# Consumer Coping Mechanisms and the Paradox of Deceptive Online Consumer Reviews (OCRs)

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Abstract:

Despite the increasing prevalence of deceptive online consumer reviews (OCRs), consumers continue to rely on them, with a growing number of consumers consulting reviews before making a purchase decision. We conducted two studies adopting the dual process theory and research on skepticism to address consumer coping methods in the context of deceptive OCRs. We first conducted a controlled, online, scenario-based, two-by-two, between-subject experiment, surveying 156 adults. We then conducted 17 in-depth one-on-one interviews to address the paradox found in our experimental studies. Our research shows that consumers spend less time browsing OCR platforms when primed for a high level of deceptive reviews than when they are primed for a low level, indicating that they do not invest additional time in deciphering fake from authentic reviews. In fact, consumers declare wanting to spend less time reading reviews when there is a high percentage of fake reviews. This is explained by their skepticism towards OCRs. With higher levels of fake reviews, consumer skepticism increases leading to aversion which in turn results in consumers wanting to spend less time reading OCRs. Our qualitative research shows that consumers seek OCRs because they believe that they can reduce their purchase risk and gain diagnostic information, despite being aware of the existence of fake reviews and deceptive practices, in part because they believe that they can decipher fake reviews from authentic ones by adopting coping mechanisms and using heuristics. Nevertheless, numerous studies show the contrary. Our research also indicates that there is a tipping point level, after which consumers would abandon OCR platforms. The research compliments research on OCRs and deceptive reviews and is a wake-up call for industry actors to both protect consumers as well as the OCR sector overall.

**1 Introduction**

Consumers continue to rely on Online Consumer Reviews (OCRs) despite heightened awareness of fake reviews in the broader public due to an increasing media coverage of deceptive online practices committed by firms. The media coverage includes high-profile and press-driven studies that show that a third of reviews on TripAdvisor (The Times, 2018) and 40% of reviews on Amazon were identified to be fake (Chicago Tribune, 2020). According to a recent survey of 3,265 consumers in the UK, 90% declared being concerned about fake content ('Power Reviews', 2022). A Google search on "fake reviews" conducted in November 2022 delivered over 1.13 billion search items, whilst a search of the term "deceptive reviews" delivered 536 million items.

The OECD defines deceptive reviews as 1) the creation of fake ratings and reviews by third parties (bots or human authors) who have not actually purchased the goods or services in question, 2) incentivized ratings and reviews (including via monetary and non-monetary rewards), and 3) misleading moderation practices (OECD, 2018)

Over the last few years, usage of OCRs has increased dramatically. Surveys show that up to 99.9% of US adults declare using OCRs when shopping online, up from 95% in 2014 (*Survey: The Ever-Growing Power of Reviews*, 2021). A number of academic studies have shown that consumers use OCRs on a regular basis when buying (de Langhe et al., 2016; Ismagilova et al., 2020; Zheng, 2021).

An increasing number of consumers include OCRs in their decision-making processes. Those increases in consumer usage coupled with their significant effect on commercial and financial performance has incentivized an upsurge in fake reviews and deceptive practices by firms. Over the last decade, there have been a growing number of studies published on fake and deceptive reviews. According to a recent literature review on deceptive reviews conducted by Wu et al. (2020), of the 165 academic journal articles published on the subject between 2010 and 2019, 67% appeared in the last three years. The literature shows that there are substantial financial motivations for manipulating reviews, as they have a significant impact on sales, brand reputation and equity, and financial performance (de Langhe et al., 2016; Rosario et al., 2020; Sayfuddin & Chen, 2021; Tirunillai & Tellis, 2012).  Studies further show that the practice of producing and publishing deceitful ratings has a large effect on sales (He et al., 2022).

The paradox of the rising reliance on OCRs despite an awareness of deceptive practices is potentially explained by the fact that consumers believe they can detect authentic reviews

from deceptive ones. Researchers have explored the area of trust and credibility in the context of OCRs (Clare et al., 2018; 2016; Racherla et al., 2012;), as well as how consumers employ tactics to identify fake reviews (Munzel, 2015, 2016; Plotkina & Munzel, 2016; Pyle et al., 2021; Salminen et al., 2022; Wu et al., 2020). Studies show that consumers are poor detectors of deceptive reviews, underperforming AI and machine learning software and performing just above chance (Plotkina & Munzel, 2016; Salminen et al., 2022). Research reveals that the deceptive practices ultimately harm consumers (He et al., 2022; Malbon, 2013; Salminen et al., 2022) and undermine market efficacy (He et al., 2022). The present study aims to further shed light on this apparent paradox by understanding how Internet users cope with an increasing awareness of deceptive reviews while including OCRs in their decision-making processes. In a three-step approach, we probe the effects of fake reviews on (1) a behavioral variable (i.e., time spent browsing an online review site) before (2) investigating the mechanisms at play through an analysis of the role that skepticism has in the process. Finally, we attempt to understand the observed mechanisms further through (3) a series of qualitative interviews.

**2 Conceptual Framework**

We draw from literature on the dual process theory developed to explain the thought process consumers use when making decisions (Kahneman, 2013), and use the Elaboration Likelihood Model (ELM) developed by Petty and Cacioppo (1986) to determine consumer information processing strategies used in navigating persuasion material, which can include promotional communication material such as advertising but also earned media and customer reviews. According to the theoretical underpinnings, individuals employ either central or peripheral routes when making decisions. The central route involves an assessment of the information, of the quality of the argument, as well as the perceived credibility and accuracy. In contrast, the peripheral route includes the use of heuristics, and reliance on the emotion and aesthetics of the communication (Samson & Voyer, 2012). Consequently, consumers employ the central route when they are both motivated and they possess the ability to process information. They employ the peripheral route when their interest in the subject is low or when they do not possess the ability to process the information.

The literature on OCR evaluation in the context of deceptive reviews shows that consumers measure the credibility of the reviews using cues and heuristics (Filieri, 2015; Munzel, 2016) identifying authentic reviews, for instance, based on the quality of the information provided (Filieri, 2015) and by employing several indicators such as the length of

the text, the language used, and the presence of one -sidedness versus two-sidedness in the reviews (Costa et al., 2019; Filieri, 2015, 2016).

To the best of our knowledge, no study has explored the impact of deceptive reviews on the time spent browsing OCRs, indicating a gap in the literature. Drawing from research on the dual process theory, we would assume that consumers primed for a low (manageable) level (10%) of deceptive reviews could spend more time browsing the OCR platform by employing the central route as they are tasked with both gaining diagnostic information and detecting authentic reviews from fake ones. Nevertheless, when the level of fake reviews on an OCR platform reaches a high (40%) level, we would assume that they would employ the peripheral route and thus spend less time browsing the OCR platform. We thus posit that:

**H1 Consumers primed to believe there is a very high level of fake OCRs will spend significantly less time browsing the OCRs as compared to consumers primed to believe there is a low level of fake reviews.**

Inferring from literature on ELM (Petty & Cacioppo, 1986; Samson & Voyer, 2012), we would further assume that consumer desire to browse an OCR platform with a high level of fake reviews would decrease. We thus assume:

**H2 The level of fake online reviews will negatively impact the desire to browse OCRs.**

Research on the effects of consumer skepticism toward advertising conducted by Obermiller, Spangenberg, and MacLachlan (2005) found that more skeptical consumers place less attention and reliance on advertising. Their studies showed that skepticism is associated with avoidance of advertising. We thus posit that consumers who are primed to believe that there is a high level of fake reviews (40%) will also have a higher level of skepticism towards these reviews. Extrapolating their findings to OCRs, we posit that skepticism towards OCRs is associated with lower attention, and thus lower time spent browsing. We thus extrapolate and form the following hypotheses:

**H3 The effect of the level of fake online reviews on the desire to browse OCRs is mediated by skepticism.**

**3 Study 1 - Experiment**

*3.1Purpose and Method*

We developed an experiment to address our hypotheses using a controlled, online, scenario-based, two (purchase involvement: high, low)-by-two (percentage of fake reviews: high, low), between-subject design (Charness et al., 2012). The scenario consisted of an experimental vignette (Aguinis & Bradley, 2014) involving a restaurant-booking simulation. During the experiment, we randomly assigned participants to one of the four groups. We chose a restaurant specific service context rather than a product context because services are intangible and therefore an evaluation before consumption is not possible, resulting in participant willingness to engage in information-seeking behavior (Reimer & Benkenstein, 2016). Additionally, we chose a fictitious restaurant to assure that all participants would have an equal unfamiliarity with the context. We asked participants to browse the FoodAdvisor OCR platform which we created for the experiment. We recruited a final sample of 156 participants (50% were male, average age of 37) using convenience samples via Prolific, a crowd-working platform that academics have found to be suitable for recruiting subjects for social and economic science experiments (Palan & Schitter, 2018).

We measured the overall time participants spent browsing the created website Food Advisor and manipulated the independent variable, percentage of fake reviews, in the experiment. Furthermore, we included three questions from the skepticism towards Advertising scale developed by Obermiller & Spangenberg (1998) such as "belief that online consumer reviews are generally truthful" to measure skepticism.
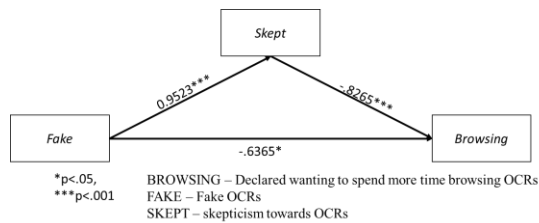
### 3.2 Results and Discussion

We used IBM SPSS 12 and the Process 4.1 macro by Hayes (2021) to conduct our analysis. We conducted a simple regression analysis to determine whether the level of fake (Low = 10%, High = 40%) significantly predicted the time spent browsing and found that the overall regression was statistically significant ($R^2 = 0.035$, dF (1,157), F=6.082, p=0.015). The fitted regression model was: $y_{Browsing\ time} = \beta + \beta x_{Fake}$. Because the browsing time was not normally distributed, we also performed a Mann-Whitney test which revealed that the difference in median OCR browsing time between the low (mean rank=87) and high fake (mean rank=73) groups was statistically significant, $U(N_{low} = 80, N_{High}=79,)=2586, z=-1.977, p=.048$. *Hypothesis H1 was supported.*

A one-way ANOVA demonstrated that the effect of higher fake was significant for the declaration of wanting to spend more time browsing the OCR platform($M_{LowFake} = 4.54$, SD=1.47, $M_{HighFake}=3.11$, SD=1.41, $F(1,159) = 38.8$, p < .001) and for the declaration of

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wanting to read more reviews ($M_{LowFake}$=4.75, SD=1.53, $M_{HighFake}$ = 3.25, SD=1.55, F(1,159)=37.6, p < .001). *Hypothesis H2 was supported.*

To test the expected mediation of hypothesis H3, we performed a mediation analysis to assess the role of skepticism (*Skept*) in the effects of the level of fake reviews (*Fake*) on declared browsing time (*Browsing*). The results reveal a significant indirect effect of *Fake* on *Browsing* through *Skept* (β= -0.787, t =-7.32, p< 0.001). The total effect of *Fake* on *Browsing* was significant (β= -1.4236, t=-6.230, p<001), with the inclusion of the mediator the effect of *Fake* on *Browsing* was still significant (β= -637, t =--2.83, p< 0.001). This shows that *Skept* partially mediates the relationship between *Fake* and *Browsing*. *Hypothesis H3 was supported.*

*Figure 1 Mediation Model Study 1*



*p<.05,      BROWSING – Declared wanting to spend more time browsing OCRs
***p<.001    FAKE – Fake OCRs
             SKEPT – skepticism towards OCRs
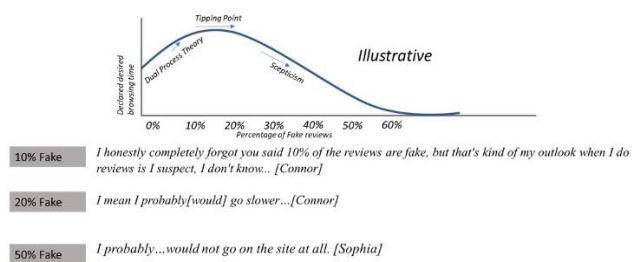
## 4 Study 2 - Interviews

### 4.1 Purpose and Method

While the findings of study 1 highlight the effects of fake reviews on time spent consulting OCRS - from both a behavioral and a declarative perspective - and introduce skepticism to understand the mechanisms at play, we conducted a qualitative study (i.e., Study 2) to supplement the results and further understand the observed mechanisms from our experiment (i.e., Study 1) (Clare et al., 2018; Creswell & Poth, 2016). We interviewed 17 adults including 13 women and 4 men (average age = 40, min = 19 and max = 76) based in the USA and Europe using a convenience sampling strategy, adding additional interviews on an ad-hoc basis to reach saturation (Creswell & Poth, 2016; Fusch Ph D & Ness, 2015). We conducted one in-depth interview per participant, lasting an average of 40 minutes (min 24 mins, max 79 mins), over Zoom using the video and screen sharing functionalities. We thus obtained 179 pages of interview transcripts, with 176 pages of notes and 673 minutes of videos. We used the same online purchase decision simulation as in study 2 using the same fictitious FoodAdvisor OCR platform and primed participants to be aware of the presence of fake online reviews and used semi-structured and open-ended questions (McCracken, 1988) around their OCR browsing behavior and coping mechanisms in the context of the presence of fake online reviews.

*4.2 Results and Discussion*

In Study 2, participants stated they seek OCR exposure for purchase decisions, despite being aware of the presence of fake reviews, because of the diagnostic information that they can attain from the reviews, in line with research conducted by Salminen et al. (Salminen et al., 2022). They stated that they were able to identify fake reviews from authentic ones using cues and heuristics.

*Figure 2 Relationship Between Declared Browsing Time and Percentage of Fake Reviews, Study 2*



The results from the interviews complimented our findings on actual and declared desired browsing time from the experiment in Study 1. For instance, when prompted for a 20% deceptive review level, some participants stated that they would spend more time reading reviews, in line with our results as well as what we would expect given the dual process theory (Kahneman, 2013). Participants voiced using heuristics and employing coping mechanisms when the perceived percentage of fake reviews was relatively low, such as mainly reading 1-star ratings. Nevertheless, when we prompted a higher percentage of fake reviews which neared a tipping point of about 30-50% (depending on the individual), most declared wanting to abandon the OCR platform and searching for product and service information elsewhere, including through WOM, Google searches, company websites, and other OCR platforms, in line with what we would expect given research around skepticism (Obermiller et al., 2005). Furthermore, the interviews pointed towards a curvy-linear relationship between desired OCR browsing time and percentage of fake reviews (see Figure 2 above).

**5 General Discussion and Conclusions**

We found that consumers spend less time reading OCRs when the level of deceptive reviews is high, in line with their declared intention. They declared wanting to spend less time reading reviews when primed for a high percentage of fake reviews, in part driven by skepticism towards OCRs. Our research indicates that there is a tipping point level, after which consumers

would abandon OCR platforms. Further research could explore the curvilinear effect of fake reviews on browsing time at levels of fake below and above the tipping point.

Our research shows that consumers continue to use and value OCRs despite being aware of the presence of fake reviews. This is in part because 1) they believe that they can decipher fake reviews from authentic ones and 2) they perceive being able to gain diagnostic information from reading reviews.

Our research contributes to the literature on deceptive OCRs, complimenting research that shows that humans underperform machine learning software and perform just above chance in deciphering fake versus authentic reviews (Plotkina & Munzel, 2016; Salminen et al., 2022) and builds on research on consumers' use of cues and heuristics to identify authentic reviews (Filieri, 2015; Munzel, 2016).

The results are a call-to-action to the main players in the industry, including governments and consumer authorities, and OCR platforms who should engage in practices and actions to deter and penalize actors who engage in deception around OCRs, both to protect consumers as well as the OCR sector overall.

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