

**Identifying Perceived Deception in Online
Consumer Reviews**

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Abstract

Identifying Perceived Deception in Online Consumer Reviews

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Purpose – There is a rising trend to post deceptive reviews online, and literature has stressed on the difficulty for humans to detect such deceptive online consumer reviews (OCR)s. Consumers are aware of such deceptive practices, but, they do not know for sure which OCR is deceptive and which one is not deceptive. This dilemma forms their perceptions of deception towards OCRs, and brings us to an important question: which cues in OCRs can potentially lead consumers to perceive deception in OCRs? What is the consequence of such perceived deception? In this study we take a consumer-centric approach in trying to understand the cues of perceived deception in online consumer reviews (PDOCR).

Methodology/approach – A between-subjects survey of 251 participants were conducted using the context of online restaurant reviews. The effects of Picture, Emotional Expression, and Incongruent review on PDOCR and purchase intention were measured. The effects of individual cultural values as moderators were also tested.

Findings and implications –Picture and Emotional expression (EE) do not have main effects on PDOCR but on purchase intention only. Picture increases and EE decreases purchase intention. In the presence of the moderating role of Incongruent valence, Picture had a significant effect at 90% CI on PDOCR, and EE had a significant effect at 95% CI on PDOCR. An important aspect of the study was the influence of individual cultural values, and we found several cultural variables significantly moderates incongruent valence, which in turn moderates the effects of Picture and EE on PDOCR. The findings have a number of meaningful theoretical and managerial implications and avenues for future research as it is one of the very few studies on PDOCR.

Keywords: Online consumer reviews; picture; emotional expression; incongruent valence, cultural values; collectivism; power distance; uncertainty avoidance; long-term orientation; masculinity; indulgence; elaboration likelihood model.

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Table of Contents

List of Figures	vii
List of Tables	vii
Identifying Perceived Deception in Online Consumer Reviews	1
1. Introduction	1
2. Literature review.....	6
2.1 Influence of Online Reviews on Consumers	6
2.2 Deceptive Reviews	9
3. Theoretical Framework and Model Development	11
3.1 Consumer’s Perceived Deception in Online Consumer Reviews.....	11
3.2 Incongruent Valence of OCRs	15
3.3 Pictures of the Reviewed Product as a Peripheral Cue	19
3.4 Emotional Expressions	22
3.5 PDOCR as a mediator between Peripheral Cues and Purchase Intention.....	25
3.6 Hofstede’s Cultural Variables.....	26
4. Methodology.....	39
4.1 Sampling and Data Collection	39
4.2 Stimuli selection.....	40

4.3 Measurements	41
5. Results	45
6. Discussions	60
7. Contributions	63
7.1. Theoretical Contributions	63
7.2. Managerial Contributions	65
8. Limitations and Future Research	66
References	69
Appendices.....	91
Appendix A: Results of moderated moderation using PROCESS Hayes model 11.	91
Appendix B	98
Survey respondents' demographics	98
Appendix C	99
Questionnaire used in the survey	99

List of Figures

Figure 1: Conceptual Model.....	5
Figure 2: Conceptual Model.....	36
Figure 3: Picture Used in Questionnaire for the "Picture Present" Condition	42
Figure 4: Bar Chart Showing Interaction Between EE X Incongruent Valence on PDOCR.....	49
Figure 5: Bar Chart Showing Interaction Between Picture X Incongruent Valence on PDOCR... ..	49

List of Tables

Table 1: Summary of Hypotheses	37
Table 2: Main and Interaction Effects.....	50
Table 3: Result of Mediation By PDOCR: Moderated Moderated Mediation Using Process Hayes Model 11	57
Table 4: Summary of Results	58

Identifying Perceived Deception in Online Consumer Reviews

1. Introduction

“The least initial deviation from the truth is multiplied later a thousandfold” ~Aristotle

Deceptive reviews in the web is indeed a growing and troubling phenomenon. Due to the frequent lockdowns and home confinement, people are increasingly relying on online purchases. E-commerce sales increased by 39% in the first quarter of 2021 alone, the second highest record for e-commerce sales during the Covid-19 pandemic, short from a 43.7% record-breaking sales increase in 2020 (Young, 2021). Consequently, the importance of online reviews and ratings has too increased (Karabas et al., 2021). A survey on US-based consumers found that 87% of consumers read online reviews (Murphy, 2020). In a Nielson survey of 25,000 Internet consumers from 50 countries, it was found that 90% consumers trust recommendations from people they know, and 70% respondents said they trusted online consumer opinions, which is equal to their trust in brand websites (Nielson, 2009). Survey by Pew Research found that US consumers read online reviews or ratings before purchasing items for the first time: 82% said they read reviews at least sometimes before making online purchases, and 40% said they always or almost always read reviews (Smith & Anderson, 2016). Their survey also found that people who shop online are eight times more likely to check online reviews compared to those who never shop online (2016).

With the growing importance of online reviews and ratings, many unethical online retailers have been motivated to manipulate online consumer reviews (OCRs) by modifying the quantity of reviews, and quality of content and rating, deleting negative reviews, or adding

positive reviews, in order to influence consumer perceptions (Peng et al., 2016). There are sufficient incentives for businesses to influence consumers through fake reviews (Hu et al., 2012; Luca & Zervas, 2016); Positive reviews help promote the sales of products and services and result in significant financial gains and/or fame for businesses, organizations, or individuals (Zhang et al., 2016). On the other hand, negative reviews can damage the reputation of rival companies and distract customers from their competitors (Wang et al., 2011; Zhang et al., 2016). An example was the case of Samsung, who was fined \$340,300 by Taiwan's Fair Trade Commission for paying people to post negative comments about HTC's products while praising Samsung's (Chang, 2013).

Studies mentioned the presence of “an extensive amount of systematic review fraud in online review platforms” (Luca & Zervas, 2016), mostly prevalent in popular websites related to e-commerce, travel and hospitality, and music (Hu et al., 2012; Schuckert et al., 2016). Researchers have voiced concern on the role of fake reviews in reducing market effectiveness (Malbon, 2013) and in reducing consumer informativeness (Hu et al., 2011). Fake reviews mislead consumers' decisions, and reduce the credibility and value of online reviews (Luca & Zervas, 2016). In a study, He, Hollenbeck, and Proserpio (2020) found that 1-2 weeks after fake reviews were discontinued, the average ratings and the number of reviews decreased substantially, even to the point that the average ratings fell below pre-review level; The share of one-star reviews increased significantly, which hinted that consumers were actually harmed due to purchase decisions based on fake reviews.

Even though there are no exact figure on the proportion of online fake reviews, some estimates suggest that up to one-third of all online reviews are fake (Streitfeld, 2012; Salehi-

Esfahani & Ozturk, 2018). Well-known companies have been embarrassingly found to be involved in generating paid, fake online reviews (Chang, 2013; Meyer, 2019; Pilon, 2009). There are private groups on Facebook where companies hire people to write fake reviews for their products (He, Hollenbeck, & Proserpio, 2020). Research informed about manufacturers sending discounted or free products to consumers, and then asking for glowing online reviews in return (Wu et al., 2020). Another study found fake reviews on an apparel retailer's website written by people who never purchased the product (Anderson & Simester, 2014). The New York State Office of the Attorney General (2013) imposed fines of more than \$350,000 to 19 companies for posting fake reviews online on websites like Yelp, Google Local and CitySearch. Furthermore, studies have unearthed the presence of underground, international markets for fake reviews whose primary purpose is to generate huge numbers of positive, verified, 5-star, fake reviews (Oak, 2021). One of the largest online review platform, Amazon, routinely identifies and removes fake reviews but there is a time lag before Amazon can identify and delete the fake reviews, and by that time, the review-manipulating seller has been already benefitted from, and the customer has been already harmed by the fake reviews (He et al., 2020).

With all the deception going on in the world of OCRs, it is important to pay attention to consumers' perception of deception and the consequent changes in their behaviors. As per our knowledge, with the exception of Peng and colleagues (2016), Ansari and Gupta (2012), and a close study on perceived deception on Internet sites (Grazioli, 2004), there is little research on consumers' perceived deception in online consumer reviews (PDOCR), and there is a major gap in current literature on this topic. Due to this rising need, researchers called for study to

understand PDOCR and the consequences of such perceptions (Liljander et al., 2015; Peng et al., 2016; Roman et al., 2019).

Amid these challenging premises that consumers face while using and evaluating OCRs, a relevant question for both researchers and managers is which cues in OCRs can potentially lead consumers to perceive deception in the OCR? Thus, in this study we take a consumer-centric approach in order to understand the cues of perceived deception. We focus on picture, emotional expressions, and incongruent review valence in OCRs as the potential cues, and consider their impact on PDOCR and consumer's behavioral intention. We use the context of online consumer reviews on restaurants (an experiential product) because online product reviews for experience products are significantly more influential, more important and are used more often by consumers compared to search products (Bei et al., 2004; Senecal & Nantel, 2004). More specifically, restaurateurs have strong incentives to leave fake reviews because OCRs on restaurants have a significant effect on consumer's food choice decision making, and study has found that a one-star increase in Yelp restaurant reviews led to 5-9% increase in revenue of independent restaurants, and even an extra half-star rating on Yelp causes restaurants to sell out 19 percentage points more frequently (Anderson & Magruder, 2012; Luca, 2011).

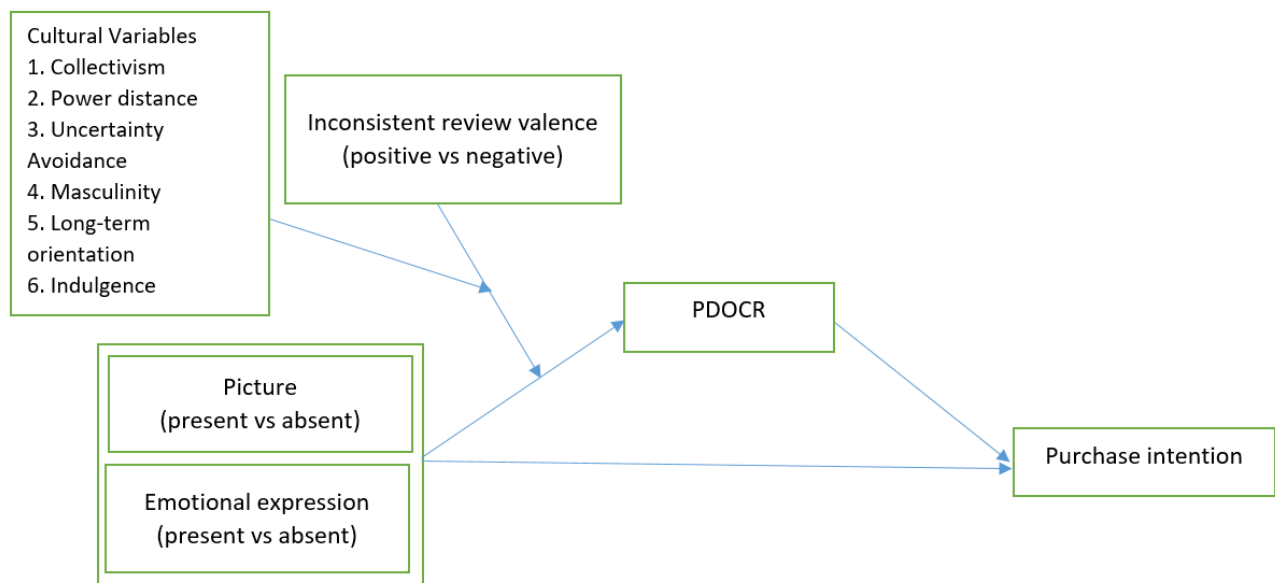
Thus, our research questions are:

1. What are the cues that consumers use in order to perceive deception in online consumer reviews? Specifically, what is the role of pictures (of the reviewed product), emotional expressions, and incongruent valence, as cues for PDOCR?
2. How PDOCR affect purchase intention?

3. How incongruent valence acts as a moderator between the two independent variables (Picture and Emotional Expression) and PDOCR?
4. How individual cultural values act as moderators in PDOCR?

With these questions in mind, we conduct our study based on the conceptual model as presented in Figure 1.

Figure 1: Conceptual Model



We set off by providing a broad review of literature on online consumer reviews (OCRs). Moving from broad overview, we discuss the theoretical background and explore the literature pertinent to our research questions. Then, we describe our research design, data collection, and measurements processes. The results of the study are presented and finally the findings are discussed. In the final section of the paper, we discuss the implications of the findings. The paper concludes with a critical view of the limitations of this study and future research opportunities.

2. Literature review

In this section, we broadly explore the literature on the powerful influence of OCRs, discuss some specific features of OCRs and their influence, and present the various definitions of deceptive reviews. From there, we focus on three features that can potentially be the cues of PDOCR: Pictures, Emotional expressions, and Incongruent Valence, which are then discussed in the subsequent section as we set our theoretical framework, conceptual model, and the hypotheses.

2.1 Influence of Online Reviews on Consumers

Online consumer reviews (OCR) are one of the most significant and popular sources of information for consumers. OCRs are a form of electronic word of mouth (eWOM) containing positive, negative, or neutral evaluation of a product, service, brand or person (Filiari et al., 2018). Chen and Xie (2008) argues that “since consumer-created information is user-oriented but seller-created information is product-oriented, the former has an advantage over the latter in helping consumers to find products matching their preferences” and the review writers act as “free sales assistants” with so much influence that OCRs can potentially be a new element of the marketing communications mix (p.31).

Literature mentioned the significant influence of OCRs on sales across different product categories such as books, new products, movies, hotel rooms and video games (Chevalier & Mayzlin, 2006; Chen et al., 2004; Cui et al., 2012; Ye et al., 2009; Zhu & Zhang, 2010). Customer-generated information has been found to be more credible to fellow consumers than seller or manufacturer generated information, more effectively generated product interest than corporate websites (Bickart & Schindler, 2001), and improved the consumers’ product

perception and likelihood of product recommendation (Gruen et al., 2006). Since consumers cannot examine the product physically when purchasing online, they rely heavily on reviews from fellow consumers to judge the reliability of the product and/or the seller (Malbon, 2013) and to reduce purchase risk and post-purchase regret (Zhu & Zhang, 2010). Comments and reviews are the most convenient source of product information, and hence are very important for buyer decision-making (Crawford et al., 2015). Consumers use ratings websites in order to reduce the effort involved in searching for information (Dabholkar, 2006). Goldsmith and Horowitz adds that consumers seek OCRs in order to get information quickly, find a lower price, and some even find it 'cool' (2006). Furthermore, as the product involvement increase, consumers' use of online information sources also increase; and reviews that provide factual, objective, and relevant information (but not long reviews) are the most helpful (Filiari et al., 2018).

OCRs not only provide valuable information, but also help consumers as they move along the different stages of the purchase decision process: from evaluation of alternatives, purchase decision, and actual purchase, to post-purchase evaluation that might bring another customer to the need recognition stage for a product (Mudambi & Schuff, 2010).

Online reviews serve a two-way purpose for the consumers: in addition to providing information on a product's quality and usage experience, they also provide a means for consumers to voice their product experience to other consumers (Harris, 2012). Such online word of mouth also creates a connected social and informational network where high quality content significantly builds the online community for consumers (Dwyer, 2007).

2.1.1 Influence of specific OCR features: The various features present in the OCRs have a variety of influence on the consumers. Higher variance in the ratings reduce information clarity and increase product returns (Sahoo et al., 2018) and also reduce sales (Ye et al., 2009). The average product ratings serve as important cues for consumers to evaluate the credibility of the product/seller (Flanagin et al., 2013). Consumers are also sensitive to the content and style of review: factual information about the product, information about the review writer, stylistic features like the use of expressive language and errors in grammar and spelling- all of these factors have an influence in making a review helpful to the consumers (Schindler & Bickart, 2012). Ansari and Gupta (2021) tests perceived deceptiveness of online reviews in e-commerce platforms and finds that linguistic cues in the form of micro-level and macro-level speech act impact a customer's perception of deceptiveness.

One of the most important features of OCRs are the review valence because OCRs are generally written with the sole purpose of recommending (positive review) or discouraging (negative review) the purchase of a product or service (Sen & Lerman, 2007; López-López & Parra, 2016). Hence, review valence takes a prominent place and is consistently found to be among the most salient and persuasive feature of online reviews (Karabas et. al., 2021). Reviews valence has a significant effect on perceived reviewer trustworthiness and purchase intention (Lin & Xu, 2017) and review credibility (Wang et al., 2015). Contrarily a few studies on eWOM on movies found that review valence had no effect on sales (Duan et al., 2008; Liu, 2006).

Consumer expertise has been found to moderate the effect of review valence on purchase intention: compared to expert consumers, novice consumers are more positively

affected after reading a positive review, and more negatively affected after reading a negative review (Ketelaar et al., 2015). Similarly, consumers with more internet expertise are wary about the credibility of online information and are less easily influenced by them (Cheema & Papatla, 2010; Zhu & Zhang, 2010). On a similar vein, Filieri and colleagues (2018) mention that compared to 10-15 years ago, when consumers generally considered reviews as credible sources of information, nowadays consumers are more suspicious about the credibility of reviews mostly due to the increasing media reports on deceptive or fake online reviews practiced by well-known companies.

2.2 Deceptive Reviews

In the literature, fake reviews have been referred to as deceptive reviews, review manipulation, fraudulent reviews, online opinion spam, spam reviews, and the like, but so far, there has been no universally accepted definition of fake reviews (Wu et al., 2020). Ott et al. (2012) uses the term 'deceptive opinion spam', defined as "fictitious opinions that have been deliberately written to sound authentic, in order to deceive the reader". Hu et al. (2012) explains 'review manipulation' happens when a company's agents or other third-party monitors online reviews and posts untruthful reviews in order to increase their company's sales. Gössling, Hall, and Andersson (2018) add that the goal of such review manipulation could be either to influence one's own or the competitors' businesses. Other authors state that reviews are termed as 'fake' when they are not generated out of a post-purchase experience of the reviewer (Banarjee et al., 2015; Heydari et al., 2015). A similar definition by Hunt (2015) calls fake reviews as 'false, misleading and deceptive' reviews that does not contain the reviewer's authentic opinion. However, according to Wu et al. (2020), much of these earlier definitions fail

to include the fact that review-writers are oftentimes paid or otherwise rewarded to write the reviews; and even if the reviews reflect the authentic opinion of the reviewer, they do not accurately present the reviewed products/services. Consequently, their definition of such deceptive review is that, that those reviews mislead the consumers by not presenting the real evaluation of the product/service (Wu et al., 2020).

With so much mixed opinions on just the definition of deceptive OCRs, consumers are likely even more confused and potentially have varied opinions when it comes to their PDOCR and the cues of PDOCR. Our next section thus explores these issues based on previous literature, and provides the theoretical framework, hypotheses for the study, and the conceptual model.

3. Theoretical Framework and Model Development

3.1 Consumer's Perceived Deception in Online Consumer Reviews

Due to the rising prevalence of deceptive or fake online reviews and increasing media coverage of them, consumers are showing a lack of trust in OCRs. Consumers have become skeptical of online product reviews (Jiménez & Mendoza, 2013). Grazioli (2004) describes the Internet as a particularly fertile terrain for deception because it is an almost purely representational environment, i.e. an environment where decisions are made and actions are taken on the basis of representations of reality. In a survey of 1,013 US-based consumers in 2020, 80% of consumers believed that they have read a fake review in the last year, and 67% of consumers are suspicious of the authenticity of the reviews (Murphy, 2020). Even though consumers cannot generally distinguish fake from honest reviews, consumers are “smart” and they are aware of the manipulations done on online reviews and they adjust their attitudes and nominal values to compensate for that expected manipulation (Dellarocas, 2006; Mayzlin, 2006; Zhuang et al., 2018).

Intuitively, it seems that consumer's skepticism towards OCRs fall between two extremes: high on skepticism are the marketer-generated promotional messages, and low on are the traditional word-of-mouth from a consumer's social circle. Munzel (2016) states that consumers are not as skeptical and aware of deception in online reviews as they are in traditional marketing messages, and Chen (2016) posits that compared to the marketer, the reviewer has less or no incentive to lie. On the other side, information coming from other consumers have been found to be more influential than advertisements (Goldsmith & Horowitz, 2006), and adding to it, Yoo and colleagues (2009) states that online customer

reviews are perceived to be less trustworthy than traditional word-of-mouth. Hence, consumer's skepticism towards OCRs likely falls between these two extremes.

Consumers choose to either believe or disbelieve marketing messages based on their socialization and purchasing experiences (Sher & Lee, 2009) and on their discretion and intuition (Hu et al., 2012). In fact, one of the first steps a consumer generally delves into after getting an online product recommendation is to assess the trustworthiness of the information because most reviewers are anonymous who the consumers have never met and most possibly will never meet (Reimer & Benkenstein, 2016; Sher & Lee, 2009). The OCRs get even more dubious because humans in general are not able to accurately detect deception in OCR (Ott et al., 2011), the amount of manipulation in online reviews is not known, and even from research on this topic, there are no agreed-upon conceptual model to detect deceptive or fraudulent reviews (Hu et al, 2012).

This prevalent suspicion has encouraged a stream of research exploring consumers' perceived trustworthiness towards OCRs (Banerjee et al., 2017; Filieri, 2016; Munzel, 2016). Another important and emerging construct is 'perceived deception in OCR' or 'perceived fraudulent reviews' (Román et al., 2019; Hu et al., 2012). Román and colleagues (2019) highlighted the crucial role played by perceived deception in OCR (PDOCR) in forming consumers' OCR-related attitudes and actions and called for more research in this area. PDOCR is quite separate from actual deception, and it occurs when consumers *believe* that the seller has manipulated online information about a product, service, brand or company in order to influence consumers' attitude and behaviors that are unfavorable to the consumer and favorable to the seller (Román et al., 2019).

Studies in the area of PDOCR are few (Ansari & Gupta, 2021; Grazioli, 2014; Peng et al., 2016). Peng and colleagues (2016) states that fake online reviews are more systematic, complex and more disguised, and therefore harder to detect than traditional marketing or sales messages. Their study points to the following reasons (2016):

- The manipulators can remain anonymous and pose as real consumers, but since there are no face-to-face interactions, consumers only get limited cues for detection.
- In traditional marketing messages, the content or rhetorical style can be manipulated just one message at a time. But in online customer reviews, the entire review system containing the valence, volume, and distribution of content and ratings can be manipulated concurrently.
- Different tactics of manipulation can be applied, such as adding positive reviews, deleting or hiding negative ones, or incentivizing people to generate positive reviews, without any time constraints on the anonymous manipulator.

According to Peng and colleagues (2016), different tactics of review manipulations vary in terms of consumers' awareness and perceived deceptiveness towards them. Their study explores three types of deceptive practices: intentionally hiding or deleting unfavorable reviews, which was perceived to be the most deceptive and unethical and resulted in more negative purchase intention, followed by anonymously adding positive reviews, and finally, offering incentives to encourage positive reviews, which was considered more acceptable by consumers especially if they were disclosed (2016).

In order to explain consumer's information processing in the OCR context, and also specifically to study PDOCR, researchers have suggested the Elaboration Likelihood Model (ELM) by Petty and Cacioppo (1986) as an appropriate model (Cheung et al., 2012; Román et al., 2019; Thomas et al., 2019). The ELM provides a theoretical framework for understanding how people process messages that are intended to be persuasive, and researchers have adopted the ELM as a prominent and well-established model of informational influence in order to study user behavior in computer-mediated and online environments (Cheung et al., 2012). According to the ELM (Petty & Cacioppo, 1986), people process persuasive communication via two routes: 1) the central route processing (high level of elaboration) is used when consumers have high level of motivation and ability to process information, and 2) the peripheral route processing (low level of elaboration) is used when consumers have low motivation and ability to process a message's core argument and relevant information.

Literature indicates that the central route processes the main content/text of the review, and engages in greater attention and scrutiny of the message's core arguments and result in higher possibility of deception detection by the consumers; Whereas the peripheral route processes associated text and reviewer attributes, and resort to using heuristics (i.e. cognitive shortcuts) (Cheung et al., 2012; Park & Lee 2008), and result in a higher tendency to believe in false or misleading information and make consumers more prone to perceive deception in online reviews (Román et al., 2019). Nowadays, as consumers are bombarded with online reviews, the sheer volume of online peer reviews often leads consumers to process information heuristically (Ludwig et al., 2013). Especially for experience goods, peripheral cues

in OCRs play a significant role in review helpfulness and information adoption (Baek et al., 2012).

In order to answer our research questions, we look at three such peripheral cues of OCRs: Picture (of the reviewed product), Emotional Expressions, and Incongruent Valence, that might influence consumers to perceive deception in OCRs. Furthermore, we consider the moderating effect of incongruent valence between Picture and Emotional Expressions, and PDOCR.

3.2 Incongruent Valence of OCRs

This paper studies the effect of incongruence between average reviews and individual review because such an incongruent condition, where an individual review valence is different from the average review valence, is likely to trigger the readers to perceive deception in OCR. Congruent information, which is expressed through the similarity of an evaluation with the average rating on the review site (Benedictus et al., 2010), is a potential cue to readers of online reviews for evaluating the trustworthiness of the source and has already received attention from marketing research (Munzel, 2016). Jiménez and Mendoza (2013) refers to it as 'reviewer agreement' which is the degree of perceived agreement among reviewers regarding the evaluation of a product

OCRs typically present indicators of consensus among reviewers such as when the average number of stars and/or average numerical rating is similar as an individual reviewer's comments, star rating and/or numerical rating on the same product/service. Thus, an incongruent situation would be when the individual review and/or rating is different from the

average. In this study, we study the effect of incongruent valence (positive vs negative) on PDOCR.

Review congruency or consistency has been defined as the extent to which information in a review is consistent with information in other reviews (Cheung et al., 2012). Román et al. (2019) suggests that people may perceive a message to be more believable if the same information are posted by different reviewers, and consistency across different platforms reduces PDOCR. But interestingly, when talking about review consistency within the same website, interviewees voiced mixed opinions: some people expressed that they trust reviews on websites that have a diverse sample of both positive and negative reviews, and others stated that they would be skeptical if there are both positive and negative reviews within the same website (Román et al., 2019).

This discrepancy is worth studying because when searching for advice, consumers frequently encounter contradictory online reviews in terms of valence of opinion (López-López & Parra, 2016). An example of such a situation would be where a single, individual review has positive comments, positive valence, 4.5/5 star-rating, but the average rating is 1.5/5 which would make the average valence negative. Such situations create information incongruity (López-López & Parra, 2016), and people generally have a tendency to dislike incongruity or imbalance and are driven to resolve the incongruity (Aaker & Sengupta, 2000).

According to the Cognitive Dissonance theory (CDT) (Festinger, 1957), people strive for consistencies within themselves, and when they experience inconsistencies, or dissonance, people feel psychological discomfort; consequently, people alter their beliefs, attitudes or

behaviors in order to reduce the dissonance and restore balance. Gillespie and colleagues (2016) studies consumers' perceived deception and states that when people's initial perceptions and expectations are not the same, they feel dissonance and this leads to perceived deception. Hence, when consumers are exposed to inconsistent information, they fell dissonance and perceive deception because their expectations and perceptions do not match, and consequently, they are motivated to change their beliefs or attitudes to resolve the dissonance (Gillespie et al., 2016).

In the popular literature on interpersonal influence and persuasion, Cialdini (2007) refers to congruent information as a social proof which has powerful impact on persuasion and influence attempts. Research showed the importance of congruency between review text and the star rating or average star rating (Aghakhani et al., 2020; Baek et al.,2012; Mudambi et al., 2014). Congruent information provides a broad cue that conveys trustworthiness and leads to greater purchase intentions (Benedicktus et. al., 2010). Congruent information acts as a significant cue to assist consumers to detect potential fake reviews, and high congruency among the OCRs leads to increased trustworthiness towards the source (Munzel, 2016). Specifically, since OCRs on experience goods tend to be idiosyncratic, consumers evaluating experience products focus on reviewer agreement or congruent information, rather than detailed information about a single reviewer's experience or information, thus congruent information affects credibility of the review and purchase intention for experience goods (Jiménez & Mendoza, 2013). Thus, past research suggests that an incongruent condition is likely to be perceived as more deceptive.

Since congruent information is an important cue affecting review credibility and trustworthiness, and ultimately acting as a cue to detect deception in OCR, it is likely that when there is incongruence, the perceived deception will be more than when there is congruence. Thus, this paper studies the effect of incongruent situation and its effect on PDOCR and purchase intention.

Specifically, two incongruent conditions are explored here: positive incongruent and negative incongruent. Positive incongruent occurs when an individual review about a product/service has positive valence but the average valence is negative; and negative incongruent occurs when an individual review has negative valence but the average valence is positive.

In terms of valence, consumers tend to pay more attention to negative reviews (Yang & Mai, 2010) and negative OCRs have a more powerful impact on product attitude than positive ones (Lee et al., 2008). Negative information is highly diagnostic (Skowronski & Carlston, 1989), even in OCR context (Lee et al., 2008). Low, 1-star reviews are more influential than 5-star reviews (Chevalier and Mayzelin, 2006), signaling a negativity bias (Cui, Lui & Guo, 2012). This negativity effect appears to be more significant when the online review is for experience goods rather than for search goods (Park & Lee, 2009).

OCRs have a consumer perspective and they help consumers by telling them the truth about the product, their motive is not to persuade consumers as is the motive of marketers (Kim et al., 2018; Lee et al., 2008; Schlosser, 2011). Nonetheless, consumers are also suspicious about the authenticity of online reviews and are likely to be risk-averse (Qiu et al., 2012). Too much positive information causes the reader to doubt the reviewer's motives (Schindler &

Bickart, 2012). Positive reviews reduce diagnosticity and credibility in the presence of a conflicting aggregated rating (Qui et al., 2012).

Taking the effects brought about by incongruence and review valence into consideration, we posit that negative incongruent reviews will be perceived to be less deceptive than positive incongruent ones.

H1: PDOCR is higher (lower) for positive incongruent (negative incongruent) review

This paper studies the effect of picture and emotional expressions, and these two cues in OCRs are expected to have different effect on PDOCR based on whether the review is negative incongruent or positive incongruent. Thus we posit that review incongruence (positive vs negative) will moderate the effect of picture and emotional expression on PDOCR, which we discuss in the next sections.

3.3 Pictures of the Reviewed Product as a Peripheral Cue

Nowadays, it is quite common to find OCRs containing not only textual information but also picture, video, or animation related to the reviewed product. Such features could be important cues affecting consumers' PDOCR. However, there are scarce studies on the effect of pictures in online reviews (Lu & Bai, 2021). Peng and colleagues (2016) suggests that accessibility of cues determines the extent to which suspicion is aroused. Lee and Shin (2014) states that vivid visual cue may arouse greater interest in the associated review and motivate otherwise uninterested consumers to read it more closely. Thus, the presence of picture in OCR will likely affect PDOCR and purchase intention.

Hlee and peers (2016) used the Elaboration Likelihood Model to study the effect of text-based and image-based reviews on review usefulness using 2629 restaurant reviews on Yelp, and they posit that text-based reviews act as central cues where persuasion is derived through text, whereas image-based reviews act as peripheral cues where responses occur from the attractiveness of the source or environment characteristics. Their study finds that both text-based reviews and image-based reviews are significant predictors of the perception of review evaluation, and especially for the hospitality sector, the image-based review (especially images of physical environment, food and beverage) reinforce consumer perception (Hlee et. al., 2016). In the subsequent study, the authors further find that in online restaurant review setting, food and beverage images can evoke not only cognitive but also affective responses, and influence review usefulness which is mediated by review enjoyment (Hlee et al., 2016). Moreover, the combination of textual and imagery cues is likely to have a stronger effect on online restaurant reviews usefulness (Hlee et. al., 2017)

In computer-mediated environments, such as the Internet, pictures add tangible cues and elicits positive evaluations of the service and the website, and subsequently evoke more positive attitudes and purchasing intentions (Koernig, 2003; Lin et al., 2009). The word-picture hybrid review format is perceived to be more helpful than word-only review format because hybrid reviews convey more information by adding images (Wu et. al., 2021). Hence we hypothesize that:

H2: Review with picture (vs review without picture) a) decreases PDOCR and b) increases purchase intention

The pictures themselves function as information cues with diagnostic values to evaluate the products in decision-making (Wu et. al., 2021). Additionally, the valence of the reviews can influence the effect of pictures on PDOCR, and we expect that in addition to the main effect, the valence of the review will have a moderating role in the effect of pictures on PDOCR. In a research on online consumer reviews on hotels, Nazlan et al. (2018) finds that pictures on restaurant reviews increase the likelihood to choose a positively reviewed menu item but do not influence likelihood to choose a negatively reviewed item. Specifically, for restaurant reviews, presenting a picture of the food item should increase the consumers' attraction to the restaurant under review and make a positive review more positive and consequently, less deceptive. On the other hand, a negative review with a picture may cast doubt on the review as the picture reduces the negative impact of the review, and consequently readers could find the negative review more deceptive.

Taking into account these previous studies, we posit that picture (present vs absent) will have a differential effect between incongruent review valence (positive vs negative) on PDOCR, and people will perceive less deception when picture accompanies a positive incongruent review than when picture accompanies a negative incongruent review. Thus we hypothesize that:

H3: Incongruent review valence moderates the relation between picture and PDOCR, such that PDOCR is lower for reviews with picture in positive incongruent condition than in negative incongruent condition.

3.4 Emotional Expressions

Emotional expression (EE) is added in OCRs using exclamation marks, capital letters, bolded letters, emoticons, and/or a phrase that describes the reviewer's internal emotional state (Kim & Gupta, 2012). Ullah and colleagues (2016) mention that emotions play an important role in consumer response, thus it is important to examine the emotional content in product reviews to better understand the idiosyncrasies of online WOM communications. Distinct types of emotional content in a review evoke distinct perceptions among readers (Yin et al., 2014). Baker and Kim (2019) stresses on the importance of examining emotions as a distinct dimension of exaggerated eWOM because a review can have similar valence but different emotionality. In virtual communities, social cues about the information source are less accessible or less salient, hence, people can make evaluations based on stylistic features of messages (Li & Zhan, 2011). Furthermore, examining the specific language and emotionality used in OCRs are most critical for online deceptive reviews (Baker & Kim ,2019). Salehan and Kim (2015) posits that consumers might consider emotional content to be less rational, hence emotion in OCRs may be an important cue for perceived deception.

Past research suggests that, since online reviews lack personal ties or physical proximity between the sender and receiver, emotions in reviews are unlikely to influence consumers' product evaluations through affective reactions, instead they influence consumers cognitively (Kim & Gupta, 2012). Sentiments that express reviewer emotions influence consumers' cognitive brand evaluation and evaluation of online reviews (Agnihotri & Bhattacharya, 2016). Emotional expressions are likely to be more salient than written comments that are in plain font and style, hence emotional expressions are likely to act as peripheral cues and consumers

take cognitive shortcuts according to the ELM in order to evaluate OCRs containing emotional expressions.

Nowadays consumers are wary of fraudulent reviews, thus too much sentimental tone in online reviews, be it positive or negative, raises suspicion regarding the authenticity of the reviews beyond a certain point (Agnihotri & Bhattacharya, 2016). As a consequence, Agnihotri and Bhattacharya (2016) found that sentimental tones in reviews have a diminishing utility, and the helpfulness of an online review for consumers decrease after a certain ideal point. However positive and negative valence will likely have different effects on emotionality, so it is important to consider valence and emotionality separately (Baker & Kim, 2019).

Various research studied the effect of review valence on emotional expression in OCR and found different moderators affecting the outcome variables. Negative (vs. positive) emotions have a more powerful influence on decision-making (Ludwig et al., 2013). Studies examining the effect of negatively valenced emotional expressions on review helpfulness demonstrate that emotional content matters (Folse et al., 2016). Kim and Gupta (2012) studies the effect of emotional expressions in online user reviews, such as bold, capital letters, a phrase describing the reviewer's internal emotional state, and emoticons on product evaluation and review helpfulness. Their study finds that use of negative emotions in a single negative review may be considered as irrational by the consumers, thus negative emotions decrease informative value and decrease negative impact on product evaluations, whereas positive emotions in a review do not influence consumers' product evaluations significantly even though consumers attribute the positive emotions to the product (Kim and Gupta, 2012). Emotional expression in negatively valenced reviews are attributed to the source instead of the product

itself, and emotional expressions used by novice reviewers (vs. expert reviewers) were considered less rational, less trustworthy, and were less acceptable by consumers (Folse et al., 2016). Finally, emotional content in negative WOM lowers the credibility of male reviewers and the helpfulness of their reviews, but does not affect reviews of female reviewers (Craciun & Moore, 2019).

Furthermore, emotions of the same valence can have different effects on the outcome variable (Ahmad & Laroche, 2015). The use of emotions in written OCRs has been found to adversely affect perceptions of trustworthiness (Baker & Kim, 2019), particularly emotion is perceived as untrustworthy when the OCR was accompanied by extreme ratings (Filiari, 2016). Therefore, ratings and valence both affect emotional expressions. However, no research has studied the effect of emotions on positively and negatively incongruent reviews. Hence, owing to the differential effects of emotional expression found in previous research, it is worth examining how the use of emotional expression will affect consumers' perception of deception and what are the relevant moderators.

Taking the above-mentioned literature into consideration, we posit that review with EE will affect PDOCR and behavioral intention more than review without EE. Furthermore, we posit that the effect of EE (present vs absent) on PDOCR will have differential effect among positive incongruent vs negative incongruent valences

H4: Review with EE (vs review without EE) a) increases PDOCR and b) decreases purchase intention.

H5: Incongruent review valence moderates the relation between EE and PDOCR, such that PDOCR is higher for reviews with EE in positive incongruent condition than in negative incongruent condition.

3.5 PDOCR as a mediator between Peripheral Cues and Purchase Intention

OCRs have traditionally been a source of positive influence on consumers' purchase intention, but due to rising prevalence of deceptive practices in OCR and followed by consumers' increasing awareness of and skepticism towards them, it has become critically important to understand the effect of PDOCR on purchase intention. Even though there are deception detection tools and algorithms, they do not offset a customers' perceived deception towards OCRs and customers always question the authenticity of the reviews presented to them (Ansari & Gupta, 2021).

Qualitative research on PDOCR indicated that consumers would not purchase again from a website retailer if they realized that the reviews had been manipulated (Roman et al., 2019). In a study on distrust toward online hotel reviews, Ahmad and Sun (2018) find that consumer-provoked distrust creates psychological discomfort among consumers. Increased distrust and psychological discomfort weaken consumers' purchase intention (Wu et al., 2020). Untrustworthy reviews fall out of consumers' information set for decision-making, thus even though consumer generated reviews are powerful tools that influence purchase decisions, the trustworthiness of the reviews is considered to be a crucial factor in deciding whether a particular review has influence on the consumers (Filiari, 2016). PDOCR can be seen as construct opposite to trustworthiness towards OCRs, thus the effect of PDOCR on purchase

intention likely will have a similar yet opposite effect. Closely related to our study, Munzel studies deception cues in online consumer reviews on restaurants, and finds that source trustworthiness mediates the effects of various deception detection cues on purchase intention (2016).

Peng and colleagues (2016) are among the few studies we could find that directly tests the effect of PDOCR on purchase intention. They find that different types of deceptive reviews are perceived differently by consumers in terms of their deceptiveness and unethicity; The effect on purchase intention is most severe when deleting/hiding negative reviews, followed by adding fake positive reviews and incentivized reviews (Peng et al., 2016). Interestingly, Zhuang et al., (2018) finds that while manipulations in OCR increase purchase intention, consumers' suspicion negatively mediates the effect of manipulation on purchase intention for posting fake positive reviews, but not for deleting negative reviews because deleting negative reviews leaves fewer cues and is harder to detect; thus suggesting that perceived deception (in comparison to actual deception) influences purchase decision in a different way and is an important variable worth looking into. Therefore, in our study, our mediator variable is the PDOCR and the dependent variable is purchase intention.

H6: Perceived deception acts as a mediator between a) Picture and Purchase Intention and b) EE and Purchase intention

3.6 Hofstede's Cultural Variables

Culture is defined as "the collective programming of the mind distinguishing the members of one group or category of people from others" (Hofstede, 1984, p.21). Culture is

“the single most important factor that influences international marketing on the internet” (Samiee, 1998) and a “key element in shaping customer responses to traditional and online store atmospherics” (Shobeiri et al., 2018). Culture is a prime determinant of consumers' attitudes, behaviors and lifestyles (Cleveland & Laroche, 2007) and a crucial factor in explaining consumer behavior disparities across countries (Cleveland et al., 2016)

Nowadays consumers are interacting on a global platform via online reviews, and consumers, reviewers, and even the manipulators are from different countries and cultures. Amid this constant global interaction between people from different cultures, there is increasing cases of deceptive online reviews and subsequent increase in consumer's skepticism towards OCRs. Adding to this complexity is the fact that people's value systems differ from one culture to another (Wang et al., 2019) and different cultures express emotions differently (Salehan & Kim, 2016). People's perception of deception varies widely across cultures and not all manipulated message are perceived as equally deceptive due to people's cultural differences (Seiter et al., 2002; Zourrig et al., 2021). Different views of deception may increase the potential for misunderstanding, mistrust, and ill will, and therefore, cross-cultural examination of deceptive message design is needed (Yeung et al., 1999). People's perception and cognition depend on information that is sampled from the environment and cultures develop the conventions about what to pay attention to and how much to weigh the elements that are sampled (Triandis, 2001). Thus, it is of great importance that we understand how perceptions of deception in online consumer reviews differ due to differences in cultural values.

This study will apply Geert Hofstede's groundbreaking study on the 6 dimensions of culture (Hofstede 1984, 2001, 2011; Hofstede, Hofstede & Minkov, 2010) in order to

understand how culture affects PDOCR. The six dimensions of culture are:

Individualism/Collectivism, Power Distance, Uncertainty Avoidance, Masculinity/Femininity, Long-term/Short-term Orientation, and Indulgence/Restraint (Hofstede et al., 2010).

Even though Hofstede's framework originally measured culture on a national-level (1984), many researchers posit that Hofstede's cultural dimensions can be applied at an individual-level to explain individual cognitions and behaviors (Luo et al., 2014; Oyserman et al., 2002). Lim and colleagues (2004) states that societal culture manifests itself as values, attitudes, scripts, and norms within individuals, which shape their cognitions, affect, and motivation. Likewise, due to increased globalization, consumers' homogeneity within-countries has reduced but homogeneity between-countries has increased, and thus, there is call for market research basing 'individuals' as the cultural unit of analysis (Cleveland & Laroche, 2007). Thus our research will focus on individual dimensions of culture based on Hofstede's six dimensions.

3.6.1 Individualism/ Collectivism. Individualism is the extent to which people feel independent, as opposed to being interdependent as members of larger wholes (Geert Hofstede, n.d.). In individualist cultures, the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family, and in collectivist cultures from birth onwards are integrated into strong, cohesive in-groups, often extended families that continue protecting them in exchange for unquestioning loyalty, and oppose other in-groups (Hofstede, 2011).

Individualism/Collectivism has been termed as the most significant cultural difference among cultures (Triandis, 2001). Past research state that due to cultural differences related to

the individualism-collectivism, what counts as deception most likely differs across cultures (Yeung et al., 1999). Collectivist countries tended to show higher levels of conformity than individualist countries, and thus, individuals from collectivist cultures should be more likely to yield to the majority, given the higher value placed on harmony in person-to-group relations (Bond & Smith, 1996). Yeung et al. (1999) states that collectivist people have a strong tendency to act according to what is expected of them and they tend to give responses that fulfill the social expectations of others, even if those responses are considered deceptive by Western (individualistic) standards. Furthermore, De Mooij and Hofstede (2010) mention that individualists are less influenced by 'social pressure' and refer to their own personal attitudes to form buying decisions, but collectivists tend to 'live up to the standards'. People from individualistic cultures tend to be more vocal and expressive whereas those from collectivist cultures tend to suppress or withhold their emotions while communicating with others (Hong et al., 2016).

Due to their tendency to conform, collectivist people (vs. individualistic people) are expected to be more tolerant towards incongruent valence conditions, and therefore, perceive less deception in OCR. Contrarily, as individualists are strong about their own standards and are less likely to conform to others' opinions, individualists are expected to have more doubts about the authenticity of reviews in incongruent valence conditions and thus, to have higher PDOCR. Thus for our two independent variables, "Picture" and "Emotional Expression", we hypothesize that:

H7: Collectivism/Individualism has a moderating effect on incongruent valence, such that PDOCR is stronger for Collectivists (vs Individualists) for: a) 'Picture' condition b) 'Emotional Expression' condition

3.6.2 Power Distance. Power distance is the first of Hofstede's model of six dimensions of cultural variability about values and related sentiments based on his quantitative survey on IBM employees around the world (1980). Power Distance refers to the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally, and that a society's level of inequality is endorsed by the followers as much as by the leaders (Hofstede, 2011). In high power distance (HPD) cultures "hierarchy means existential inequality and subordinates expect to be told what to do" whereas in low power distance (LPD) cultures "hierarchy means inequality of roles established for convenience and subordinates expect to be consulted" (Hofstede, 2011) and thus, individuals from HPD cultures generally accept inequalities (Gao et al., 2018). LPD consumers believe in equality in society and the opinion of all individuals to be considered for decision-making, hence, negative WOM and positive WOM have a greater impact on their expectations and the change from negative to positive is much more significant for low power distance consumers (Nath et al., 2018). Thus we can expect that individuals in LPD cultures will perceive more deception in both positive and negative incongruent reviews. Whereas individuals from low power distance have high service expectations and expect reliable and responsive service, individuals from HPD are more tolerant of and familiar with inequalities in power and have low expectations of service quality (Donthu & Yoo, 1998). Thus we expect that individuals from HPD

cultures will be tolerant of incongruent review conditions and perceive less deception in both positive and negative incongruent reviews.

Thus for our two independent variables, “Picture” and “Emotional Expression”, we hypothesize that:

H8: Power distance has a moderating effect on incongruent valence, such that PDOCR is stronger for LPD (vs HPD) individuals for: a) ‘Picture’ condition b) ‘Emotional Expression’ condition

3.6.3 Uncertainty Avoidance. Uncertainty avoidance (UA) deals with a society’s tolerance for uncertainty and ambiguity (Geert Hofstede, n.d.). Hofstede (2011) describes uncertainty avoidance as follows: “It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, and different from usual. UA cultures try to minimize the possibility of such situations by strict behavioral codes, laws and rules, disapproval of deviant opinions, and a belief in absolute Truth”. Hofstede further states that weak UA cultures are comfortable with ambiguity and chaos, whereas strong UA cultures need clarity and structure (2011).

Lam and colleagues (2009) states that by their very nature, UA cultures tend to stick to established group-approved behavioral patterns, they are less confrontational, and seek group consensus when making decisions. They try to maintain harmony and status within their in-group, and in order to avoid giving product recommendations that may dampen a relationship, people with strong UA may simply reduce their in-group WOM (Lam et al., 2009). Lim and

colleagues (2004) studies internet shopping, where they posit that since internet shopping inherently involves more uncertainties than shopping in traditional physical stores, and represents a total change in shopping habit and lifestyle, it is reasonable to expect that people in strong UA cultures are more likely to resist buying online than people in low UA cultures. Li et al., (2013) finds that online review that is concrete and has low-level of content abstractness is perceived as more helpful than an abstract review. Filieri and Mariani (2021) adds that reviewers from countries with weak UA levels are willing to accept a higher degree of ambiguity and risk.

Another characteristic of the UA dimension is that weak UA culture has tolerance towards deviant persons and ideas: “what is different is curious”, whereas strong UA culture has intolerance towards deviant persons and ideas: “what is different is dangerous” (Hofstede, 2011). Thus, incongruent conditions in OCRs within the same website is more ambiguous, and review incongruency is expected to have stronger effect on PDOCR for strong UA (vs. weak UA individuals). Therefore, for our two independent variables, “Picture” and “Emotional Expression”, we hypothesize that:

H9: Uncertainty avoidance has a moderating effect on incongruent valence, such that PDOCR is stronger for strong UA (vs weak UA) individuals for: a) ‘Picture’ condition b) ‘Emotional Expression’ condition.

3.6.4 Masculinity/Femininity. The masculinity-femininity dimension refers to the distribution of values between the genders (Geert Hofstede, n.d.). The dominant values in a masculine society are achievement and success, and achievement must be demonstrated; the

dominant values in a feminine society are caring for others and quality' of life (De Mooij & Hofstede, 2010).

Schumann et al., (2010) mentions that feminine cultures share norms for solidarity, service, and cooperative behavior and harmonious relationships, and feelings are more openly expressed, contrarily, masculine cultures share norms for confrontation and independent thought and actions that are directed at the individual benefit and well-being. Filieri and Mariani (2021) adds that when considering online consumers, it would be expected that individuals from highly masculine cultures would be less prone to cooperate and be more vocal in expressing their disappointments, whereas, individuals from feminine societies may tend to provide an accommodative answer to a service failure and will tend to soften their opinion. Therefore, it is likely that masculinity culture individuals will tend to be more acceptable of incongruent review valence and have lesser negative perception. On the other hand, feminine culture individuals will be feel more dissonance towards incongruent review valence and perceive more deception. Thus for our two independent variables, "Picture" and "Emotional Expression", we hypothesize that:

H10: Masculinity/Femininity has a moderating effect on incongruent valence, such that PDOCR is stronger for Feminine culture (vs Masculine culture) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.

3.6.5 Long-Term/Short-Term Orientation. According to Hofstede, "In a long-time-oriented culture, the basic notion about the world is that it is in flux, and preparing for the future is always needed. In a short-time-oriented culture, the world is essentially as it was

created, so that the past provides a moral compass, and adhering to it is morally good” (Geert Hofstede, n.d.). Values included in long-term orientation (LTO) are perseverance, ordering relationships by status, thrift, and having a sense of shame, contrarily, short-term orientation (STO) includes personal steadiness and stability, and respect for tradition (De Mooij & Hofstede, 2010). Donthu and Yoo (1998) mentions that the long-term vs short-term dimension can be viewed as Eastern versus Western respectively, dynamic versus static, virtue versus truth. LTO accept multiple truths where no fact of object is absolutely right or wrong (Donthu & Yoo, 1998). Therefore, LTO customers tolerate unclear or false situations (Donthu & Yoo, 1998). Consequently, it seems that individuals with STO culture would feel more dissonance towards incongruent review conditions compared to LTO individuals. Furthermore, Filieri and Mariani (2021) provides an interesting perspective from the review writers’ side, stating that reviewers from LTO cultures view their relationship with the service provider (i.e. seller/manufacturer) in the long run, therefore, they would probably tend to comment more on how the service provider could improve the service, consequently reviews by LTO will be more neutral and balanced. This hints that LTO may provide reviews that are not consistently positive or negative, but are neutral and/or mixed-valence reviews. Extrapolating this to the side of the review reader, LTO consumer probably will feel less dissonance towards incongruence in review valence. Thus for our two independent variables, “Picture” and “Emotional Expression”, we hypothesize that:

H11: LTO/STO culture individuals has a moderating effect on incongruent valence, such PDOCR is stronger for STO (vs LTO) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.

3.6.6 Indulgence/Restraint. The sixth and last dimension, indulgence versus restraint, was added by Hofstede and Minkov in 2010, and is more or less complementary to, and weakly negatively correlated to LTO versus STO dimension (Hofstede, 2011). Indulgence society allows relatively free gratification of basic and natural human desires related to enjoying life and having fun, whereas restraint society controls gratification of needs and regulates it by means of strict social norms (Hofstede, 2011).

Furthermore, indulgent cultures are more likely to remember positive emotions and restraint cultures are less likely to remember positive emotions (Hofstede, 2011). Societies whose cultures impose more severe restrictions on the enjoyment of life—in terms of indulgence in leisure, fun, and spending—have lower percentages of happy people (Minkov, 2009). Guo and colleagues (2018) finds that indulgent societies have more pro-social behavior than restraint societies, largely because indulgent societies have more positive emotions and restrain cultures have relatively stronger negative emotions. Additionally, freedom of speech, emotional expression, and happiness are encouraged in indulgent societies (Hofstede et al., 2010). Consequently, reviewers from these cultures would be less inhibited in expressing their own ideas and views as they do not feel restrained by societal norms, and they will be more inclined to openly express their true opinions, either be extremely good or bad and that their opinions will be perceived as closer to the service experience (Filieri & Mariani, 2021). Furthermore, low self-restraints and low self-judgments are associated with high impulsive

buying behavior, and indulgence are positively associated with the consumers' reliance on online review ratings (Kim, 2019). Thus, it seems that indulgent cultures will be more acceptable when OCRs have diverse opinions with incongruent valence, whereas, restraint cultures will not be as acceptable of them and may perceive more deception when such incongruent review valence are present in OCRs. Thus for our two independent variables, "Picture" and "Emotional Expression", we hypothesize that:

H12: Indulgence/Restraint has a moderating effect on incongruent valence such that PDOCR is stronger for Restraint (vs Indulgent) culture individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.

Therefore, the theoretical model is depicted in Figure 2, and the 12 hypotheses of this study are presented in Table 1.

Figure 2: Conceptual Model

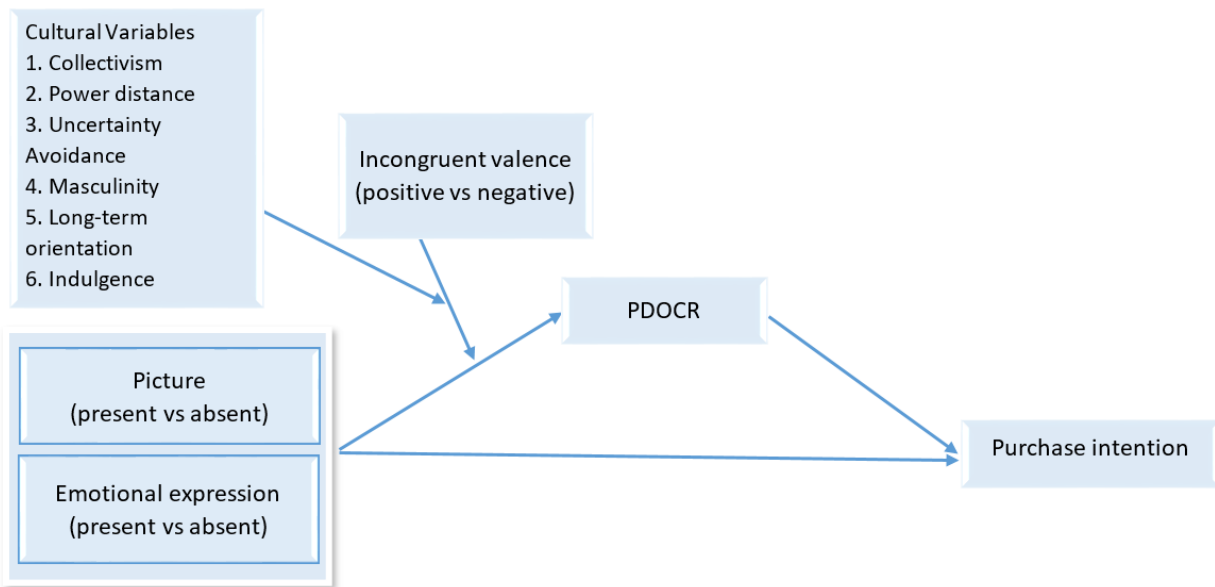


Table 1: Summary of Hypotheses

H1	PDOCR is higher (lower) for positive incongruent (negative incongruent) review
H2	Review with picture (vs review without picture) a) decreases PDOCR, and b) increases purchase intention
H3	Incongruent review valence moderates the relation between picture and PDOCR, such that PDOCR is lower for reviews with picture in positive incongruent condition than in negative incongruent condition
H4	Review with EE (vs review without EE) a) increases PDOCR, and b) decreases purchase intention.
H5	Incongruent review valence moderates the relation between EE and PDOCR, such that PDOCR is higher for reviews with EE in positive incongruent condition than in negative incongruent condition.
H6	Perceived deception acts as a mediator between a) Picture and Purchase Intention, and b) EE and Purchase intention
H7	Collectivism/Individualism has a moderating effect on incongruent valence, such that PDOCR has a stronger effect for Collectivists (vs Individualists) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.
H8	Power distance has a moderating effect on incongruent valence, such that PDOCR has a stronger effect for LPD (vs HPD) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition..
H9	Uncertainty avoidance has a moderating effect on incongruent valence, such that PDOCR has a stronger effect for strong UA (vs weak UA) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.
H10	Masculinity/Femininity has a moderating effect on incongruent valence, such that PDOCR has a stronger effect for Feminine culture (vs Masculine culture) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.

H11	LTO/STO culture individuals has a moderating effect on incongruent valence, such that for PDOCR has a stronger effect for STO (vs LTO) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.
H12	Indulgence/Restraint has a moderating effect on incongruent valence such that PDOCR has a stronger effect for Restraint (vs Indulgent) culture individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.

4. Methodology

4.1 Sampling and Data Collection

We conducted the study using online self-reported survey by randomly recruiting prospective participants from Amazon Mechanical Turk, who participated for a compensation. The data was collected in three stages, because many participants either failed the attention check questions or had missing values, so we collected data until there were at least 30 respondents for each of the 8 conditions (Cohen, 1992). After the first round of data collection, in the subsequent rounds previous survey respondents were excluded so that they could not retake the survey. Finally, we had survey data from 251 respondents, among them 41.6 % female and 58.4% male, and all at least over 18 years of age, that were included in the data analysis. The full demographics of the respondents are presented in Appendix B.

Participants were asked a screening question on their frequency of reading OCRs, and participants that replied “never” or “rarely” were screened out. Participants were also required to agree to the terms and conditions of the Informed Consent form. The study used a between-subjects design consisting of 8 groups to test each of the eight conditions (2 X 2 X 2), testing the effects of Picture (present vs absent) x Emotional expression (EE) (present vs absent) x Incongruent valence (positive vs negative). The 12 hypotheses including the mediation and moderation effects were tested to find their effects on PDOCR and behavioral intention. At the end of the survey, subjects completed a set of demographic questions.

It should be noted that there was another round of data collection that was conducted before this one, on 300 participants. However, there were some flaws in the questionnaire for

that survey, and we have not used the data collected at that time. The data used in this study was collected after the necessary corrections were made to the questionnaire. Moreover, homophily was initially considered as another IV for the study, but after data collection, we found some flaws in the questionnaire for testing Homophily, so we have excluded that measure from the analysis.

4.2 Stimuli selection

We use the context of OCRs on restaurants, which is an experiential product, because online product reviews for experience products are significantly more influential, more important and are used more often by consumers compared to search products (Bei et al., 2004; Senecal & Nantel, 2004). OCRs on restaurants have a significant effect on consumer's food choice decision making which gives restaurateurs strong incentives to leave fake reviews (Anderson & Magruder, 2012). Study has found that a one-star increase in Yelp restaurant reviews led to 5-9% increase in revenue of independent restaurants, and even an extra half-star rating on Yelp causes restaurants to sell out 19 percentage points more frequently (Luca, 2011).

Participants were randomly selected for one of the 8 hypothetical OCR scenarios to test the effects of Picture (present vs absent) x EE (present vs absent) x Incongruent valence (positive vs negative). Each participant was presented with only one of the 8 conditions. The 8 conditions were: 1) Picture present, EE absent, in positive incongruent review 2) Picture present, EE absent, in negative incongruent review 3) EE present, picture absent, in positive incongruent review 4) EE present, picture absent, in negative incongruent review 5) Both picture and EE present in positive incongruent review 6) Both picture and EE present in

negative incongruent review 7) Neither picture nor EE present in positive incongruent review 8)
Neither picture nor EE present in negative incongruent review.

The full questionnaire can be found in Appendix C.

4.3 Measurements

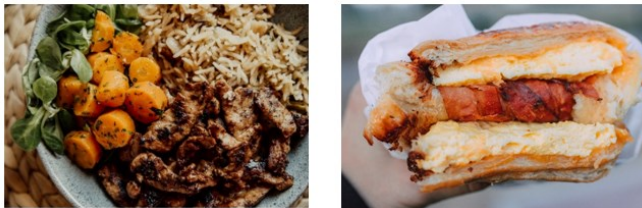
A minimum sample size of 30 is required to detect a medium-sized effect with power of 0.80 (Cohen, 1992). Existing scales from the literature was adapted to conduct the study wherever possible, and respondents were asked to express their responses on 7-point Likert scales where '1' represented strongly disagree and '7' represented strongly agree. The variables were tested on multiple-item scales, and either the mean values or dummy variables based on the mean value were used in the analysis.

After the participants provided their agreement to the Informed Consent and passed the screening question, the main survey questions were presented. In the main questionnaire, first some general questions on online consumer review behavior was measured, followed by questions to test the variables (Picture, Emotional expression, Incongruent valence, Perception of Deception, Purchase Intention, Cultural Values). For the variables Picture (present vs absent), Emotional Expression (present vs absent), and Incongruent valence (positive vs negative), the participants were randomly selected to participate in one of the 8 conditions, where each participant was presented with only one of the 8 conditions. The survey ended with the demographic values questions.

The variables were measured as follows:

Picture: Two pictures of food items were used, and the same two pictures were presented in both the positively incongruent and negatively incongruent valence conditions. The pictures are presented in figure 3.

Figure 3: Picture used in questionnaire for the "Picture present" condition



Emotional expressions: Emotional expression was manipulated using bold letters, capitalized letters, emojis, exclamation marks, and emotional words (excellent/terrible, flavorful/flavorless, tasty/bland, satisfying/un-satisfying, highly recommended/not recommended at all, etc.), adapting from Kim and Gupta (2012).

An example of a review from the positive incongruent condition is: “Overall, an ABSOLUTELY SATISFYING EXPERIENCE. This was my first time here and **I AM COMING BACK FOR SURE!** 😊😊😊”

An example of a review from the negative incongruent condition is: “Overall, an ABSOLUTELY UN-SATISFYING EXPERIENCE. This was my first time here but **I DON’T SEE MYSELF COMING HERE AGAIN!!** 😞😞😞”.

Incongruent Valence: Positive incongruent review is a positive review that counters a negative review, negative incongruent review is a negative review that counters a positive review (Kusumasondjaja et al., 2012). We adapted the low-consensus situation as in Munzel (2016) and designed the positive incongruent situation where the main review has a positive

tone and wording, and rating of 5/5 stars, and the average rating is 1.5/5. Using a similar but opposite format, the negative incongruent situation had a negative tone and wordings, and rating of 1/5, where the average rating is 4.5/5.

An excerpt of the review text used for the positive situation is: “Highly recommended! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were excellent”. An excerpt of the review text used for the negative situation is: “Not recommended at all! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were terrible”.

Perceived Deception: PDOCR was measured on a three-item semantic differential scale with seven-point response options adapted from Grazioli and Jarvenpaa (2000). Participants were asked to indicate to what extent they thought that the online consumer reviews in a website is “accurate” vs. “misleading”, “truthful” vs. “deceptive”, and “factual” vs. “distorted”.

Purchase Intention: Purchase intention was measured on a three-item, seven-point, bipolar scale labeled with strongly disagree to strongly agree, adapted from Dodds et al., (1991).

Hofstede’s Cultural Values: The six dimensions of Hofstede’s Cultural Values has 2 extremes for each: collectivism vs individualism; strong uncertainty avoidance vs weak uncertainty avoidance; high power distance vs low power distance; masculinity vs femininity; long-term orientation vs short-term orientation; and indulgence vs restraint. Hofstede’s six Cultural Values were measured based on the scales of Yoo et al. (2001) and Heydari et al. (2020). Participants rated their agreements or disagreements on multi-item, 7-point Likert scales (1 = strongly disagree to 7 = strongly agree).

We also included manipulation checks for each the 8 conditions.

It should be noted that the questionnaire also contained measurements on familiarity of reading OCRs and credibility of OCRs in order to explore their relation with the main variables of our study, but these two were not part of our hypothesis, and we have not included them in our data analysis in order keep the focus of the paper only on the variables included in the hypotheses.

5. Results

The data analysis was conducted in multiple steps. We first checked the main and interaction effects using Univariate analysis. Then we checked the moderator relationships between the independent variables (i.e. Picture, EE, Incongruent valence) and PDOCR by using PROCESS Hayes model 1. We checked the mediation via PDOCR using PROCESS Hayes model 4. Next, we checked the variables using PROCESS Hayes model 7, in which the moderator was 'incongruent valence' and the two independent variables were Picture and EE, the dependent variable was Purchase Intention, and the mediator was PDOCR. We also checked model 7 with the six cultural variables as the moderator, but the results were largely not significant.

Finally, we found that the best model that fits our data was with model 11. Our full conceptual model was analyzed using PROCESS Hayes model 11, where our two independent variables were 'Picture' and 'EE', first moderator was 'incongruent valence', second moderator were the cultural variables (which was moderating 'incongruent valence'), mediator was PDOCR, and the dependent variable was 'purchase intention'.

Manipulation checks: Respondents perceived the positive comments as positive ($M=5.87$, $SD=1.21$), and the negative comments as negative ($M=5.79$, $SD=1.24$). They recognized the presence of EE ($M=6.00$, $SD=0.896$), and pictures ($M=6.16$, $SD=0.75$). However, the incongruent valence situation was not properly manipulated, and it seems most likely that the wording of this question was not clear to the respondents. Even though all the conditions were incongruent (opposite average and individual review valence), participants rated the reviews to be somewhat congruent ($M=4.87$, $SD=1.79$).

Respondents were familiar with online reviews ($M= 5.75$, $SD=0.67$) and found online reviews to be credible ($M=5.63$, $SD=0.69$). Respondents had overall low levels of perception of deception for the 8 conditions ($M=2.69$, $SD=1.14$), and expressed purchase intention ($M=5.03$, $SD=1.55$). Finally, the six cultural variables were as follows: Indulgence ($M=5.31$, $SD=1.06$), Power Distance ($M=4.84$, $SD=1.51$), Uncertainty Avoidance ($M=5.83$, $SD=0.63$), Collectivism ($M=5.41$, $SD=0.96$), Long-term orientation ($M=5.68$, $SD=0.65$) and Masculinity ($M=5.17$, $SD=1.31$).

Main and interaction effects: Three independent variables EE (present vs absent) x Picture (present vs absent) x incongruent valence (positive vs negative) were measured to test their effect on PDOCR. Results from Univariate tests show that Picture, EE, and incongruent valence does not have significant main effects with PDOCR. Even though PDOCR is higher for positively incongruent reviews than negatively incongruent reviews, the difference is not significant. Thus, H1, H2a and H4a are not supported. Picture and EE has significant main effect with purchase intention: Picture [$F=4.749$, $p<0.05$] and EE [$F=7.454$, $p<0.01$]. Purchase intention increases with the presence of picture in OCRs ($M_{no_pic}=4.82$, $SD=1.73$; $M_{pic}=5.24$, $SD=1.31$), and purchase intention decreases with the presence of emotional expressions in OCRs ($M_{no_EE}=5.28$, $SD=1.33$; $M_{EE}=4.76$, $SD=1.72$). Thus, H2b and H4b are supported.

Univariate analysis with PDOCR as the dependent variable showed significant two-way interaction between EE and incongruent valence: [$F=6.802$, $p < 0.05$]. Two-way interaction was also observed between picture and incongruent valence: [$F=3.169$, $p < 0.1$]; and between EE and picture: [$F=5.756$, $p < 0.05$].

Running PROCESS Hayes Model 1 showed that incongruent valence has a moderating effect on EE and PDOCR ($t=2.6081$, $p<0.01$). This was further tested using PROCESS Hayes model 7 which again showed a significant interaction between EE and incongruent valence ($F=6.8$, $p=0.0097$). Overall, use of EE has an opposing effect on incongruent valence, as shown in Figure 3. Using EE for positive incongruent review increases PDOCR, and on the other hand, using EE on negative incongruent review reduces PDOCR. This reflects the negativity bias, where people tend to perceive less deception in negative review than the positive review when they are written with emotional expressions. Furthermore, for positive incongruent reviews, PDOCR is highest when EE is present, and PDOCR is lowest when EE is not present ($M_{EE}=3.05$, $SD=1.43$; $M_{no_EE}=2.44$, $SD=0.9$, $F=9.077$, $p=0.003$). This means that positive incongruent reviews on their own are perceived to be less deceptive, and positive incongruent reviews are considered less deceptive when expressed in plain language without using emotional expressions, but using EE makes people to perceive deception in the positive incongruent review. For negative incongruent reviews, presence of EE lowers PDOCR, but the difference is not significant ($M_{no_EE}=2.71$, $SD=1.26$; $M_{EE}=2.58$, $SD=0.79$, $F=0.44$, $p=.51$). Thus it seems to indicate that EE tends to exaggerate the OCRs, as mentioned in previous literature (Baker & Kim, 2019) and it may be expected that people tend to perceive less deception if the exaggeration via EE is made in negative incongruent valence than in positive incongruent valence.

For testing the moderating effect of incongruent valence between picture and PDOCR, we conducted Univariate analysis, which showed significant interaction at 90% CI ($F=3.169$, $p<0.1$). Thus H3 is supported at 90% CI. Picture increases PDOCR for negative incongruent review ($M_{no_pic}=2.52$, $SD=.85$; $M_{pic}=2.77$, $SD=1.22$), but decreases PDOCR for positive

incongruent review ($M_{\text{no_pic}}=2.86$, $SD=1.33$; $M_{\text{pic}}=2.74$, $SD=1.22$). The highest and lowest level of PDOCR are both found when there is no picture, but the mean differences are not significant for either the positive or negative incongruent conditions: the lowest PDOCR is in negative incongruent condition without picture ($M_{\text{No Pic_Neg. Incongruent}}=2.52$, $M_{\text{Pic_Neg. Incongruent}}=2.77$, $F=1.62$, $p=.20$), whereas the highest PDOCR is in positive incongruent condition without picture ($M_{\text{No Pic_Pos. Incongruent}}=2.86$, $M_{\text{Pic_Pos. Incongruent}}=2.61$, $F=1.55$, $p=0.22$).

This indicates that when picture is not present in OCRs, the valence of the review could play a bigger role, most likely because there is incongruent valence, and positive incongruent reviews that are not consistent with the average review is seen as more deceptive than the negative incongruent reviews. But when picture is added to the OCR, it provides proof to the positive review and reduces the perceived deceptiveness of the positive incongruent review, but the same picture accompanying a similar negative incongruent review increases the perceived deception for negative incongruent review. The interaction between the Picture and incongruent valence is presented in Figure 4.

The two-way interaction between Picture and EE was tested as an exploratory study even though such an effect was not part of our hypotheses. Running PROCESS Hayes model 1 revealed that when picture is the moderator, EE has direct effect on PDOCR [$t=2.8469$, $p<0.01$] and is moderated by picture [$F=-2.3992$, $p<0.05$]. However, as this effect is not part of our hypothesis, it was not further analyzed. Pertinent to our study hypotheses, Incongruent valence moderates the effect of: EE on PDOCR [$t=2.6081$, $p=0.0097$] and Picture on PDOCR [$t=-1.7801$, $p=0.0763$]. The main and interaction effects are presented in Table 2.

Figure 4: Bar chart showing interaction between EE X Incongruent Valence on PDOCR

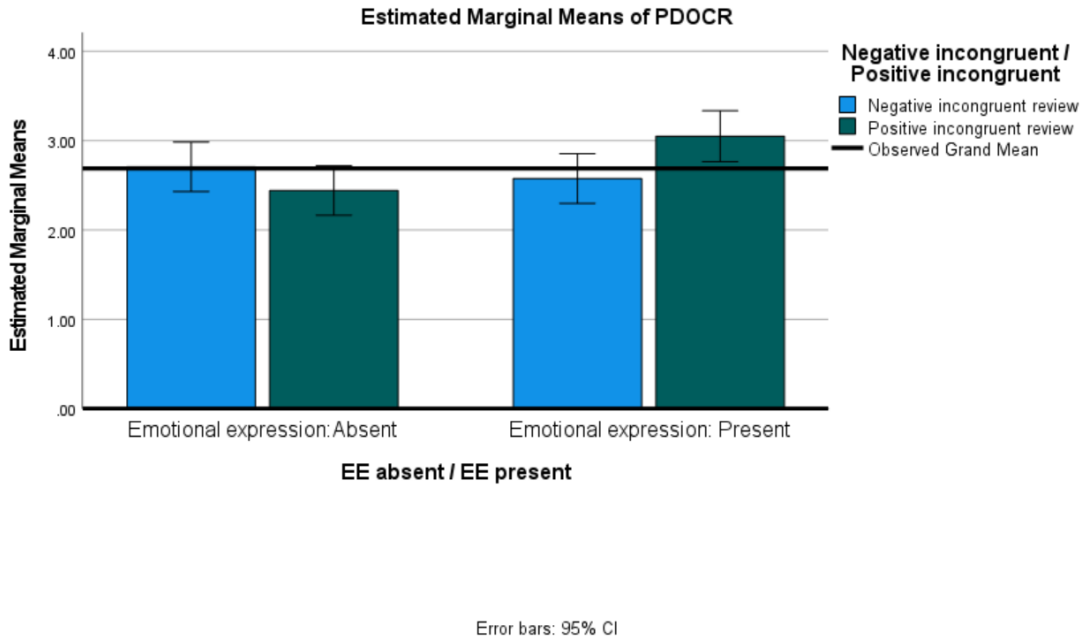


Figure 5: Bar chart showing interaction between Picture X Incongruent Valence on PDOCR.

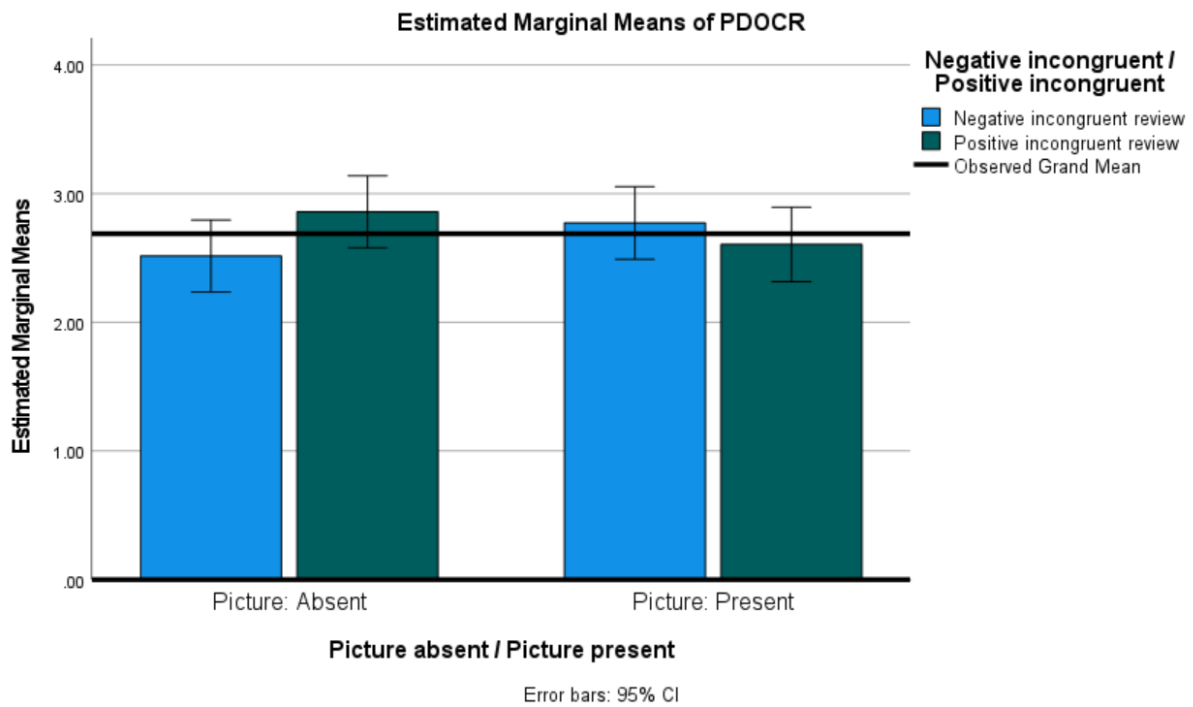


Table 2: Main and Interaction Effects

	PDOCR	Purchase Intention	Hypothesis supported/not supported
Main effects:			
Incongruent valence review valence	F=.413, p=.516	F=.336, p=.563	H1 not supported
Picture	F=0.001, p=.98	F=4.749, p=0.03*	H2a not supported, H2b supported
EE	F=2.629, p=.106	F=7.454, p=0.007**	H4a not supported, H4b supported
Two-way interaction:			
Picture x Incongruent valence	F(1, 247)= 3.169, p=.076”,	-	H3 supported at 90% C.I.
EE x Incongruent valence	F(1,247)= 6.802, p=0.0097*	-	H5 supported
EE x Picture	F=5.756, p=-.017*	-	-
Three-way interaction:			
Picture x EE x Incongruent valence	F=.006, p=.94	-	-

Significance levels: “p<0.1, *p<0.05, **p<0.01, ***p<0.001.

Purchase Intention: The dependent variable, Purchase Intention, has a significant main effect with both the Picture and EE conditions. For the independent variable ‘Picture’, there is significant main effect of Picture on Purchase intention ($\beta=.43$, $SE=.16$, $t=2.73$, $p=.0068$) and PDOCR on Purchase Intention ($\beta=-.81$, $SE=.07$, $t=-11.69$, $p=.0000$). Picture significantly increases purchase intention whereas PDOCR significantly decreases purchase intention. For the independent variable EE, there is significant main effect of EE on Purchase intention ($\beta=-.34$,

SE=.16, $t=-2.18$, $p=.03$) and PDOCR on Purchase Intention ($\beta=-.79$, SE=.07, $t=-11.34$, $p=.0000$).

Emotional expressions and PDOCR both significantly decrease purchase intention. However, we did not find a mediation effect with Picture and EE as the independent variables, PDOCR as the mediator, and Purchase intention as the dependent variable.

Moderation by cultural variables: Hofstede's six cultural values were measured to test their moderating effect on PDOCR. The six cultural variables are: Collectivism, Power distance, Uncertainty avoidance, Masculinity, Long term orientation and Indulgence. PROCESS Hayes Model 11 was found to be a suitable model to reflect the relation between the variables. Cultural variables were considered as a second moderator, having a moderating effect on the first moderator 'incongruent valence'.

Collectivism: Overall for both positive and negative incongruent reviews, Individualists have higher PDOCR compared to Collectivists: ($M_{\text{individualists}}=3.33$, $SD=1.28$; $M_{\text{collectivists}}=2.34$, $SD=0.87$).

For the 'Picture' condition, Collectivism significantly increased the moderating effect of incongruent valence between Picture and PDOCR. ($\beta_{\text{without_Collectivism}}=-.51$, SE=.29, $p=.076$ vs $\beta_{\text{Collectivism}}=-1.43$, SE=.44, $p=0.0012$). Test of conditional interaction showed that Individualists had a significant effect in the interaction of Picture x Incongruent Valence on PDOCR [$F(1, 243)=10.73$, $p=0.0012$, $\beta=-1.43$], but not for Collectivists [$F(1, 243)=.3049$, $p=.58$, $\beta=-.18$]. Moreover, there is a significant three-way interaction between Picture X incongruent valence X Collectivism on PDOCR [$F(1, 243)=5.31$, $p=0.0221$].

For the 'EE' condition, Collectivism significantly increased the moderating effect of incongruent valence between EE and PDOCR: ($\beta_{\text{without_Collectivism}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{Collectivism}}=0.9985$, $SE=.44$, $p=0.0226$). For H7 we hypothesized that Collectivism/Individualism moderates the relation between incongruent review valence and PDOCR, such that, PDOCR is stronger for Collectivists (vs Individualists). Based on the above results, our H7a and H7b are supported.

Power Distance: Overall for both positively and negatively incongruent reviews, low power distance (LPD) individuals have higher PDOCR compared to high power distance (HPD) individuals: ($M_{\text{LPD}}=3.54$, $SD=1.42$; $M_{\text{HPD}}=2.24$, $SD=0.57$).

For the 'Picture' condition, power distance (PD) significantly increased the moderating effect of incongruent valence between Picture and PDOCR. ($\beta_{\text{without_PD}}=-.51$, $SE=.29$, $p=.076$ vs $\beta_{\text{PD}}=-1.16$, $SE=.41$, $p=0.0045$). Test of conditional interaction between Picture x Incongruent Valence showed that LPD individuals had a significant effect on PDOCR [$F(1, 243)=8.22$, $p=0.0045$, $\beta=-1.1608$], but not HPD individuals [$F(1, 243)=.29$, $p=.59$, $\beta=-.16$]. Moreover, there is a significant three-way interaction between Picture X incongruent valence X PD on PDOCR [$F(1, 243)=3.9997$, $p=0.0466$].

For the 'EE' condition, PD significantly increased the moderating effect of incongruent valence between EE and PDOCR: ($\beta_{\text{without_PD}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{PD}}=1.59$, $SE=.41$, $p=0.0001$). Test of conditional interaction between EE x Incongruent Valence showed that LPD individuals had a significant effect on PDOCR [$F(1, 243)=15.31$, $p=0.0001$, $\beta=1.586$], but HPD individuals do not have a significant interaction [$F(1, 243)=.01$, $p=0.92$, $\beta=.0297$]. There is a

significant three-way interaction between EE X incongruent valence X PD on PDOCR [$F(1, 243)=9.66, p=0.0021$].

For H8 we hypothesized that PD moderates the relation between incongruent review valence and PDOCR, such that, PDOCR is stronger for LPD (vs HPD) individuals. Based on the results presented above, our H8a and H8b are supported.

Uncertainty Avoidance: Overall the mean difference between strong and weak UA individuals is very small. For both positively and negatively incongruent reviews, weak UA individuals have only slightly higher PDOCR compared to strong UA individuals: ($M_{\text{weak_UA}}=2.84, SD=1.01; M_{\text{strong_UA}}=2.53, SD=1.24$). This is opposite of what we hypothesized, we expected that strong UA individuals will have higher PDOCR compared to weak UA individuals, but the mean values show the opposite trend. The interactions in both conditions are not significant: ‘Picture’ [$\beta=-.51, SE=.41, p=.21$] and ‘EE’ [$\beta=.45, SE=.39, p=.255$], showing no moderating effect of UA on incongruent valence. Thus H9a and H9b are both rejected.

Masculinity: Overall for both positively and negatively incongruent reviews, feminine culture individuals have higher PDOCR compared to masculine culture individuals: ($M_{\text{feminine}}=3.59, SD=1.36; M_{\text{masculine}}=2.27, SD=0.70$).

For the ‘Picture’ condition, Masculinity significantly increased the moderating effect of incongruent valence between Picture and PDOCR. ($\beta_{\text{without_masculinity}}=-.51, SE=.29, p=.076$ vs $\beta_{\text{masculinity}}=-1.28, SE=.42, p=0.0028$). Test of conditional interaction between Picture x Incongruent Valence showed that Feminine culture individuals had a significant effect on PDOCR [$F(1, 243)=9.11, p=0.0028, \beta=-1.28$], but not Masculine culture individuals [$F(1,$

243)=.001, $p=.97$, $\beta=-.0092$]. Moreover, there is a significant three-way interaction between Picture X incongruent valence X Masculinity on PDOCR [$F(1, 243)=6.1368$, $p=0.0139$].

For the 'EE' condition, Masculinity significantly increased the moderating effect of incongruent valence between EE and PDOCR: ($\beta_{\text{without_masculinity}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{masculinity}}=1.33$, $SE=.43$, $p=0.002$). Test of conditional interaction between EE x Incongruent Valence showed that Feminine culture individuals had a significant effect on PDOCR [$F(1, 243)=9.7679$, $p=0.002$, $\beta=1.33$], but Masculine culture individuals do not have a significant interaction [$F(1, 243)=.1199$, $p=0.73$, $\beta=.1007$]. There is a significant three-way interaction between EE X incongruent valence X Masculinity on PDOCR [$F(1, 243)=5.70$, $p=0.0177$].

For H10 we hypothesized that Masculinity moderates the relation between incongruent review valence and PDOCR, such that, PDOCR is stronger for Feminine culture (vs Masculine culture) individuals. Based on the results presented above, our H10a and H10b are supported.

Long-term orientation: Overall for both positively and negatively incongruent reviews, STO individuals have higher mean PDOCR compared to LTO individuals: ($M_{\text{STO}}=3.01$, $SD=1.14$; $M_{\text{LTO}}=2.39$, $SD=1.06$).

For both the 'Picture' and 'EE' condition, the cultural variable of LTO is only significant at 90% CI. The moderating effect of incongruent valence between Picture and PDOCR is slightly increased in the presence of LTO: ($\beta_{\text{without_LTO}}=-.51$, $SE=.29$, $p=.076$ vs $\beta_{\text{LTO}}=-.68$, $SE=.40$, $p=0.09$). However, there is a significant interaction between Picture and LTO [$\beta=-.82$, $SE=.39$, $p=0.0369$].

For the 'EE' condition, again the cultural variable of LTO is only significant at 90% CI. The moderating effect of incongruent valence between Picture and PDOCR is slightly increased in

the presence of LTO: ($\beta_{\text{without_LTO}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{LTO}}=0.77$, $SE=.39$, $p=0.0518$). Hence for H11a and H11b, we only find support at 90% CI.

Indulgence: Overall for both positively and negatively incongruent reviews, Restraint culture individuals have higher mean PDOCR compared to Indulgence culture individuals: ($M_{\text{Restraint}}=3.26$, $SD=1.27$; $M_{\text{Indulgent}}=2.43$, $SD=.97$).

For the 'Picture' condition, the cultural variable of Indulgence does not have a significant effect ($\beta_{\text{Indulgence}}=-.32$, $SE=.48$, $p=0.51$). Thus H12a is not supported. For the 'EE' condition, the cultural variable of Indulgence has a significant moderating effect. The moderating effect of incongruent valence between EE and PDOCR is increased in the presence of Indulgence: ($\beta_{\text{without_Indulgence}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{Indulgence}}=1.32$, $SE=.47$, $p=0.0057$). Thus we find support for H12b.

Mediation by PDOCR: Our results for the mediation were not as expected. We first checked direct mediation using the two independent variables: Picture and EE, mediation via PDOCR on the dependent variable: Purchase intention. However, this mediation was not significant for either of the IVs. Next, we checked moderated mediation by including the first moderator, Incongruent valence. Using PROCESS Hayes model 7, we found mediation effect of EE on Purchase intention via PDOCR when there was moderation between EE and PDOCR by Incongruent valence: $IE=-.5833$, $SE=.22$, at 95% CI= (-1.01, -0.16). However, we did not find any such significant mediation effect for the Picture condition at 95% CI. We tested using 90% CI and found significant moderated mediation for the IV Picture: $IE= .4112$, $SE=.23$, at 90% CI (.0385, .7817).

Lastly, we checked moderated moderated mediation for the two IVs, in which the first moderator was the Incongruent valence, and second moderator were the 6 cultural variables, as depicted in our theoretical model in Figure 3.1. Of the six cultural variables, only Collectivism [IE=-1.01, SE=.47, 95% CI=(-1.91, -.06)] and Masculinity [IE=-1.02, SE=.49 , 95% CI=(-2, -.04)] had moderated moderated mediation with the Picture condition. With the EE condition, moderated moderated mediation occurred with Power Distance [IE=1.23, SE=.47 , 95% CI=(.32, 2.14)] and with Maculinity at 90% CI [IE=.97, SE=.48 , 90% CI=(.19, 1.74)]. Hence we cannot fully support H6.

The results showing the indices of the moderated-moderated-mediation using PROCESS Hayes model 11 are presented in Table 3. The full results of the moderated moderated mediation using PROCESS Hayes model 11 are presented in Appendix A.

Table 3: Result of mediation by PDOCR: Moderated moderated mediation using PROCESS Hayes model 11

<p>1. Moderated moderated mediation with 'Picture' condition IV: Picture DV: Purchase Intention Moderator 1: Incongruent valence Moderator 2: cultural values Mediator: PDOCR</p>		
Cultural Variable	Index of moderated moderated mediation	Mediation by PDOCR significant or not
Collectivism	IE=-1.01, SE=.47, 95% CI=(-1.91, -.06)	Significant
Power distance	IE=-.81, SE=.5, 95% CI=(-1.77, .18)	Not significant
Uncertainty avoidance	IE=-0.7., SE=.48, 95% CI=(-1.04, .89)	Not significant
Masculinity	IE=-1.02, SE=.49, 95% CI=(-2, -.04)	Significant
Long term orientation	IE=-.42, SE=.44, 95% CI=(-1.3, .48)	Not significant
Indulgence	IE=.35, SE=.53, 95% CI=(-.72, 1.37)	Not significant

<p>2. Moderated moderated mediation with 'EE' condition IV: Emotional expression DV: Purchase Intention Moderator 1: Incongruent valence Moderator 2: cultural values Mediator: PDOCR</p>		
Cultural Variable	Index of moderated moderated mediation	Mediation by PDOCR significant or not
Collectivism	IE=.33, SE=.48, 95% CI=(-.67, 1.24)	Not significant
Power distance	IE=1.23, SE=.47, 95% CI=(.32, 2.14)	Significant
Uncertainty avoidance	IE=-.54, SE=.45, 95% CI=(-1.44, .35)	Not significant
Masculinity	IE=.97, SE=.48, 95% CI=(-.0036, 1.88); 90% CI=(.19, 1.74)	Not significant Significant at 90% CI
Long term orientation	IE=.1, SE=.43, 95% CI=(-.78, -.93)	Not significant
Indulgence	IE=.64, SE=.5, 95% CI=(-.39, 1.62)	Not significant

The results of the 12 hypothesis are summarized in Table 4 below:

Table 4: Summary of Results

	Hypothesis	Supported or not
H1	PDOCR is higher (lower) for positive incongruent (negative incongruent) review	H1 not supported. F=.413, p=.516
H2	Review with picture (vs review without picture) a) decreases PDOCR, and b) increases purchase intention	H2a not supported, H2b supported H2a: F=0.001, p=.98 H2b: F=4.749, p=0.03
H3	Incongruent review valence moderates the relation between picture and PDOCR, such that PDOCR is lower for reviews with picture in positive incongruent condition than in negative incongruent condition	H3 supported at 90% CI. H3: F(1, 247)=3.169, p=.076
H4	Review with EE (vs review without EE): a) increases PDOCR, and b) decreases purchase intention.	H4a not supported, H4b supported H4a: F=2.629, p=.106 H4b: F=7.454, p=0.007
H5	Incongruent review valence moderates the relation between EE and PDOCR, such that PDOCR is higher for reviews with EE in positive incongruent condition than in negative incongruent condition.	H5 is supported H5: F(1,247)=6.802, p=0.0097
H6	Perceived deception acts as a mediator between a) Picture and Purchase Intention, and b) EE and Purchase intention	H6 is not supported
H7	Collectivism/Individualism has a moderating effect on incongruent valence, such that PDOCR is stronger for Collectivists (vs Individualists) for: a) 'Picture' condition b) 'Emotional Expression' condition	Both H7a and H7b are supported H7a: $\beta_{\text{without_Collectivism}}=-.51$, SE=.29, p=.076 vs $\beta_{\text{Collectivism}}=-1.43$, SE=.44, p=0.0012 H7b: $\beta_{\text{without_Collectivism}}=0.74$, SE=.28, p=.0097 vs $\beta_{\text{Collectivism}}=0.9985$, SE=.44, p=0.0226

	Hypothesis	Supported or not
H8	Power distance has a moderating effect on incongruent valence, such that PDOCR is stronger for LPD (vs HPD) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition	Both H8a and H8b are supported H8a: $\beta_{\text{without_PD}}=-.51$, $SE=.29$, $p=.076$ vs $\beta_{\text{PD}}=-1.16$, $SE=.41$, $p=0.0045$ H8b: $\beta_{\text{without_PD}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{PD}}=1.59$, $SE=.41$, $p=0.0001$
H9	Uncertainty avoidance has a moderating effect on incongruent valence, such that PDOCR is stronger for strong UA (vs weak UA) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition	Both H9a and H9b are rejected H9a: $\beta=-.51$, $SE=.41$, $p=.21$ H9b: $\beta=.45$, $SE=.39$, $p=.255$
H10	Masculinity/Femininity has a moderating effect on incongruent valence, such that PDOCR is stronger for Feminine culture (vs Masculine culture) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.	Both H10a and H10b are supported. H10a: $\beta_{\text{without_masculinity}}=-.51$, $SE=.29$, $p=.076$ vs $\beta_{\text{masculinity}}=-1.28$, $SE=.42$, $p=0.0028$ H10b: $\beta_{\text{without_masculinity}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{masculinity}}=1.33$, $SE=.43$, $p=0.002$
H11	LTO/STO culture individuals has a moderating effect on incongruent valence, such that PDOCR is stronger for STO (vs LTO) individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.	H11a and H11b supported at 90% CI. H11a: $\beta_{\text{without_LTO}}=-.51$, $SE=.29$, $p=.076$ vs $\beta_{\text{LTO}}=-.68$, $SE=.40$, $p=0.09$. H11b: $\beta_{\text{without_LTO}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{LTO}}=0.77$, $SE=.39$, $p=0.0518$.
H12	Indulgence/Restraint has a moderating effect on incongruent valence such that PDOCR is stronger for Restraint (vs Indulgent) culture individuals for: a) 'Picture' condition b) 'Emotional Expression' condition.	H12a is not supported. H12b supported. H12a: $\beta_{\text{Indulgence}}=-.32$, $SE=.48$, $p=0.51$ H12b: $\beta_{\text{without_Indulgence}}=0.74$, $SE=.28$, $p=.0097$ vs $\beta_{\text{Indulgence}}=1.32$, $SE=.47$, $p=0.0057$.

6. Discussions

The present study aimed to identify the peripheral cues and the moderators that can potentially detect consumers' perceived deception in online consumer reviews (PDOCR). The literature on OCRs has extensive studies on the detection of deception (Grazioli & Jarvenpaa, 2000; Jindal & Liu, 2008; Mayzlin et al., 2014; Ott et al., 2011;). Munzel (2016) focuses on the consumer-side and studies cues for assisting internet users in distinguishing fake from genuine reviews. However, no matter whether deception has actually occurred or not, perceived deception is another important aspect that affects the consumers' behavior (Peng et al., 2018), and there are very few studies in existing literature on PDOCR (Roman et al., 2019). Recent studies have stressed on the rising prevalence of deceptive online reviews and consequently, consumers' skepticism towards OCRs (Dellarocas, 2006; Mayzlin, 2006; Zhuang et al., 2018). Thus, it is important to understand what cues give rise to the perceived deception in the minds of the consumers and how that perception affects their attitudes and behaviors.

With these issues in mind, this study has taken a consumer-centric approach, and based on the Elaboration Likelihood Model, has aimed to identify the peripheral cues that lead consumers to perceive deception in OCRs and the consequential effects of perceived deception on consumer behavioral intention. Using a between-subjects design on 8 conditions, the two independent variables, Picture (present vs absent) and Emotional expression (present vs absent), were used to understand the mediating role of PDOCR, the moderating role of Incongruent valence (positive vs negative) on PDOCR, the moderating role of Hofstede's six cultural values on Incongruent valence, and finally, the consequential effect on purchase

intention. Through self-reported survey questionnaires on 251 participants, this study found Picture increases purchase intention whereas EE lowers purchase intention. There was a direct relation between PDOCR and purchase intention for both 'Picture' and 'EE' conditions, showing that PDOCR significantly reduced purchase intention. However, there were no direct relation between Picture and PDOCR, and between EE and PDOCR, as a result we did not find any mediation via PDOCR. The results were further analyzed using PROCESS Hayes model 11 to study the effects of the two moderators.

Moderator 1: Incongruent valence. The presence of incongruent valence moderates between the two peripheral cues (i.e. Picture and EE) and PDOCR. Overall, use of EE has an opposing effect on incongruent valence. EE on positive incongruent review increases PDOCR, whereas, EE on negative incongruent review reduces PDOCR. People tend to perceive less deception in negative incongruent review with EE than in positive incongruent review with EE. This reflects the negativity bias (Herr et al., 1991) and is similar to the results obtained by Kim and Gupta (2012), who also found that negative emotions in a single negative review decreases informative value of that review and lead to less negative evaluation but positive emotion in single positive review may not exert significant positive influence on product evaluation. Furthermore, for positive incongruent reviews, PDOCR is highest when EE is present, and PDOCR is lowest when EE is absent. This could mean that positive incongruent reviews are considered less deceptive when expressed in plain language without using emotional expressions, but using EE makes people to perceive deception in the positive incongruent review. For negative incongruent reviews, presence of EE lowers PDOCR. Thus it seems that EE tends to exaggerate the OCRs, as mentioned in previous literature (Baker & Kim, 2019) and it

may be expected that people tend to perceive less deception when negative incongruent reviews are exaggerated using EE, but people perceive comparatively more deception when positive incongruent reviews are exaggerated using EE.

The moderating effect of incongruent valence between picture and PDOCR was significant only at 90% CI ($F= 3.169, p<0.1$). Picture increases PDOCR for negatively incongruent review but decreases PDOCR for positively incongruent review. The highest and lowest level of PDOCR are both found when there is no picture: the lowest PDOCR is in negative incongruent condition without picture whereas the highest PDOCR is in positive incongruent condition without picture. This shows that when picture is not present in OCRs, the valence of the review plays a bigger role, and compared to negative incongruent reviews, positive incongruent reviews are seen as more deceptive, supporting the negativity bias. But when picture is added to the OCR, it provides proof to the positive review and reduces the perceived deceptiveness of the positive review, but the same picture accompanying a similar negative review increases the perceived deception for negative review. The results suggest that the availability of cues in OCRs affect consumers' PDOCR and behavioral intentions as found in previous study in OCR (Nazlan et al., 2018).

Moderator 2: Cultural values. Finally, Hofstede's six cultural values were measured on individual level to test their effects as moderator of the moderator (i.e. moderator of Incongruent valence). We found that Collectivism, Power Distance, and Masculinity has significant moderating effect on Incongruent valence for both the 'Picture' and 'EE' conditions. Long term orientation had significant moderating effect only at 90% CI, and Indulgence had a significant effect only for 'EE' condition. Uncertainty avoidance did not have any significant

moderating effect. These findings show important differences in PDOCR brought about by different peripheral cues and individual cultural values. However, we did not find satisfactory mediation via PDOCR between the two IV conditions 'Picture' and 'EE', and purchase intention.

7. Contributions

7.1. Theoretical Contributions

This study contributes to the literature and practice in three ways. First, it extends literature on online consumer reviews by identifying the cues for perceived detection and the subsequent effects on consumer attitudes and behavior. In our study we find insights into two peripheral cues commonly found in OCRs, Picture of the reviewed product/service, and Emotional expressions, and how they affect PDOCR and behavioral intention. We found that picture and EE do not have main effects on PDOCR but on purchase intention only. More specifically, Picture has a positive effect and EE has a negative effect on purchase intention. In the presence of the moderating role of Incongruent valence, Picture had a significant effect on 90% CI on PDOCR, and EE had a significant effect on PDOCR. This tells that Picture and EE on their own do not influence PDOCR, but consumers might look at the other available cues in the OCR to perceive deception. Finally, an important aspect of the study was how influential were the individual cultural variables, and we found significant interaction with several of the cultural variables that moderates incongruent valence, which in turn moderates the effects on PDOCR. These finding should provide some useful avenues for further research in the area of PDOCR.

Second, this study is among the first few studies on PDOCR. Specifically, in the area of OCR, apart from Peng and colleagues (2016), there are very few studies on perceived deception, as opposed to actual deception. Due to the rising concern with deceptive or

manipulated online consumer reviews and the very few studies to understand the effects of PDOCR, researchers have called for more research in this area (Peng et al., 2016; Roman et al., 2019). Furthermore, this research has taken a consumer-centric view: previous literature on detection of deception in OCR has used various methods and focused on different cues such as duplicate or near-duplicate reviews, (Jindal and Liu, 2008; Lin et al., 2014), textual and psycholinguistic cues (Banarjee and Chua, 2014; Ott et al., 2011), however, in this research, the consumer's peripheral cues such as Pictures of the reviewed product/service and Emotional expressions used in OCRs have been tested and the resulting consumer's behavioral changes due to PDOCR have been measured. Thereby, this study contributes to the understanding of some of the antecedents and consequences of PDOCR from a consumer perspective. Specifically, the finding that in the presence of other diagnostic information, ie. Incongruent valence, Picture reduces PDOCR and EE increases PDOCR provides in interesting addition to the literature in the domain of OCR and PDOCR.

Finally, one of the key findings of this study lie in the individual-level cultural differences and their role as moderators. In addition to answering the call to investigate the effect of culture on PDOCR (Peng et al., 2016), this study broadens our understanding of the effect of culture on another important cue, incongruent valence, and how that subsequently moderates PDOCR and consumer's behavioral intention. The moderating role of cultural dimensions has expanded the literature on cultural values in the OCR context and provided added insight that shows individual cultural values also shape the way consumers perceive deception in OCRs.

7.2. Managerial Contributions

The findings of our study have implications for multiple stakeholders in the OCR sphere. Businesses actively seek positive reviews and many are tempted to buy them due to the significant reputational and commercial advantages they entail (Hunt, 2015), but the crucial importance of PDOCR can be realized from the direct effects of PDOCR on purchase intention. This finding should be a warning to all related parties in the OCR domain and to the service providers so that they are fully aware of the stakes involved in the widespread deceptive practices. As consumers are becoming aware of the proliferation of fake OCRs, they will be more prone to perceive deception. Thus the trust that consumers have on this relatively new but influential form of marketing communication will erode, which will ultimately harm the service providers, OCR platforms, and the businesses whose products and/or services are discussed in the OCRs. The reputation and usage of online reviews and review websites may be at stake in the long term if the concerns and uncertainties of consumers further disseminate and solidify (Thomas et al., 2019). PDOCR serves as an important reminder of the harms brought about by fake and deceptive reviews and all related parties should come together in reducing this malpractice so that the real benefits of OCRs can be sustainably realized.

In the marketing field, the protection/satisfaction of consumer needs and interests is especially important from an ethical perspective (Román, 2007). However, digital information can be easily changed, misrepresented, or created anonymously under false pretenses, and the global nature of the web makes it challenging for governments to enforce standards for quality control (Metzger & Flanagin, 2013). Hence, marketers, business firms and OCR service providers should come forward against deceptive OCRs in order to ensure their consumers' protection

and to preserve the ethicality of their business practices. One of the contributions of this study is that it highlights the negative spill-over effect of fake or deceptive OCR practices in the form of PDOCR. PDOCR can occur whether an OCR is genuine and fake, simply due to the fact that consumers are becoming skeptical of the OCR climate in general (Filiari, 2016). PDOCR ultimately negatively affects the consumers' behavioral intentions and harms all stakeholders in the long run. Thus concerned parties should try to protect the consumers' welfare and the ethicality of their business practices and marketing tactics.

8. Limitations and Future Research

The findings and implications of this study should be interpreted together with its limitations. The biggest limitation is our failure to find a significant mediation by PDOCR as hypothesized in our theoretical model. Even though our results showed direct effect between PDOCR and purchase intention, and between the two IVs and purchase intention, we did not find direct effect between the two IVs and PDOCR. Furthermore, there was an error in one of the eight conditions used in the questionnaire, that is, in 'Condition 7', the average rating was 1.5/5 stars whereas the accompanying picture showed 4.5 stars. Despite the fact that only one of the eight respondent groups were presented with this question set, it still reflects a significant flaw in the research design. The mediation was not successful; Such a result seems most likely to be caused due to the lacking on the part of the researcher in not properly designing the questionnaire. Pre-test should have been carried out to check whether the emotional expressions were really perceived to be emotional and whether the pictures were perceived to be appetizing. The order of the different variables tested should have been changed to avoid order effect bias. Future researchers should refine the survey design by

including pre-tests and by changing the order of the questions in order to properly measure these very important OCR cues.

Another limitation of this study is that in the 'Picture' condition, we presented the same pictures in both positive and negative incongruent valences, and the picture themselves can act as confounding variables. The researcher herself has experienced a situation when reading an online food-review in a social networking site. The review contained picture of a half-eaten burger and the reviewer's negative comment on that burger. Following the main reviewer's comments, some people commented that the review was fake because the reviewer seemed to have eaten most of the burger and so it must have been a good burger; while others commented that the review was real because as the reviewer could not finish the burger, it must have been bad. Hence, it could be interesting to see how people's PDOCR changes with different forms/valence of the picture accompanying the review.

One other limitation of the study was that the chosen service context for the survey was a restaurant setting, and a single product category limits the generalizability of this study. Thus future research should study other categories to find if the results are generalizable to other contexts or not. Specifically, the effect of pictures and emotional expression may be different for utilitarian and hedonic products (Kim & Gupta, 2016; Zinko et al., 2021). Finally, the survey pool was MTurk participants in exchange for a compensation, and future studies should try to adopt other recruitment strategies to increase the generalizability of the findings.

Another avenue of future research is to test how personality types affects PDOCR. Visual and verbal information affects cognitive and affective attitudes in Internet shopping (Kim & Lennon 2008). People process visual and verbal cues differently according to their personality

traits, and compared to individuals with other processing style personality traits, individuals with high need for cognition but low need for affect prefers verbal information processing whereas individuals with high need for affect but low need for cognition prefers visual information processing (Sojka & Giese, 2001). Therefore, it will be interesting for future research to study how personality traits affect PDOCR due to their likely effect on the various visual, verbal/textual cues present in OCRs.

Another interesting study is the effect of PDOCR as an independent variable itself. Research found that consumer skepticism towards marketing messages may vary according to the product type or personality, and this skepticism reflects a consumer's implicit views of how the marketplace works (Sher & Lee, 2009). Low skepticism consumers have similar characteristics to those with low need for cognition (Sher & Lee, 2009). Thus, it would be interesting to see whether PDOCR is something that is inherently present as part of a consumer's belief system towards OCRs, and how such a belief system affects consumers' visual and verbal information processing and behavioral intention.

PDOCR reflects an important and emerging concern related to OCRs. This study has attempted to shed some light on the antecedents and consequences of PDOCR, and it is hoped that the results of this study along with the discussions about the various limitations and future research suggestions would prove to be helpful for future research on this topic.

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Appendices

Appendix A: Results of moderated moderation using PROCESS Hayes model 11.

1. Table of results for the 'Picture' condition, showing moderated moderation using PROCESS Hayes model 11

Cultural variable (Moderator Z) used	<p>X₁: Picture (present vs absent) Y: Purchase Intention Mediator: PDOCR Moderator W: Incongruent valence (positive vs negative) Moderator Z: Hofstede's cultural variables</p>																								
1. Collectivism	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.4594; R²=.2111</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">t</th> <th style="text-align: center; border-bottom: 1px solid black;">p</th> </tr> </thead> <tbody> <tr> <td>Picture x incongruent valence:</td> <td style="text-align: center;">-3.2763</td> <td style="text-align: center;">.0012**</td> </tr> <tr> <td>Picture x Collectivism</td> <td style="text-align: center;">-2.0438</td> <td style="text-align: center;">.0421*</td> </tr> <tr> <td>incongruent valence x Collectivism</td> <td style="text-align: center;">-1.7604</td> <td style="text-align: center;">.0796''</td> </tr> <tr> <td>Picture x incongruent valence x Collectivism:</td> <td style="text-align: center;">2.3039</td> <td style="text-align: center;">.0221*</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6062; R² = .3675</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">t</th> <th style="text-align: center; border-bottom: 1px solid black;">p</th> </tr> </thead> <tbody> <tr> <td>Picture</td> <td style="text-align: center;">2.7272</td> <td style="text-align: center;">.0068**</td> </tr> <tr> <td>PDOCR</td> <td style="text-align: center;">-11.6944</td> <td style="text-align: center;">.0000***</td> </tr> </tbody> </table>		t	p	Picture x incongruent valence:	-3.2763	.0012**	Picture x Collectivism	-2.0438	.0421*	incongruent valence x Collectivism	-1.7604	.0796''	Picture x incongruent valence x Collectivism:	2.3039	.0221*		t	p	Picture	2.7272	.0068**	PDOCR	-11.6944	.0000***
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2. Power distance (PD)	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.5789; R²=.3352</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">t</th> <th style="text-align: center; border-bottom: 1px solid black;">p</th> </tr> </thead> <tbody> <tr> <td>Picture x incongruent valence:</td> <td style="text-align: center;">-2.8664</td> <td style="text-align: center;">.0045**</td> </tr> <tr> <td>Picture x PD</td> <td style="text-align: center;">-.3792</td> <td style="text-align: center;">.7049</td> </tr> <tr> <td>incongruent valence x PD</td> <td style="text-align: center;">-2.4711</td> <td style="text-align: center;">.0142*</td> </tr> <tr> <td>Picture x incongruent valence x PD:</td> <td style="text-align: center;">1.9999</td> <td style="text-align: center;">.0466*</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6062; R² = .3675</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">t</th> <th style="text-align: center; border-bottom: 1px solid black;">p</th> </tr> </thead> <tbody> <tr> <td>Picture</td> <td style="text-align: center;">2.7272</td> <td style="text-align: center;">.0068**</td> </tr> </tbody> </table>		t	p	Picture x incongruent valence:	-2.8664	.0045**	Picture x PD	-.3792	.7049	incongruent valence x PD	-2.4711	.0142*	Picture x incongruent valence x PD:	1.9999	.0466*		t	p	Picture	2.7272	.0068**			
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Cultural variable (Moderator Z) used	X ₁ : Picture (present vs absent) Y: Purchase Intention Mediator: PDOCR Moderator W: Incongruent valence (positive vs negative) Moderator Z: Hofstede's cultural variables
	PDOCR -11.6944 .0000***

Cultural variable (Moderator Z) used	<p>X₁: Picture (present vs absent) Y: Purchase Intention Mediator: PDOCR Moderator W: Incongruent valence (positive vs negative) Moderator Z: Hofstede's cultural variables</p>																								
3. Uncertainty avoidance (UA)	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.1791; R²=.0321</p> <table border="1" data-bbox="500 541 1247 730"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Picture x incongruent valence:</td> <td>-1.2635</td> <td>.2076</td> </tr> <tr> <td>Picture x UA:</td> <td>-.7522</td> <td>.4527</td> </tr> <tr> <td>incongruent valence x UA:</td> <td>-.4159</td> <td>.6779</td> </tr> <tr> <td>Picture x incongruent valence x UA:</td> <td>.1395</td> <td>.8892</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6062; R²= .3675</p> <table border="1" data-bbox="500 846 979 961"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Picture</td> <td>2.7272</td> <td>.0068**</td> </tr> <tr> <td>PDOCR</td> <td>-11.6944</td> <td>.0000***</td> </tr> </tbody> </table>		t	p	Picture x incongruent valence:	-1.2635	.2076	Picture x UA:	-.7522	.4527	incongruent valence x UA:	-.4159	.6779	Picture x incongruent valence x UA:	.1395	.8892		t	p	Picture	2.7272	.0068**	PDOCR	-11.6944	.0000***
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4. Masculinity (MF)	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.5752; R²=.3308</p> <table border="1" data-bbox="500 1098 1336 1287"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Picture x incongruent valence:</td> <td>-3.0180</td> <td>.0028**</td> </tr> <tr> <td>Picture x Masculinity:</td> <td>-2.9895</td> <td>.0031**</td> </tr> <tr> <td>incongruent valence x Masculinity:</td> <td>-2.5976</td> <td>.0100*</td> </tr> <tr> <td>Picture x incongruent valence x Masculinity:</td> <td>2.4773</td> <td>.0139*</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6062; R²= .3675</p> <table border="1" data-bbox="500 1402 979 1518"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Picture</td> <td>2.7272</td> <td>.0068**</td> </tr> <tr> <td>PDOCR</td> <td>-11.6944</td> <td>.0000***</td> </tr> </tbody> </table>		t	p	Picture x incongruent valence:	-3.0180	.0028**	Picture x Masculinity:	-2.9895	.0031**	incongruent valence x Masculinity:	-2.5976	.0100*	Picture x incongruent valence x Masculinity:	2.4773	.0139*		t	p	Picture	2.7272	.0068**	PDOCR	-11.6944	.0000***
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Significance levels: "p<0.1, *p<0.05, **p<0.01, ***p<0.001.

2. Table of results for the 'EE' condition, showing moderated moderation using PROCESS Hayes model 11

Cultural variable (Moderator Z) used:	<p>X₂: Emotional expression (present vs absent) Y: Purchase Intention Mediator: PDOCR Moderator W: Incongruent valence (positive vs negative) Moderator Z: Hofstede's cultural variables</p>																								
1. Collectivism	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.4617; R²=.2132</p> <table border="1" data-bbox="500 793 1263 1003"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>EE x incongruent valence:</td> <td>2.2944</td> <td>.0226*</td> </tr> <tr> <td>EE x Collectivism</td> <td>1.6158</td> <td>.1074</td> </tr> <tr> <td>incongruent valence x Collectivism</td> <td>.7452</td> <td>.4569</td> </tr> <tr> <td>EE x incongruent valence x Collectivism:</td> <td>-.7732</td> <td>.4402</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6007; R²=.3608</p> <table border="1" data-bbox="500 1150 938 1266"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>EE</td> <td>-2.1809</td> <td>.0301*</td> </tr> <tr> <td>PDOCR</td> <td>-11.3448</td> <td>.0000***</td> </tr> </tbody> </table>		t	p	EE x incongruent valence:	2.2944	.0226*	EE x Collectivism	1.6158	.1074	incongruent valence x Collectivism	.7452	.4569	EE x incongruent valence x Collectivism:	-.7732	.4402		t	p	EE	-2.1809	.0301*	PDOCR	-11.3448	.0000***
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2. Power distance (PD)	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.5898; R²=.3478</p> <table border="1" data-bbox="500 1423 1182 1633"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>EE x incongruent valence:</td> <td>3.9127</td> <td>.0001***</td> </tr> <tr> <td>EE x PD:</td> <td>1.7505</td> <td>.0813"</td> </tr> <tr> <td>incongruent valence x PD:</td> <td>1.4994</td> <td>.1351</td> </tr> <tr> <td>EE x incongruent valence x PD:</td> <td>-3.1081</td> <td>.0021**</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6007; R²=.3608</p> <table border="1" data-bbox="500 1780 938 1896"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>EE</td> <td>-2.1809</td> <td>.0301*</td> </tr> <tr> <td>PDOCR</td> <td>-11.3448</td> <td>.0000***</td> </tr> </tbody> </table>		t	p	EE x incongruent valence:	3.9127	.0001***	EE x PD:	1.7505	.0813"	incongruent valence x PD:	1.4994	.1351	EE x incongruent valence x PD:	-3.1081	.0021**		t	p	EE	-2.1809	.0301*	PDOCR	-11.3448	.0000***
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3. Uncertainty avoidance (UA)	<p>OUTCOME VARIABLE: PDOCR Model Summary: R=.2538; R²=.0644</p> <table border="1" data-bbox="487 514 1177 724"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>EE x incongruent valence:</td> <td>1.1409</td> <td>.2550</td> </tr> <tr> <td>EE x UA :</td> <td>-.8340</td> <td>.4051</td> </tr> <tr> <td>incongruent valence x UA:</td> <td>-1.1266</td> <td>.2610</td> </tr> <tr> <td>EE x incongruent valence x UA:</td> <td>1.1971</td> <td>.2324</td> </tr> </tbody> </table> <p>OUTCOME VARIABLE: Purchase Intention Model Summary: R=.6007; R²=.3608</p> <table border="1" data-bbox="487 819 933 951"> <thead> <tr> <th></th> <th>t</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>EE</td> <td>-2.1809</td> <td>.0301*</td> </tr> <tr> <td>PDOCR</td> <td>-11.3448</td> <td>.0000***</td> </tr> </tbody> </table>		t	p	EE x incongruent valence:	1.1409	.2550	EE x UA :	-.8340	.4051	incongruent valence x UA:	-1.1266	.2610	EE x incongruent valence x UA:	1.1971	.2324		t	p	EE	-2.1809	.0301*	PDOCR	-11.3448	.0000***
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Appendix B

Survey respondents' demographics

Your gender is:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	104	41.4	41.6	41.6
	Male	146	58.2	58.4	100.0
	Total	250	99.6	100.0	
Missing	System	1	.4		
Total		251	100.0		

Your age is:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20- 30 years old	129	51.4	51.6	51.6
	31- 40 years old	70	27.9	28.0	79.6
	41- 50 years old	26	10.4	10.4	90.0
	51- 60 years old	19	7.6	7.6	97.6
	61 years and above	6	2.4	2.4	100.0
	Total	250	99.6	100.0	
Missing	System	1	.4		
Total		251	100.0		

Your highest completed level of education is:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school	9	3.6	3.6	3.6
	College	28	11.2	11.2	14.8
	Undergraduate degree	69	27.5	27.6	42.4
	Graduate Degree	137	54.6	54.8	97.2
	PhD	7	2.8	2.8	100.0
	Total	250	99.6	100.0	
Missing	System	1	.4		
Total		251	100.0		

Appendix C

Questionnaire used in the survey

Hello, I am a postgraduate student at Concordia University, Montreal, Canada. I am conducting a study on online consumer reviews and I am interested to know about your experiences and opinions regarding online consumer reviews. I am also interested in how carefully you read the instructions and follow them accordingly. Please read all the questions and scenarios carefully and answer all the questions in the survey. Thank you for your participation.



INFORMATION AND CONSENT FORM

Study Title: Identifying perceived deception in online consumer reviews

Researcher: Nasmoun Amin Sikder

Researcher's Contact Information: sikdernsu@gmail.com ; 514-692-3186

Faculty Supervisor: Michel Laroche

Faculty Supervisor's Contact Information: michel.laroche@concordia.ca; 514-848-2424 Ext. 2942

Source of funding for the study: Self.

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully

before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

The purpose of the research is to understand how people perceive deception in online consumer reviews.

B. PROCEDURES

You are required to read this consent form carefully. If you agree with the terms, you will be asked to click the “I agree” button at the end of this form. Only by following this process, you confirm your participation and will be taken to the main study page. If you do not want to continue the study, you do not need to provide any information and you should click “I disagree” button to be taken out of the study. You can also discontinue your study any time during the questionnaire by closing your webpage.

In the study, you will be asked to complete an online questionnaire on your electronic device. You will be asked to answer questions about ‘online consumer reviews’.

You should read the questionnaire carefully and answer all the questions in the questionnaire.

If you participate, you will be asked to read the instructions carefully, and then fill out this questionnaire completely.

In total, participating in this study will take approximately 15 minutes.

C. RISKS AND BENEFITS

You are unlikely to face risks by participating in this research.

This research is not intended to benefit you personally.

D. CONFIDENTIALITY

We will gather the following information as part of this research: Your self-reported response choice on the provided questionnaire, your experience with online customer reviews, your demographic information such as gender, age, nationality, and education level.

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information for the purposes of the research described in this form.

The information gathered will be coded. That means that direct identifiers will be removed and replaced with a code on the information provided. Only specific individuals have access to the code, meaning that they can re-identify the participant if necessary.

We will protect the information in electronic format by encrypting the file and limiting access to authorized researchers only.

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

F. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate and complete the survey questionnaire, you will receive \$0.6USD as compensatory indemnity for completing the questionnaire.

You will be free to discontinue at any time for any reason. However, you will not receive any compensation if you discontinue the study before completing it.

You can also ask that the information you provided not be used, and your choice will be respected. If you decide that you don't want us to use your information, you must request by contacting the researcher by January 15, 2022. To withdraw your data, you should provide your Worker ID for the researcher to match your data and remove it. The researcher will not have access to your personally identifiable information. However, you will not receive any compensation if you withdraw your data.

To make sure that research money is being spent properly, auditors from Concordia or outside will have access to a coded list of participants. It will not be possible to identify you from this list.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

G. PARTICIPANT'S DECLARATION

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

"I have read this form carefully and I agree to participate in the study."

- I agree.
- I disagree.

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is provided above. You may also contact their faculty supervisor.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

***Screening question: Frequency of reading online reviews (eliminate respondents <='rarely')**

How frequently do you read consumer reviews online?

Never	Rarely	Occasionally	Sometimes	Frequently	Usually	Always
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***General Online Review Experience:**

***Familiarity of Online Reviews.**

	Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
In general, I consider myself familiar with online reviews							
In general, I consider myself informed about online reviews							
In general, I consider myself knowledgeable about online reviews							

Choose the option that best matches with you

***Measuring online review credibility**

Choose the option that best matches with your opinion of online consumer reviews:

	Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
I think online consumer reviews are believable							
I think online consumer reviews are factual							
I think online consumer reviews are accurate							
I think online consumer reviews are credible							

<p>*Attention check: I think online consumer reviews are informative. For this statement, please select the answer choice "Agree"</p>								
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Please read the following online customer review about a restaurant named *Sizzler's Restaurant*. The review is taken from a restaurant review website.

Condition 1: Picture X No emotional expressions (negative incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining

Average ratings: 4.5/5 ★★★★★



Total reviews: 126

Jones, A.
1/5 ★☆☆☆☆
📷 2 photos

Not recommended at all! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were terrible.

The flaming sauce chicken looked good, but it was so flavorless! The brown rice accompanying it was dry. We also tried the tandoori chicken sandwich which was really bland.

Overall, an absolutely un-satisfying experience. This was my first time here but I don't see myself coming here again.

*Manipulation Checks:

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant

- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received negative comments about the restaurant

- 3) Picture (1: Strongly disagree; 7: Strongly agree)
 - The review included picture(s) of the product

Condition 2: Picture X No emotional expressions (positive incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining

Average ratings: 1.5/5 ★★☆☆☆

Total reviews: 126

Jones, A.



5/5 ★★★★★

📷 2 photos

Highly recommended! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were excellent.

The flaming sauce chicken looked good, and it was so flavorful! The brown rice accompanying it was perfect. We also tried the tandoori chicken sandwich which was really tasty.

Overall, an absolutely satisfying experience. This was my first time here and I am coming back for sure.



*Manipulation Checks:

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant

- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received positive comments about the restaurant
- 3) Picture (1: Strongly disagree; 7: Strongly agree)
 - The review included picture(s) of the product

Condition 3: No picture x emotional expressions (negative incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining

Average ratings: 4.5/5 

Total reviews: 126

Jones, A.
1/5     

NOT RECOMMENDED AT ALL! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were **TERRIBLE!!!**

The Flaming sauce chicken looked good, but it was sooo FLAVORLESS! The brown rice accompanying it was dry. We also tried the tandoori chicken sandwich which was reeeally bland.

Overall, an ABSOLUTELY UN-SATISFYING EXPERIENCE. This was my first time here but **I DON'T SEE MYSELF COMING HERE AGAIN!!** 😞😞😞

***Manipulation Checks:**

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant
- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received negative comments about the restaurant
- 3) Emotional Expression (1: Strongly disagree; 7: Strongly agree) (adapted from Baker & Kim, 2019)

- The reviewer expressed high level of emotion using bold and capital letters and emojis.

Condition 4: No picture x emotional expressions (positive incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining

Average ratings: 1.5/5 ★★☆☆☆

Total reviews: 126

Jones, A.
5/5 ★★★★★

HIGHLY RECOMMENDED! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were **EXCELLENT!!!**

The Flaming sauce chicken looked good, and it was sooo **FLAVORFUL!** The brown rice accompanying it was perfect. We also tried the tandoori chicken sandwich which was reeeally tasty.

Overall, an **ABSOLUTELY SATISFYING EXPERIENCE.** This was my first time here and **I AM COMING BACK FOR SURE!** 😊😊😊

***Manipulation Checks:**

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant
- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received positive comments about the restaurant
- 3) Emotional Expression (1: Strongly disagree; 7: Strongly agree) (adapted from Baker & Kim, 2019)
 - The reviewer expressed high level of emotion using bold and capital letters and emojis.

Condition 5: Both picture x emotional expressions (positive incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining

Average ratings: 1.5/5 ★★☆☆☆

Total reviews: 126

Jones, A.

5/5 ★★★★★

HIGHLY RECOMMENDED! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were **EXCELLENT!!!**

The Flaming sauce chicken looked good, and it was sooo FLAVORFUL! The brown rice accompanying it was perfect. We also tried the tandoori chicken sandwich which was reeeally tasty.

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*Manipulation Checks:

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant
- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received positive comments about the restaurant
- 3) Picture (1: Strongly disagree; 7: Strongly agree)
 - The review included picture(s) of the product

4) Emotional Expression (1: Strongly disagree; 7: Strongly agree) (adapted from Baker & Kim, 2019)

- The reviewer expressed high level of emotion using bold and capital letters and emojis.

Condition 6: Both picture x emotional expressions (negative incongruent)

SIZZLER'S RESTAURANT



Type: Casual/Family dining
Average ratings: 4.5/5 ★★★★★
Total reviews: 126

Jones, A.
1/5 ★☆☆☆☆

NOT RECOMMENDED AT ALL! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were **TERRIBLE!!!**

The Flaming sauce chicken looked good, but it was sooo FLAVORLESS! The brown rice accompanying it was dry. We also tried the tandoori chicken sandwich which was reeeally bland.

Overall, an ABSOLUTELY UN-SATISFYING EXPERIENCE. This was my first time here but **I DON'T SEE MYSELF COMING HERE AGAIN!!** 😞😞😞



***Manipulation Checks:**

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant
- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received negative comments about the restaurant
- 2) Picture (1: Strongly disagree; 7: Strongly agree)
 - The review included picture(s) of the product

3) Emotional Expression (1: Strongly disagree; 7: Strongly agree) (adapted from Baker & Kim, 2019)

- The reviewer expressed high level of emotion using bold and capital letters and emojis.

Condition 7: No picture x No emotional expressions (positive incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining
Average ratings: 1.5/5 ★★★★★
Total reviews: 126

Jones, A.
5/5 ★★★★★

Highly recommended! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were excellent.

The flaming sauce chicken looked good, and it was so flavorful! The brown rice accompanying it was perfect. We also tried the tandoori chicken sandwich which was really tasty.

Overall, an absolutely satisfying experience. This was my first time here and I am coming back for sure

***Manipulation Checks:**

1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)

- This review seems to be consistent with the other reviews about this restaurant

2) Valence check (1: Strongly disagree; 7: Strongly agree)

- This review received positive comments about the restaurant

Condition 8: No picture x No emotional expressions (negative incongruent)

SIZZLER'S RESTAURANT

Type: Casual/Family dining
 Average ratings: 4.5/5 ★★★★★
 Total reviews: 126

Jones, A.
 1/5 ★☆☆☆☆

Not recommended at all! We stopped by for lunch and ordered several dishes off their lunch menu, and almost all of them were terrible.

The flaming sauce chicken looked good, but it was so flavorless! The brown rice accompanying it was dry. We also tried the tandoori chicken sandwich which was really bland.

Overall, an absolutely un-satisfying experience. This was my first time here but I don't see myself coming here again

***Manipulation Checks:**

- 1) Inconsistency in Valence (1: Strongly disagree; 7: Strongly agree)
 - This review seems to be consistent with the other reviews about this restaurant
- 2) Valence check (1: Strongly disagree; 7: Strongly agree)
 - This review received negative comments about the restaurant

***Perceived Deception (PDOCR) (reverse coded in data analysis)**

Choose the option that best matches with your opinion:

1. The online review about *Sizzlers* that you have just read is:

Completely misleading	Mostly misleading	Somewhat misleading	Neutral	Somewhat accurate	Mostly accurate	Completely accurate
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2. In your opinion, the online review on *Sizzlers* restaurant seemed:

Completely deceptive	Mostly deceptive	Somewhat deceptive	Neutral	Somewhat truthful	Mostly truthful	Completely truthful
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3. The customer's review about *Sizzlers* restaurant found in the online review website are:

Completely distorted	Mostly distorted	Somewhat distorted	Neutral	Somewhat factual	Mostly factual	Completely factual
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***Purchase Intention**

Choose the option that is the most applicable to you:

1. If you were looking for a restaurant for tonight, your likelihood of going to the restaurant in the online review would be high

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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2. If you were to go to a restaurant, the probability that you would consider going to Sizzlers restaurant would be high

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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3. If you had to make a reservation in a restaurant for tonight, your willingness to make the reservation at Sizzlers restaurant would be high

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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4. ***Attention check** If you were planning to go to a restaurant for lunch tomorrow, the probability that you would consider going to Sizzlers restaurant would be high.

For this question, select the answer choice "Somewhat Agree"

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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***Homophily (in terms of geographic location)**

Select the option that best matches with your opinion of the reviewer (i.e. review writer).

1. Imagine you have to arrange a lunch meeting at a restaurant. You begin your search by reading online reviews about restaurants. There are some reviewers whose location

information tells you that they live in a nearby area close to where you live. In your opinion, the probability is high that those reviewer's reviews would be accurate:

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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2. Imagine you have to make a reservation in a restaurant for tonight, and after reading many reviews you come across some reviews which are written by people who share the same geographic location as yours, then it is more likely that those reviewers' reviews would be more trustworthy:

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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3. If you were to go to a restaurant for the coming weekend, the probability is high that the reviewers who reside in the same geographic location as you would provide more factual review:

Strongly disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
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***Cultural Values (Using Hofstede's 6 dimensions)**

1. Indulgence/Restraint

How closely do you agree with the following?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
One should enjoy complete sexual freedom without restriction							
Feelings and desires related to casual sex should be gratified freely							
There should not be any limits on individuals' enjoyment							
Societies should value relatively free gratification of desires and feelings							

Desires, especially with respect to sensual pleasure should not be suppressed							
Gratification of desires should not be delayed							

2. Power Distance (High vs Low)

Choose the option that best matches with your level of agreement/disagreement for the following:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
People in higher positions should make most decisions without consulting people in lower positions.							
People in higher positions should not ask the opinions of people in lower positions too frequently.							
People in higher positions should avoid social interactions with people in lower positions.							
People in lower positions should not disagree with decisions made by people in higher positions.							
People in higher positions should not delegate important task to people in lower positions.							
*Attention check: People in high positions should be not be considerate towards people in low positions. For this questions, select the answer choice "Neither Agree nor Disagree"							

3. Uncertainty Avoidance (High vs Low)

How closely do you agree with the following?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
It is important to have instructions spelled out in detail so that I always know what I am expected to do.							
It is important to closely follow instructions and procedures.							
Rules and regulations are important because they inform me as to what is expected of me.							
Standardized work procedures are helpful.							
Instructions for operations are important.							

4. Collectivism/Individualism

State your opinion on the following statements:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
Individuals should sacrifice self-interest for the group.							
Individuals should stick with the group even through difficulties.							
Group welfare is more important than individual rewards.							
Group success is more important than individual's success.							
Individuals should only pursue their goals after							

considering the welfare of the group.							
Group loyalty should be encouraged even if individual goals suffer.							

5. Long term/Short term orientation

How closely do you associate with the following qualities?

	Strongly Dissociate	Dissociate	Somewhat Dissociate	Neither	Somewhat Associate	Associate	Strongly Associate
Careful management of money							
Going on resolutely in spite of opposition							
Personal steadiness and stability							
Long-term planning							
Giving up today's fun for success in the future							
Working hard for success in the future							

6. Masculinity/Femininity

How closely do you agree with the following:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
It is more important for men to have a professional carrier than it is for a woman.							
Men usually solve problems with logical analysis, woman usually							

solve problems with Intuition.							
Solving difficult problems usually requires an active, forcible approach, which is typical of men.							
There are some jobs that a man can always do better than a woman.							
*Attention check: Men usually solve accounting problems better and women solve science problems better. For this question, select the option "Neither"							

Demographic information

Gender: I am:

- Female
- Male
- Other

Age: My age:

- 19 years or younger
- 20- 30 years old
- 31- 40 years old
- 41- 50 years old
- 51- 60 years old
- 61 years and above

Education level: My highest completed level of education

- High school
- College
- Undergraduate degree
- Graduate Degree
- PhD

Your nationality is

*drop down menu option provided to choose country name

Please enter you Mturk worker ID