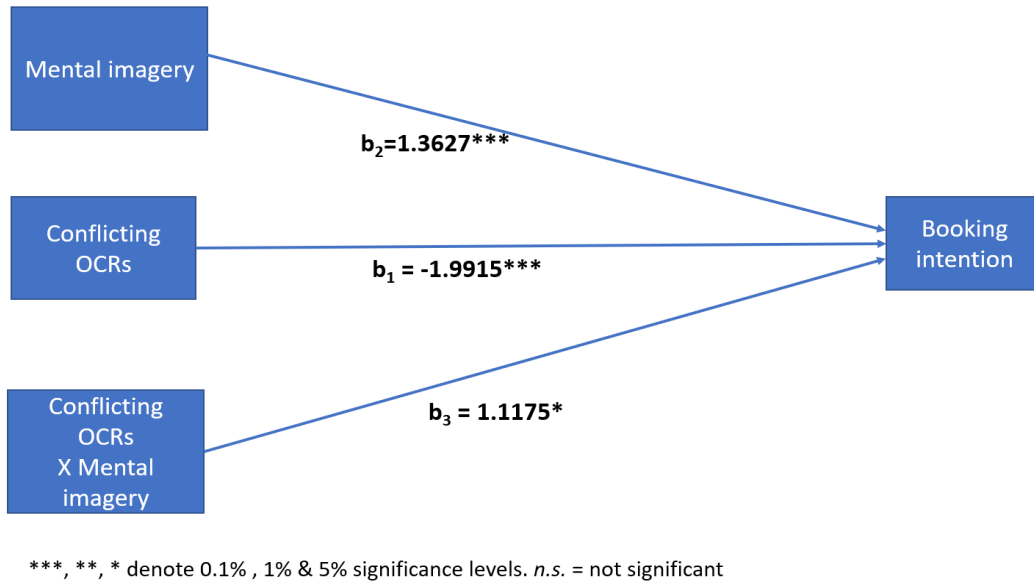


Figure 6.3. The moderation model for booking intention

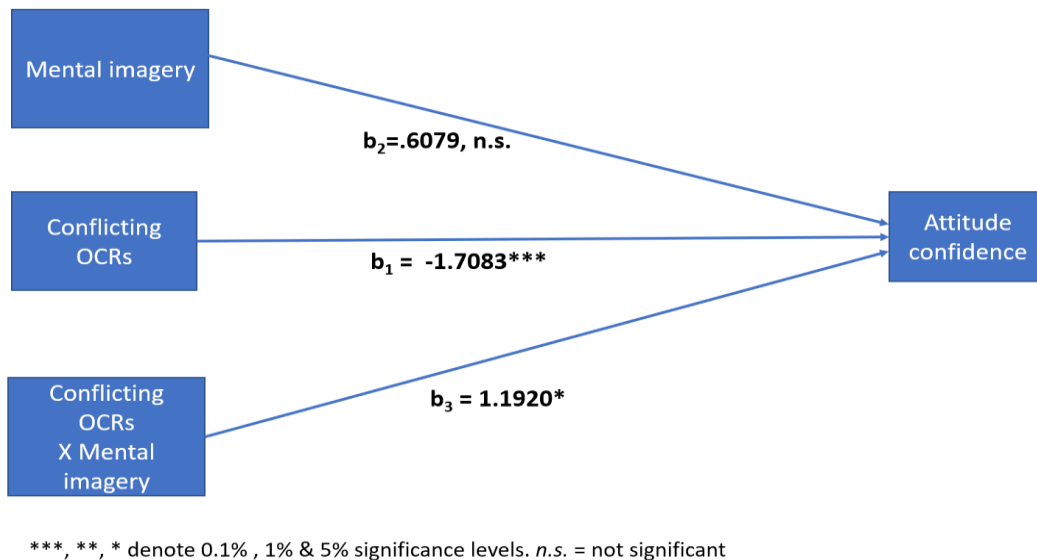


Figure 6.4. The moderation model for attitude confidence.

The moderation models for both booking intention ($R^2 = .6080$, $F(3, 110) = 56.8745$, $p < .001$) and attitude confidence ($R^2 = .3237$, $F(3, 110) = 17.5505$, $p < .001$) were significant. Detailed results are shown in Tables 6.7 and 6.8. The conditional effects of conflicting OCRs on booking intention and attitude confidence are shown in Table 6.9. Tables 6.7 and 6.8 show that the interaction effect conflicting OCRs and mental imagery had significant effects on both booking intention and attitude confidence. Thus, hypotheses H3(a) and H3(b) are supported.

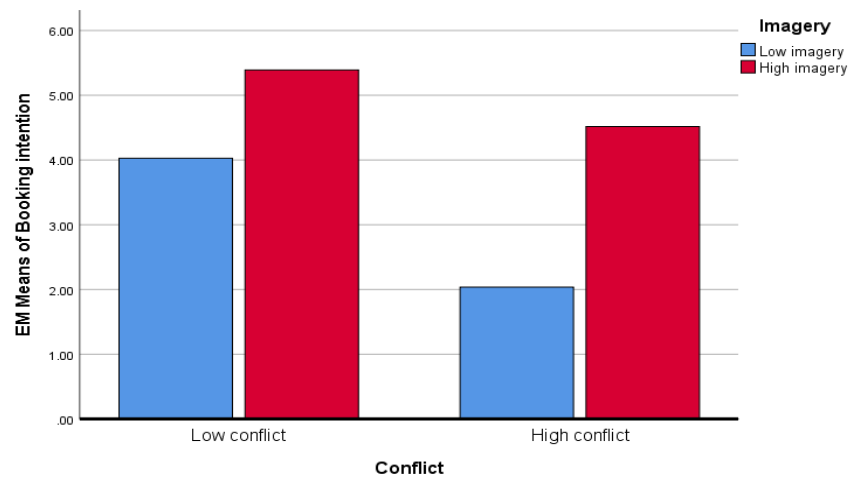


Figure 6.5. The interaction effect of Conflicting OCRs and Mental Imagery on Booking Intention

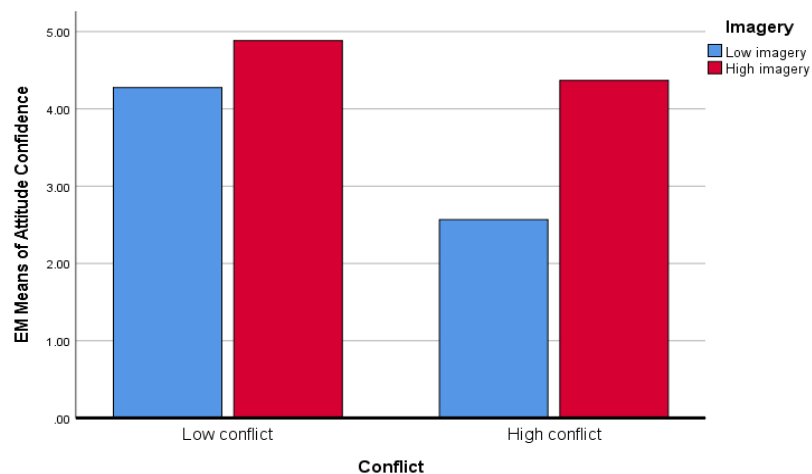


Figure 6.6. The interaction effect of Conflicting OCRs and Mental Imagery on Attitude confidence.

Table 6.7. Model coefficients for booking intention

$R^2 = .6080$ $MSE = .9150$, $F(3, 110) = 56.8745$, $p = .0000$						
	β	SE	t	p	LLCI	ULCI
Constant	4.0286	.1617	24.9153	.0000	3.7081	4.3490
Conflicting OCRs	-1.9915	.2450	-8.1281	.0000	-2.4771	-1.5060
Mental imagery (MI)	1.3627	.2568	5.3073	.0000	.8539	1.8716
Conflicting OCRs x MI	1.1175	.3625	3.0831	.0026	.3992	1.8358

Table 6.8. Model coefficients for attitude confidence

$R^2 = .3237$, $MSE = 1.5177$, $F(3, 110) = 17.5505$, $p = .0000$						
	β	SE	t	p	LLCI	ULCI
Constant	4.2762	.2082	20.5353	.0000	3.8635	4.6889
Conflicting OCRs	-1.7083	.3156	-5.4137	.0000	-2.3336	-1.0829
Mental imagery (MI)	.6079	.3307	1.8382	.0687	-.0475	1.2632
Conflicting OCRs x MI	1.1920	.4668	2.5537	.0120	.2670	2.1171

Table 6.9. Conditional effects of conflicting OCRs for low and high mental imagery

	Effect	SE	t	p	LLCI	ULCI
Booking intention						
Low mental imagery	-1.9915	.2450	-8.1281	.0000	-2.4771	-1.5060
High mental imagery	-.8741	.2671	-3.2725	.0014	-1.4034	-.3448
Attitude confidence						
Low mental imagery	-1.7083	.3156	-5.4137	.0000	-2.3336	-1.0829
High mental imagery	-.5162	.3440	-1.5008	.1363	-1.1979	.1654

Conditional process analysis

To test Hypothesis 4, we ran PROCESS model 7. The model included conflicting OCRs as the independent variable, attitude confidence as the mediator, mental imagery as the moderator, and booking intention as the dependent variable. The model coefficients and the significance levels are shown in Figure. 6.7. Detailed results are shown in Table 6.10.

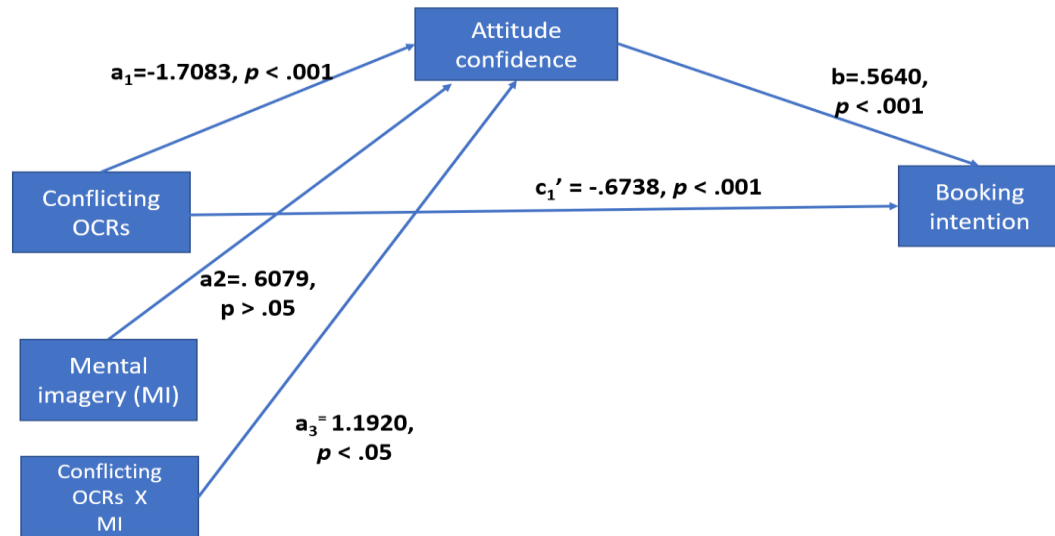


Figure 6.7. Model coefficients and significance levels of the conditional process model

Table 6.10. Results of conditional process analysis

	β	SE	t	p	LLCI	ULCI
Dependent variable = Attitude confidence						
Constant	4.2762	.2082	20.5353	.0000	3.8635	4.6889
Conflict (C)	-1.7083	.3156	-5.4137	.0000	-2.3336	-1.0829
Mental imagery (MI)	.6079	.3307	1.8382	.0687	-.0475	1.2632
C x MI	1.1920	.4668	2.5537	.0120	.2670	2.1171
Dependent variable = Booking intention						
Constant	2.0212	.3787	5.3368	.0000	1.2707	2.7717
Conflict (C)	-.6738	.2268	-2.9705	.0036	-1.1233	-.2243
Attitude confidence	.5640	.0771	7.3186	.0000	.4113	.7167

	$R^2 = .3237$ $MSE = 1.5177$, $F = 17.5505$, $p = .0000$					
Dependent variable = Booking intention						
Constant	2.0212	.3787	5.3368	.0000	1.2707	2.7717
Conflict	-.6738	.2268	-2.9705	.0036	-1.1233	-.2243
Attitude confidence	.5640	.0771	7.3186	.0000	.4113	.7167
	$R^2 = .4420$ $MSE = 1.2909$ $F = 43.9557$ $p = .0000$					
Direct effect: Conflict → Booking intention						
	-.6738	.2268	-2.9705	.0036	-1.1233	-.2243
Indirect effect: Conflict → Attitude confidence → Booking intention						
	Effect		BootSE		BootLLCI	BootULCI
Low MI	-.9635		.2012		-1.3797	-.5923
High MI	-.2912		.1962		-.6923	.0835
Index of moderated mediation						
	Index = .6723		.2587		.1851	1.2016

In the high mental imagery condition, the indirect effect $((a_1 + a_3) \times b = -.2912$; Fig. 6.7) was different from that when mental imagery was low ($a_1 \times b = -.9635$). The difference between the indirect effect at the high and the low levels of the moderator is $(.9635 - .2912 = .6723)$, the index of moderated mediation (IMM). The bias-corrected 95 % bootstrap confidence interval for the IMM, based on 5000 bootstrap samples [.1851, 1.2016], did not contain zero. That is, the index of moderated mediation was statistically different from zero. This result supports the hypothesis (H4) that the indirect effect of conflicting OCRs on booking intention via attitude confidence is moderated by mental imagery. Thus, the indirect effect of conflicting OCRs on hotel booking intention is conditional upon the level of mental imagery. Table 6.11 below shows whether the hypotheses were supported.

Table 6.11 Hypothesis testing results, Study IV

		Supported
H1 (a)	Conflicting OCRs decrease hotel booking intention.	Yes
H1 (b)	Conflicting OCRs decrease attitude confidence.	Partially ¹
H2	Attitude confidence mediates the effect of conflicting OCRs on hotel booking intention.	Yes
H3 (a)	Mental imagery moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on hotel booking intention will be smaller for the high mental imagery condition.	Yes
H3 (b)	Mental imagery moderates the effect of conflicting OCRs such that the negative effect of conflicting OCRs on attitude confidence will be smaller for the high mental imagery condition.	Yes
H4	Mental imagery moderates the mediating effect of attitude confidence, such that consumers with high mental imagery generate higher attitude confidence.	Yes

1. Only for low mental imagery

6.8. Discussion

In this study, we investigated the effect of conflicting OCRs using a different operationalization of conflict. Translations of theoretically defined independent variables into an operational treatment may not capture all features of the variable of interest (Bornemann & Hattula, 2021). This necessitates multiple operationalizations of the independent variable. Therefore, in this study, conflict was operationalized by having an aggregated rating not matching the review or the review rating. Introducing variation in the operationalization of the independent variable and the consumption context (hotels) enhanced the replicability of the effects hypothesized in this thesis and helped capture more of the aspects of conflicting OCRs. This study tested and found support for the

negative effects of conflicting OCRs and revealed attitude confidence as the mechanism through which such effects impact hotel booking intentions. Moreover, this study provided empirical support to the hypothesis that mental imagery mitigates the detriments of conflicting OCRs. The benefits of enhancing mental imagery through marketing stimuli are documented in the literature (e.g., Yoo & Kim, 2014) and are well-known to practitioners. However, to the best of our knowledge, this study is the first to propose and test mental imagery as a mitigator of the negative effects of conflicting OCRs.

Mental imagery can be evoked by several types of sensory stimuli, including images and videos. Most OCR platforms support both images and videos. Therefore, using only static images to manipulate mental imagery is a study limitation. Though videos far outnumber the occurrence of images on OCR platforms, we could conduct additional research to test how dynamic stimuli, such as videos or interactive elements, influence the findings of this study.

Brand names could confound the results by systematically influencing the dependent variable. Prior brand attitudes could already mitigate the perceptions of conflicting OCRs; hence, using a fictitious name was a solution. Past research has also resorted to using fictitious brand names. For example, Bachleda & Berrada-Fathi (2016) used the fictitious brand name “Holiday Hotel.” Similarly, Gunasti et al. (2020) and Khamitov & Puzakova (2022) used fictitious brand names to avoid the confounding effects of existing brand attitudes. However, using actual brand names could provide fresh insights into conflicting OCRs’ effects and enhance the present findings’ generalizability.

While our study primarily focuses on the moderating role of mental imagery in the relationship between conflicting OCRs and booking intention, future research could examine whether mental imagery influences attitude confidence, subsequently impacting booking intention. Testing mental imagery as a mediator would provide a deeper understanding of the mechanisms at play and complement our current findings.

Discussion and conclusion

7.1. Overview

This chapter discusses the findings of the four studies and presents the theoretical and practical implications. We conclude with a discussion of the limitations and suggest avenues for future research.

The present dissertation explores consumer information processing — and contingencies thereof — from conflicting online consumer reviews (OCRs). Study 1 presents a process model for understanding how consumers process conflicting OCrs and navigate through typical OCR systems.

Selected moderators gleaned from Study 1 are tested experimentally in Studies 2,3 and 4. Given that conflicting OCR is the object of investigation, and consistency of information is one of the psychological appraisals bearing on attitude confidence (Rucker, Tormala, Petty, & Briñol, 2014), the experiments also test attitude confidence as a mediator.

Taken together, the results of the four studies unpack consumers' cognitive appraisals while processing conflicting OCrs. They demonstrate that conflicting OCrs elicit different responses from consumers based on situational and individual factors. Conflicting information may even be desired by consumers to gain confidence in their OCrs-based product evaluations and ensuing purchase intentions.

7.2. Discussion of results

Study 1 attempts to understand the cognitive appraisals during OCR processing, specifically how consumers make sense of equivocal, conflicting information — a very common characteristic of OCRs. To this end, we employed process tracing, which provides insights into the “black box” of cognitive appraisals. Cognitive appraisal has been defined as “a process through which the person evaluates whether a particular encounter with the environment is relevant to his or her well-being, and if so, in what ways” (Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen 1986, p. 992). In the current study, the information processing “environment” is the information-rich OCR system containing conflicting information and interactivity features that allow consumers to navigate, select, and skip through the information environment. Cognitive appraisals depend on contextual and individual factors (Stephens & Gwinner, 1998). Accordingly, we found that conflicting OCR processing by the study participants was influenced by contextual factors, including the default evaluation presented by the aggregate rating, the level of perceived disagreement in reviewers' opinions, and the schema invoked during processing. The final processing outcome could play out in three ways: (1) participants could retain their emerging judgment based on easy-to-process summary information, (2) alter the emerging judgment, or (3) bolster the emerging judgment by engaging in reasoning guided by the emerging judgment. After processing the summary information, all participants form an emerging judgment and process the more detailed information with different purposes. In the first type of processing, participants expend little effort and do not pay much attention to the sidedness of the OCRs. The latter two types of processing are systematic and effortful, often labeled Type-2 processing. The distinction between the two types of Type-2 processing is a feature of the Pennycook model that we adopted in this dissertation and is absent from most other dual-process models (Evans, 2019). The study underscores that OCR processing is contingent upon contextual and individual factors. The same set of conflicting OCRs may lead to different information processing outcomes, depending on the cognitive appraisals that unfold. The last observation helps to clarify the inconsistent findings in previous studies regarding the impact of conflicting OCRs on product attitude and purchase intentions. Prior literature has mostly assumed a uniform consumer response to conflicting OCRs; that is,

they either posit that conflicting OCRs have negative or positive consequences. However, as we find in Study 1, consumers undergo different cognitive appraisals during OCR processing and can have one of the three processing outcomes mentioned above. Moreover, consumers' schema and their perceptions of the default evaluation impact the appraisals. The bottom line is that the same OCR set can be interpreted in different ways, and consumers may develop positive, negative, or inconclusive product evaluations.

This study motivates the investigation of contingencies or moderation of the effects of conflicting information in OCRs. Study 1 participants differed in whether they detected conflict and how they attempted to resolve conflict. A notable way of resolving conflict, as evident from the verbal protocols data, involved referencing imagery in instances where textual information presented ambiguity. Therefore, further investigation is conducted through three online experiments designed to understand better the dynamics of how consumers process and are affected by conflicting OCRs.

The three types of processing outcomes demonstrated in this study are consistent with Rucker et al.'s (2014) positive, negative, and neutral appraisals in the appraisals-based framework for persuasive communication.

In addressing the inconsistent findings within the literature, previous studies have identified several potential moderating factors. Extending this literature stream, our research investigates the roles of dialectical thinking and mental imagery as potential moderators of the downstream consequences of conflicting OCRs. Study 2 investigates the moderating role of dialectical thinking in processing conflicting OCRs. It posits that individuals with a high level of dialecticism exhibit an enhanced capacity to assimilate and accept contradictory information in OCRs. As hypothesized, conflicting OCRs negatively impact the recommendation intention. The confidence in one's attitude (attitude confidence) mediates this effect. Additionally, the level of dialectical thinking moderates the mediating effect. In particular, when dialectical thinking is high, the negative indirect impact of conflicting OCRs is reduced. The study also revealed an interaction between the level of conflict (rating variance) and the aggregate rating, which was not hypothesized.

Study 3 is a conceptual replication of Study 2. It sought to replicate the hypothesized relationships for a search product and a different type of conflicting information in OCRs. As in Study 2, we found a negative effect of conflicting OCRs; attitude confidence mediates this effect, and dialectical thinking moderates the mediating effect. We found that contrary to Study 2, dialectical thinking did not moderate the direct effect of conflicting OCRs on purchase intention. We attribute this difference to the different types of information processing for different product types. The model that we tested contains a metacognitive mediator; past research (e.g., Pocheptsova et al., 2010) has shown that different product types entail different product evaluations depending on the metacognitions. Pocheptsova et al. (2010) have shown that the effect of metacognition on product evaluation depends on the consumption domain. Specifically, metacognitive difficulty (versus ease) perceived when processing information enhances the evaluation of “special-occasion” products. However, for daily-use products, metacognitive difficulty has the opposite effect. Consumers’ subjective explanations for their feelings during information processing, for example, “feelings of rightness” (Thompson & Johnson, 2014) or feelings of ease or difficulty (Graf et al., 2018), shape the impact of metacognition. Similarly, the same set of OCRs can lead to opposite inferences depending on naive theories (Deval et al., 2013), which are consumers’ subjective, common-sense explanations of their metacognitive feelings during information processing. Moreover, consumers have different naive theories for different product types (Steinhart et al., 2014). This was also evident from the verbal protocol data collected in Study 1. For example, one participant believed that electronic products could be good only if they have an aggregate rating of 4.2 or above. Another participant believed in a rough threshold number of reviews for them to be helpful in decision-making.

Study 4 tests the effect of mental imagery, a moderator gleaned from insights gained during Study 1. There were repeated instances of participants directing their attention to hotel images accompanying OCRs when they could not resolve the conflict in the opinions expressed in the OCR text. Moreover, photographic content as a digital marketing tool is now gaining research attention, whereas previously, the focus was on textual content (Hou & Pan, 2023). The study found a negative effect of conflicting OCRs on attitude confidence

and hotel booking intention. Attitude confidence mediated the effect of conflicting OCRs, and mental imagery moderated the mediating effect.

Whereas Studies 2 and 3 focus on an individual difference variable (dialectical thinking), Study 4 focuses on mental imagery— a marketer-controlled variable. Except for the moderator, Study 4 is a conceptual replication, providing further empirical evidence for the hypothesis that high levels of conflict in OCRs lead to negative product evaluations and that these evaluations are mediated by attitude confidence. The results showed that mental imagery is a negative moderator; that is, it mitigates the negative effect of conflicting OCRs.

7.3. Theoretical contributions

First, our findings help resolve the mixed empirical findings about the effects of conflicting OCRs by establishing an individual and a contextual factor as moderators. Both positive and negative effects of conflicting OCRs are supported by empirical evidence. Prior research has proposed moderating factors to explain this inconsistency. To further this line of research, we explored dialectical thinking and mental imagery as moderators. As noted earlier, the role of dialecticism in contradictory information processing is underexplored (Wang et al., 2016), especially in marketing (Liu et al., 2023). This study contributes to the growing literature on dialectical thinking by presenting potentially the first set of empirical findings regarding its moderating influence in a South Asian context. Given dialectical thinking varies across individuals and cultures, our research demonstrated (1) the effectiveness of DeMotta's (2021) dialectical priming exercise and (2) how dialecticism fosters acceptance of contradiction within the South Asian population. Until now, research on dialectical thinking has predominantly focused on American samples, with only a few studies involving East Asian samples. Furthermore, our findings illustrate that dialectical thinking helps alleviate the adverse effects of conflicting information in online consumer reviews for both search and experience products.

Second, our research is the first to link dialecticism and metacognition in consumer information processing. This dissertation and some previous research have demonstrated

that dialectical thinking interacts with conflicting information. How is this interaction transmitted to the outcomes of marketers' interest (e.g., purchase intention)? This question pertains to intervening or mediating variables. Prior research has proposed that the said interaction affects perceptions of the OCRs (e.g., review credibility, review helpfulness). This dissertation proposed and found empirical support for the proposition that the conflict x dialectical thinking interaction affects consumers' metacognitions before the processing outcome (e.g., purchase intention). Specifically, given a set of conflicting OCRs, high dialectical thinking consumers will be more confident in their attitudes. Metacognitive experiences (e.g., feelings of confidence) have good potential to explain such conundrums as these: two identical consumers going through the same set of conflicting OCRs forming different purchase intentions. Consumer behavior and marketing research has broadened its capacity to elucidate consumers' decision-making by transitioning from cognitive to metacognitive approaches (Rucker & Tormala, 2012). Metacognitive tags (e.g., confidence) of attitudes are promising theoretical explanations of consumers' attitude-intention-behavior gaps (Bhattacharjee & Sanford, 2009; Sheeran, 2002). Current evidence indicates that intentions are actualized into behaviors only 50% of the time (Sheeran & Webb, 2016).

Third, we establish mental imagery processing as a mitigator of the negative effects of conflicting OCRs. Prior literature has documented the advantages of improving mental imagery through marketing stimuli (e.g., Yoo & Kim, 2014). However, to our knowledge, this study is the first to suggest and examine mental imagery as a way to alleviate the adverse effects of conflicting OCRs.

Fourth, we contribute by advocating a new dual-process model to understand conflicting information processing. According to MacInnis' (2011) typology, a theoretical contribution is classified as advocacy if it "recommends or pushes for something, or speaks in support of a particular view" (p. 147). This dissertation referred to the criticisms of extant dual-process models and also pointed out how classifying information cues as central and peripheral (or heuristic and systematic) in the OCR literature is problematic. Consequently, this dissertation embraces a modified dual-process framework (Pennycook, 2015) to elucidate the mechanisms through which consumers process conflicting information from

OCRs. It advocates that this refined model offers a nuanced perspective on how consumers navigate and make sense of disparate pieces of OCR information.

This theoretical contribution also has elements of theoretical integration insofar as we synthesize the tenets of the said model and the ideas of default and schema, which are prevalent in most information-processing situations.

Fifth, we make a methodological contribution pertaining to qualitative data collection. The qualitative exploration of how consumers process conflicting OCRs used triangulation to get a fuller picture of the phenomenon. Specifically, we obtained process data (verbal protocols or think-aloud and screen recording) and supplemented it with follow-up interviews. Both triangulation and the types of data we collected are common in marketing and consumer behavior research. However, this research is perhaps the first to use the think-aloud, screen recording, and follow-up interviews in conjunction to gain deep insights into online consumer behavior. We hope that this combination of techniques to gather qualitative data will attract researchers studying consumer behavior on the Internet. We used the think-aloud data to gain a process understanding of consumers' conflicting OCR processing. However, such data can also be used to test hypotheses regarding selected aspects of process models (Schulte-Mecklenbeck et al., 2011).

Lastly, by employing process tracing (Study 1) and online experiments (Studies 2,3 and 4), we combine the “process theory” and “variance theory” methodologies, which provide an “event-driven” and “outcome-driven” explanation (Van de Ven, 2007) of consumers' conflicting information processing.

7.4. Implication for practitioners

The insights from this dissertation reveal that conflicting OCRs are an opportunity rather than a challenge. Marketers can use conflict in OCRs to help consumers form confident and, therefore, more consequential attitudes by providing them opportunities to resolve the conflict. Recently, the Amazon.com OCR system has started displaying AI-

generated summaries of the OCRs. Currently, it is just a product attribute-wise summary. However, its effectiveness can be enhanced by presenting summaries that help consumers resolve conflicts arising because of the differing opinions of the reviewers.

Advancements in AI, big data, and web development have facilitated the profiling of individual users (Trusov et al., 2016) to enhance customer experience and customer satisfaction (Bakaev et al., 2021). Practitioners can factor in the dialectical thinking levels of consumers to present them with curated OCRs that help consumers form a positive product attitude. Brand and Reith (2022) and Park and Jeon (2018) have also proposed tailoring the OCR presentation formats depending on cultural backgrounds. Nevertheless, considering the variability of dialectical thinking both across cultures and across individuals within a culture, we recommended that targeting strategies shift from a broad cultural categorization towards a more nuanced, individualized profiling approach.

Firms and OCR platform managers have more control over mental imagery through user-uploaded images than the textual content of the OCRs. Therefore, practitioners can leverage the ability to promote mental imagery processing to mitigate the detriments of highly contradictory OCRs. It has been suggested that managers in the tourism sector help consumers co-create hotel or destination image by sharing their photos online (Filieri et al., 2021). Consumers contributing to OCR platforms can also be encouraged to post their photographs depicting their experiences.

As pointed out in an earlier chapter, OCR platform managers would realize that the diversity of reviewer opinions is essential for the trustworthiness of an OCR system and for perceptions of information completeness. Moreover, Study 1 revealed that some consumers even seek conflicting OCRs. However, it is important to note that not all types of conflicting information will have similar effects. When conflict arises because of inconsistency between the review rating and the review text, it can decrease the OCR credibility and helpfulness perceptions. Therefore, OCR platforms should consider implementing a mechanism to prompt reviewers to match the rating they assign with the review sentiment. Currently, the top five OCR systems —Yelp.com, Google Reviews,

TripAdvisor.com, Facebook Reviews, and Amazon.com (Qahri-Saremi & Montazemi, 2019) do not have this functionality.

Hotels could use vivid, high-quality visuals and immersive virtual tours on their booking platforms to stimulate positive mental imagery and reduce the negative effects of conflicting OCRs. Additionally, crafting emotionally engaging descriptions and highlighting unique features in marketing communications can help create cohesive and appealing mental imagery that outweighs the ambiguity caused by conflicting OCRs. Prior research (e.g., Yoo & Kim, 2014) has established that using concrete text can also enhance mental imagery.

7.5. Limitations and future research directions

While this dissertation obtained a cohesive set of insights into consumers' processing of conflicting OCRs, there are several limitations to it, which we discuss here. We also suggest future research avenues.

The first limitation concerns the time available to participants in the studies. The participants in all studies had no time limit to select and process OCRs. However, in real life, consumers are almost always under time pressure. Moreover, regardless of the amount of time consumers have, they may face time pressure due to external factors such as limited-time discount offers and fears of stock-out (Godinho et al., 2016). Prior research has found that time pressure affects consumer decision processes (Dhar & Nowlis, 1999) and online browsing and shopping behavior (Liu et al., 2017). Therefore, future studies may examine the effect of time pressure on information processing from conflicting OCRs.

The second limitation is regarding the nature of dependent measures. All studies used hypothetical measures of intention rather than actual behavior, which is common in academic research in marketing, consumer behavior, and allied disciplines. However, more insights into actual consumer behavior can be obtained by employing measures of actual behavior (Morales et al., 2017).

The third limitation pertains to the moderator dialectical thinking. As pointed out earlier, dialecticism varies across individuals as well as across cultures. Therefore, to enhance the robustness of the moderating effect of dialecticism on the processing of conflicting OCRs, it should be tested in cross-cultural studies. Cross-cultural examinations are required, especially because the world economy is increasingly becoming cross-cultural, necessitating cross-cultural insights into consumer behavior (Luna & Forquer Gupta, 2001).

The fourth limitation is regarding the selection of information cues embedded in OCRs. This dissertation focused on ratings, review text reviews, and images only. Indeed, much of eWOM research has focussed on numeric or quantifiable measures such as ratings and variance, valence, and volume of OCRs (Guo et al., 2017). However, these measures do not sufficiently capture all content in the information-rich OCRs (Archak et al., 2011). The OCRs' content characteristics (e.g., linguistic features, embedded emotions) have not generated much research (Zablocki et al., 2019). This research gap makes examining conflict arising from content characteristics a promising research avenue that can be explored using data mining techniques. Data mining is an emerging topic in OCR research (Verma & Yadav, 2021).

The fifth limitation stems from the use of images alone to manipulate imagery. Even though prior research has used images to manipulate imagery, this is a limitation because (1) imagery arises from several types of sensory cues, and (2) information-rich OCRs present non-image sources of imagery. For example, concrete text can also enhance mental imagery (Yoo & Kim, 2014). Li, Wang, Meng, & Zhang (2019) have also noted the lack of empirical research investigating the effect of different sensory cues on consumer responses to OCRs. The lack of research in this area may offer future investigation opportunities.

Finally, this dissertation has only considered OCRs, which are a subset of eWOM. Though the bulk of prior eWOM research has paid attention to OCRs (Cheung & Thadani, 2012), several other types of user-generated content are available on the internet, where conflicting information can arise.

The rapid advancements in artificial intelligence (AI) have impacted several facets of human life (Kumar et al., 2019; Puntoni et al., 2021), including business and marketing (Dwivedi et al., 2023). One of the marketing applications of AI is AI-enabled recommender systems (Puntoni et al., 2021; Chua et al., 2023). Such recommendations can aid consumer decision-making and have been called word-of-machine (Longoni & Cian, 2022), robotic-WOM (r-WOM) (Akbari et al., 2022), and algorithmic-WOM (a-WOM) (Williams et al., 2020). Consumers will likely use these non-human communications in conjunction with human communications (electronic word-of-mouth) in their customer journeys which will give rise to a new phenomenon deserving research attention. Future research may consider how consumers resolve a conflict between electronic word-of-mouth and word-of-machine. This will add to the body of research examining the combined effects of word-of-mouth from different sources (e.g., Naujoks & Benkenstein, 2020; Shabbirhusain and Varshney, 2022).

This dissertation examined the effects of conflicting OCRs on purchase intention. Though purchase intention and similar variables are common in marketing research, it assumes the traditional linear customer journey comprised of pre-purchase, purchase, and post-purchase stages. However, it is increasingly being recognized that the contemporary customer journey is non-linear and iterative, with past customer experience influencing current and future customer experience (Lemon & Verhoef, 2016). OCRs and other forms of eWOM have contributed to this fundamental shift in the customer journey (Ngarmwongnoi et al., 2020). For instance, a consumer in the pre-purchase stage might read highly engaging and persuasive OCRs, leading to an immediate decision to purchase the product. Conversely, if the OCRs are negative, they might bypass the purchase altogether, transitioning directly to the post-purchase stage, where they author their own review and participate actively in disseminating online and offline word-of-mouth (Grewal & Roggeveen, 2020). Therefore, future research on information processing from OCRs at different stages of the customer journey is warranted.

We used self-report measures as the dependent variables. Though hypothetical measures of intention are common in marketing and the behavioural sciences, they are self-reported data and may not accurately predict actual behaviors due to factors like social desirability bias and the intention-behavior gap. Future research using behavioral measures, such as actual bookings or purchases, presents a feasible and valuable avenue for addressing the limitations of this thesis.

Advances in technology and the proliferation of digital platforms facilitate the collection of real-world behavioral data more efficiently. For instance, tracking actual bookings or purchases through transactional data, website analytics, or controlled experimental setups is now more achievable. Collaborating with industry partners can provide access to such data, ensuring ecological validity. Higher experimental realism and behavioral measures are more effective in illuminating important insights about actual consumer behavior. Behavioral measures offer several advantages:

- i. Observing real actions provides a more accurate reflection of consumer behavior than self-reported intentions.
- ii. Behavioral data can reveal patterns and nuances, such as timing, frequency, and contextual influences, that are not easily captured through hypothetical measures.
- iii. Findings based on actual behaviors are more actionable for practitioners as they reflect tangible outcomes like sales or bookings.
- iv. Combining behavioral measures with psychological constructs (e.g., mental imagery or attitude confidence) allows for a richer understanding of the pathways leading to actual behavior.

While the feasibility of such research depends on resource availability and data access, the potential benefits make it a worthwhile pursuit for advancing theoretical understanding and enhancing practical applications.

- iv. Combining behavioral measures with psychological constructs (e.g., mental imagery or attitude confidence) allows for a richer

The following are some promising research avenues:

- i. How does prior brand attitude impact the effect of conflicting OCRs on purchase intentions?
- ii. How do gender-specific influences impact the effect of conflicting OCRs on purchase intentions?
- iii. Is mental imagery a significant mediator of the relationship between conflicting OCRs and hotel booking intention?
- iv. What mechanisms underlie the mediating role of mental imagery in influencing attitude confidence and subsequent behaviors?

With the emergence of global markets, market segmentation along cultures has become more important than ever. Therefore, marketers need robust insights into the impact of culture on consumer behavior. Cross-cultural studies will be required to cater to this need. There are specific cultural dimensions or values that might influence consumer responses to conflicting OCRs. Here we discuss some dimensions with respect to India:

India scores high on power distance, indicating respect for authority and hierarchy. Consumers may give more weight to reviews authored by perceived experts, verified buyers, or high-profile influencers. Conflicting reviews are more likely to be resolved by favoring those from authoritative sources over general consumer opinions.

Other Indian consumer values, such as collectivism, uncertainty avoidance, and long-term orientation, are important moderators of Indian consumer behavior (Khare, 2014) and are expected to shape Indian consumers' responses to conflicting OCRs.

Indian consumers' ethnocentrism and traditional and religious values impact their decision-making process. OCRs that resonate with cultural norms, ethical practices (e.g., sustainability or fairness), or religious sentiments may hold greater influence. In cases of conflicting OCRs, consumers may favor those that align with their cultural and moral values.

Consumer involvement, product knowledge, and trust in the OCR platform are important moderators of information processing. These variables have been widely studied in consumer behavior and different contexts in OCR research. For example, Park and Lee (2008) investigated the interaction between consumer involvement and OCR information overload. Park, Lee, and Han (2007) studied the role of involvement in quantity versus quality of OCRs. Product knowledge and trust are also important moderators of consumer information processing and have been studied in the OCR literature. However, their role in the face of conflicting OCR information remains to be explored.

As noted earlier, prior brand attitude is also a potential moderator of the effects identified in this thesis.

AI-enabled recommender systems can change the way consumers process OCRs, especially when they contain conflicting information. These systems can significantly influence consumer decision-making by filtering and presenting reviews in a tailored manner. Here, we discuss some potential implications. AI can analyze a user's preferences, past behaviors, and demographic profile to prioritize reviews that align with their interests, potentially reducing the confusion caused by contradictory reviews.

By summarizing the overall sentiment and highlighting key themes from conflicting OCRs, AI-enabled systems can simplify the consumer decision-making process for consumers. AI can pinpoint aspects of reviews that are most relevant to individual consumers, such as price, quality, or specific features, helping them navigate contradictions more effectively. Amazon has already begun providing an AI-generated crux for OCRs. AI can also identify and minimize biases in OCRs, such as overly negative or fake ones, ensuring a more balanced presentation and helping consumers make informed decisions.

It will be interesting to examine the impact of AI-enabled recommender systems on consumer behavior, focusing on how these systems influence purchase intentions when conflicting OCRs are present. Overall, AI-enabled recommender systems will further the idea behind OCRs-optimizing consumer decision-making and creating value for marketers.

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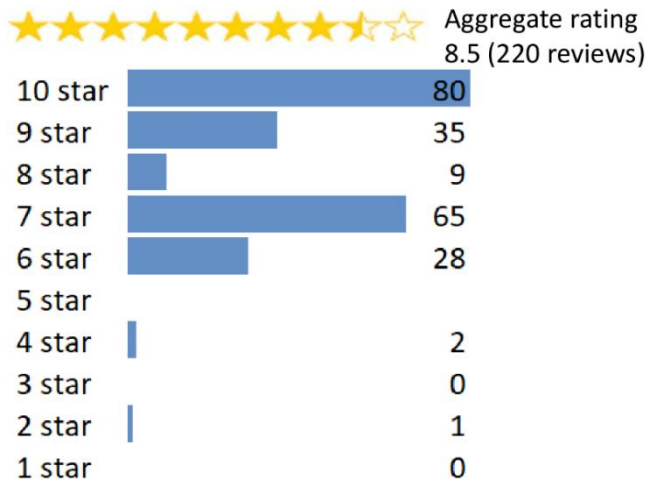
Appendices

Appendix A. Study 1 Participant details

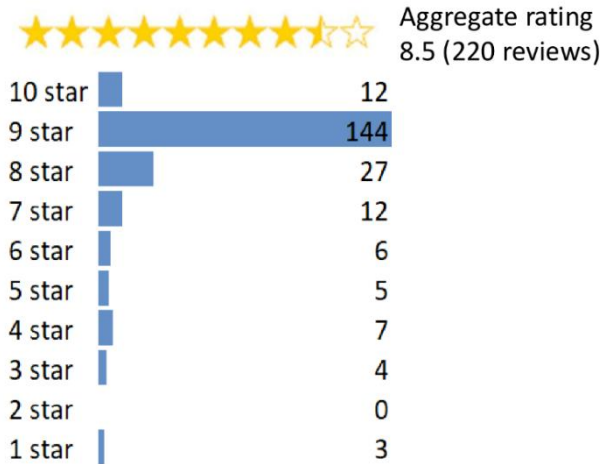
Participant Id	Gender	Product	Screen recording (minutes)
P1	Female	Hotel	19
P2	Male	Earphones	14
P3	Male	Hotel	17
P4	Male	Hotel	13
P5	Female	Hotel	8
P6	Male	Hotel	16
P7	Male	Earphones	14
P8	Male	Earphones	11
P9	Female	Hotel	17
P10	Male	Hotel	18
P11	Male	Hotel	12
P12	Male	Hotel	14
P13	Male	Earphones	20
P14	Female	Hotel	7
P15	Female	Hotel	9
P16	Male	Hotel	18
P17	Female	Earphones	12
P18	Male	Earphones	15
P19	Male	Earphones	11
P20	Male	Earphones	6
P21	Male	Hotel	13
P22	Female	Hotel	13
P23	Male	Earphones	10
P24	Male	Earphones	8
P25	Female	Hotel	19
P26	Male	Earphones	21
P27	Male	Hotel	12

APPENDIX B1. Study 2 Experimental stimuli

The various combinations of high and low aggregate rating and high and low variance condition. The ratings were shown on a separate screen after the image and description of the houseboat.



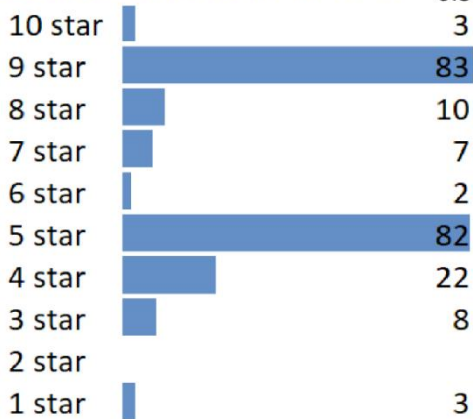
This houseboat is equipped with all modern facilities in a traditional manner, having beautifully furnished spacious bedrooms, 24 hour front desk service, laundry and medical services and complimentary newspapers are provided to the guests. There is a back-up generator in case of power cuts. Our services range from the organized / tailor-made tour to the unique Himalayan trek and after generations of family in this business, we are able to offer an in-depth knowledge of the region, its traditions and local customs. So if you wish to fully explore this area of unsurpassed beauty and enjoy its multitude of attractions, then be sure to talk to us first.



This houseboat is equipped with all modern facilities in a traditional manner, having beautifully furnished spacious bedrooms, 24 hour front desk service, laundry and medical services and complimentary newspapers are provided to the guests. There is a back-up generator in case of power cuts. Our services range from the organized / tailor-made tour to the unique Himalayan trek and after generations of family in this business, we are able to offer an in-depth knowledge of the region, its traditions and local customs. So if you wish to fully explore this area of unsurpassed beauty and enjoy its multitude of attractions, then be sure to talk to us first.



Aggregate rating
6.5 (220 reviews)



The houseboats are equipped with all modern facilities in a traditional manner, having beautifully furnished spacious bedrooms, 24 hour front desk service, laundry and medical services and complimentary newspapers are provided to the guests. There is a back-up generator in case of power cuts. Our services range from the organized / tailor-made tour to the unique Himalayan trek and after generations of family in this business, we are able to offer an in-depth knowledge of the region, its traditions and local customs. So if you wish to fully explore this area of unsurpassed beauty and enjoy its multitude of attractions, then be sure to talk to us first.



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Appendix B2. Dialectical thinking priming material

Passages and corresponding instructions for priming high (left hand side passage) and low (right hand side passage) dialectical thinking. Source: DeMotta (2021)

Priming high and low dialectical thinking

- Life is often full of change and contradiction. People, objects, and events in the world are constantly changing and sometimes transform into the reversals. For example, good becomes bad, but then bad becomes good. What is true of someone or something at one moment in time may not be true at another moment in time. In this changing world, what is good is also sometimes bad. Contradiction is assumed and accepted.
- Life is often stable and consistent. People, objects, and events in the world will stay the same or progress in predictable directions. What is true of someone or something will stay true of that person or thing. In this stable world, good will be good, and bad will be bad. It is impossible for the same thing to be both true and false at the same time.

We would like you to recall an experience in which you were very aware of change and contradiction as described above.

We would like you to recall an experience in which you were very aware of stability and consistency as described above.

Appendix C1. Low-conflict condition: three positive and one negative review; presented randomly

★☆☆☆☆ 1 out of 5

One day it started charging the ear pods but went on to didn't stop only and the battery of case was draining eventually. Don't expect excellent sound quality. It doesn't fit properly specially in the right ear.

★★★★☆ 4 out of 5

This earphones is the best. Excellent battery backup. It has awesome sound and the base just lifts your mood up. It also fits well in your ears

★★★★☆ 4 out of 5

Amazing battery backup. Over all the sound quality is good and enjoyable.
Ear buds are really light in weight and easy to fit.

★★★★☆ 4 out of 5

Decent battery backup. Sound quality is very good. Bass quality is awesome Fits well in the ears without feeling bulky

Appendix C2. High-conflict condition: two positive and two negative reviews; presented randomly.

★☆☆☆☆ 1 out of 5

One day it started charging the ear pods but went on to didn't stop only and the battery of case was draining eventually. Don't expect excellent sound quality. It doesn't fit properly specially in the right ear.

★☆☆☆☆ 1 out of 5

The audio quality is commendable, but the constant need for recharging overshadows any positive aspects. If battery life is a top priority for you, I would strongly recommend exploring other options in the market

★★★★☆ 4 out of 5

This earphones is the best. Excellent battery backup. It has awesome sound and the base just lifts your mood up. It also fits well in your ears

★★★★☆ 4 out of 5

Amazing battery backup. Over all the sound quality is good and enjoyable.
Ear buds are really light in weight and easy to fit.

Appendix D1. Hotel description

- Situated in Manāli, 4.8 km from Hidimba Devi Temple, Hotel Aevum, Manali features accommodation with a garden, free private parking and a terrace. This 4-star hotel offers room service and a 24-hour front desk. The property is non-smoking and is set 2.4 km from Tibetan Monastery.
- The units at the hotel are fitted with a seating area. The private bathroom is fitted with a shower, free toiletries and a hairdryer. All rooms in Hotel Aevum, Manali are equipped with a flat-screen TV and slippers.
- A continental breakfast is available each morning at the accommodation.
- Circuit House is 3.6 km from Hotel Aevum, Manali, while Manu Temple is 5.4 km from the property. The nearest airport is Kullu–Manali Airport, 47 km from the hotel.

Appendix D2. Low-conflict OCRs

4.5 Excellent
 216 reviews



Nice hotel with high quality food

"You get all the facilities & amenities in reasonable budget especially food quality. Staff members are very friendly & helpful....being in the travel trade my expectations were over the limit but the kind of service we were served were excellent & outstanding... everything was smooth & hassle free...."



Trip to Manali & Keylong

"Excellent Stay!!!

Room were very nice, clean & Spacious. The hotel staff was very polite and very professional. Food was very nice. Excellent view from hotel.

Mr. Bhupinder was very nice and Very professional in his role. He made our trip memorable."



Good scenery view!

"breakfast very nice, besides the hotel has a small park can let customer to take very nice photo, it has good environment, feeling like you are in european country! nice view!! The room big enough, but the bathroom abit disappointing, got water leaking outside our room. Anyway, overall very nice"

Appendix D3. High-conflict OCRs

4.5 **Excellent**  216 reviews



Nice hotel with high quality food

"You get all the facilities & amenities in reasonable budget especially food quality. Staff members are very friendly & helpful....being in the travel trade my expectations were over the limit but the kind of service we were served were excellent & outstanding... everything was smooth & hassle free...."



Trip to Manali & Keylong

"Good Stay!!!

Room were nice, clean but not spacious. The Hotel staff was polite and professional. Food was okay. Good view from hotel.

Mr. Bhupinder was nice and professional in his role. He made our trip satisfying."



Good scenery view!

"breakfast was ok, besides the hotel has a small park can let customer to take photo, it has good environment, feeling like you are in european country! nice view!! The room big enough, but the bathroom abit disappointing, got water leaking outside our room. Anyway, overall okay"

Appendix D4. Images shown in the high- (but not in the low-) mental imagery condition





Appendix D5. Images shown in both the high- and low- mental imagery conditions

