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## **Facing the Multifaceted Impact of Fake Reviews: A Comprehensive Literature Review**

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# Facing the Multifaceted Impact of Fake Reviews: A Comprehensive Literature Review

## Research Paper

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**Abstract.** Online reviews became an essential source of knowledge during consumers' online decision-making process. In recent years, the crucial role of online reviews has incentivized fraudsters to game the review system by writing self-promotional fake reviews or bad-mouthing competitors. While detecting fake reviews has become an important task for scholars and practitioners, research on the impact of fake reviews is still limited and distributed across disciplines. Therefore, we conducted a systematic literature review to synthesize empirical and theoretical research findings on the impact of fake reviews. Our findings show that fake reviews are not only a competitive and economic but also a social problem. Moreover, fake reviews undermine the importance of online reviews as quality signals in online decision-making processes. In this paper, we identified research gaps and derived recommendations for future research and practice.

**Keywords:** Online Reviews, Fake Reviews, Impact, Systematic Literature Review, Digital Platform

## 1 Introduction

Today, many platforms offer consumers the opportunity to submit online reviews after a purchase or booking. Online reviews serve as an independent, valuable, and public source of information about a product or service quality (Cheng et al. 2020, Lappas 2012) and affect consumers expectations (Mauri & Minazzi 2013, Qazi et al. 2017), online trust-building (Hesse & Teubner 2020), and decision-making (Chakraborty 2019, Dellarocas et al. 2007). Moreover, online reviews affect businesses' reputation and their transactions and revenue (e.g., Anderson & Magruder 2012, Luca & Zervas 2016).

Over the last few years, the power of reviews has increasingly incentivized fraudsters to game the review system by writing or buying fake reviews. Thus, besides the importance of online reviews for building and maintaining trust, the question of reviews' trustworthiness has arisen. According to various former estimates, 10-20% of all online reviews are fake (e.g., Hu et al. 2012, Luca & Zervas 2016, Schuckert et al. 2016). Fraudsters are often driven by financial profit or competition and, thus, generate fake reviews to promote their reputation and products or to discredit competitors (Mayzlin et al. 2014, Nie et al. 2022). Moreover, the fabrication of fake reviews emerges as a new

business model by which people pay for review-posting services. Further, businesses can incentivize fake reviewers through social network sites and refund the item after the review was submitted (He, Hollenbeck & Proserpio 2022).

If customers rely on fake reviews that do not represent the items' real quality, the purchased product does not meet consumers' needs (Lappas 2012). As “[o]nline reviews are only as good as the value they provide to users” (Carbonell et al. 2019, p.3), the prevalence of fake reviews on platforms means that customers have to think critically about their beliefs and decision-making based on online reviews (Hu et al. 2012). In the worst case, online reviews may lose their credibility (Tang & Cao 2020) and be viewed as less helpful by users in the future.

Consequently, the awareness for fake reviews has increasingly become crucial for practitioners and academia. Many studies focus on fake review detection to tackle the review manipulation problem. Although these studies often motivated their approach by fake reviews' impact (e.g., Alsharif 2022, Birim et al. 2022, Li, Wang, Yang, Zhang & Yang 2020), the impact of fake reviews has not been researched thoroughly (Yin et al. 2019). The reasons lie in the difficulties in observing and examining the impact of fake information on consumer decisions over time (Wessel et al. 2016), the missing truth about actual manipulation, the lack of a database with the review history dynamics (Zhang et al. 2019), and review manipulations complexity (Paul & Nikolaev 2021, Peng et al. 2016). Further, detection approaches are reactive, require high-quality training data, and are platform-specific (Paul & Nikolaev 2021). Thus, so far, no detection approach can fully solve the review manipulation problem.

The problem of missing studies on the impact of fake reviews strongly relates to the problem of fake review detection. Nevertheless, some studies focus on fake reviews' impact by trying to circumvent the detection problem using platform-filtered, lab-generated, or bot-generated reviews (He, Hollenbeck, Overgoor, Proserpio & Tosyali 2022). Wu et al. (2020) and Ansari & Gupta (2021) already conducted a literature review on fake reviews. Still, both literature reviews provide no detailed view of research on fake reviews' impact. Additionally, researchers increasingly focus on fake reviews, and the number of studies steadily increases. To the best of our knowledge, no research explicitly investigates the status quo of research on the impact of fake reviews. To address this gap in the academic literature, we perform a systematic review of the existing empirical and theoretical fake review literature to synthesize and comprehend (*RQ*) *what is known about the impact of fake reviews?*

The remainder of the paper is structured as follows. Firstly, we define the fake review and impact term and describe our literature search strategy, data extraction, and synthesis in Section 2. In Section 3, we present our literature review results, including summary statistics, fake reviews' impact, and employed theories. We finish this paper with our discussion, limitations, and theoretical and practical implications in Section 4.

## 2 Methodology

We conducted a systematic literature review to assess the status quo of research on the impact of fake reviews. Webster & Watson (2002) guided our methodology approach. Moreover, we also consider the guidelines by Kraus et al. (2022) for literature reviews

as independent studies. In this section, we first define the terms *fake review* and *impact* used in this work and subsequently present our methodological approach to literature search, extraction, and synthesis.

## 2.1 Fake Review and Impact Definition

Even though the term *fake review* has been used in numerous articles in recent years, no unified definition exists (Wu et al. 2020). According to the taxonomy by Wu et al. (2019), truly fake reviews refer to shameless promotion and malicious slander, meaning fake reviews are often spread to improve reputation or to demote competitors' products or services (e.g., Hu et al. 2012, Luca & Zervas 2016, Mayzlin et al. 2014). Further, they mislead consumers in their decision-making (Ansari & Gupta 2021, Wu et al. 2020). Fake reviews can also be incentivized, e.g., using money or discounts (Thakur et al. 2018, Wang et al. 2018).

Following most researchers, we define fake reviews as *promotional and defamatory reviews that try to mislead consumers*.

The term impact can be defined as "*the powerful effect that something has on somebody/something*" (Oxford University Press 2023). In this paper, we aim to identify fake reviews' impact on different mechanisms and actors that have been examined in the platform economy research. To the best of our knowledge, no uniform taxonomy or classification of the impact term exists. Depending on the context, different types of impact can be distinguished, e.g., economic, technological, socioeconomic, or environmental impact.

## 2.2 Search Strategy and Inclusion Criteria

Inspired by Kraus et al. (2022), we define the following criteria for our keyword-based search. Firstly, we searched the scientific databases Web of Science (WoS), Scopus, AIS eLibrary (AISeL), and IEEE Xplore for scholarly articles. We considered relevant documents on the topic and the prerequisites of all four databases (e.g., number of words, wildcards, and boolean operators) to compose a search string. We then performed a keyword search with our refined search string presented in Figure 1. Due to the limited number of words in the databases, we focus on neutral keywords and synonyms (e.g., impact and consequence) and not on keywords with negative (e.g., disadvantage) or positive (e.g., advantage) connotations. Our search covers research from 2010 to 2024 (March). We narrowed our search to results focusing on fake reviews and their impact in the context of digital platforms. We assumed the search string would be mentioned in the title, keywords, and abstract. We searched for articles (also early access and review articles) and conference papers to include work-in-progress and peer-reviewed finalized work. To ensure high-quality documents, we excluded, e.g., keynotes and books. Regarding the language, we considered English and German documents.

Further, we conducted a backward and forward search that supplemented our keyword-search results.

### 2.3 Data Extraction and Literature Synthesis

Figure 1 visualizes our search and data extraction process in all four databases and our results in each step. After searching in all four databases and filtering the results based on the aforementioned criteria (year, publication type, title/abstract/keywords, and language), we screened the abstract of 4,216 documents in Step 2. Many articles focus on fake review detection and note the impact of fake reviews only as a motivation for their research (e.g., Alsharif 2022, Budhi et al. 2021, Cheng et al. 2021). Other articles focus on (1) fake news and its impact (e.g., Gupta et al. 2022, Watts et al. 2021) or (2) fake identities (Akhtar et al. 2020). These articles were not considered in our review.

Based on the abstract, we saved the articles that appear promising in addressing our research objective for full-text screening in Step 3. Afterward, we started our full-text reading process. For all relevant articles, we used tags to structure all findings and mark references that may be interesting for the backward search. Furthermore, we added notes, e.g., about the context or findings, for all relevant articles and tagged duplicates. Step 4 shows that the most relevant articles were found in Scopus (39). Still, as we started our search process with WoS, we deleted 25 duplicates for Scopus (22 WoS and three IEEE Xplore duplicates). Moreover, we excluded two literature reviews; one of them was also a Scopus duplicate. At the end of our data extraction process, we had 25 WoS, three IEEE Xplore, no AISEL, and 14 Scopus results. After our keyword-based search, we read all tagged references for our backward search in Step 6. Through our backward search, we identified twelve relevant articles (ten for WoS, one for IEEE Xplore, and one for Scopus). Finally, we used Google Scholar to check all *cited by* references for our forward search and identified ten new articles (eight for WoS and two for Scopus). We finished our initial data extraction with 64 articles.

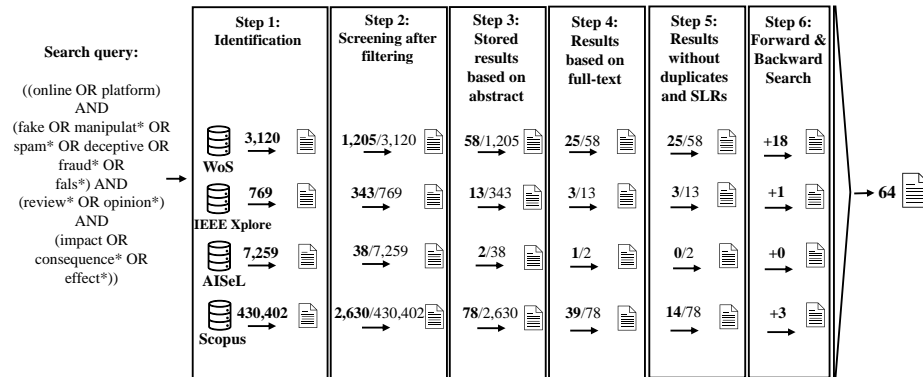


Figure 1. Search process

We carefully re-read and compared all articles identified from the search and data extraction process for the content analysis. Subsequently, two coders conducted the content analysis and classified the articles concerning the theories employed (e.g., Signaling Theory), the context (e.g., eCommerce), the type of fake reviews (positive/negative), and the impact type. Regarding the impact type, we coded the mentioned impact into two

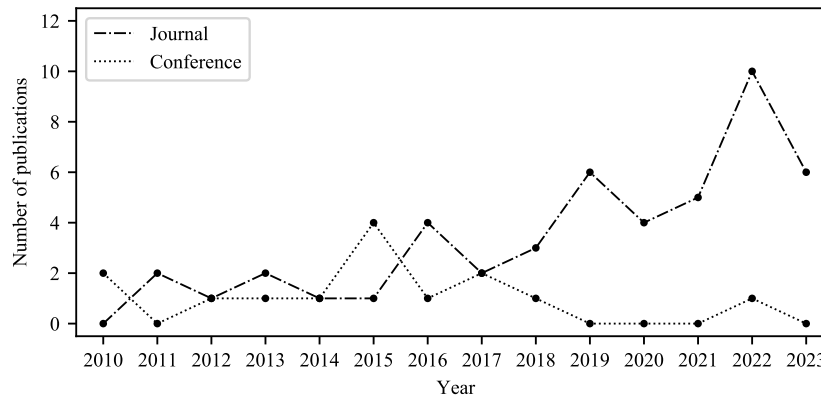
main categories (economic and social impact) with several subcategories each, which we identified during the coding process. The chosen classification is not exclusive. Some aspects may overlap multiple categories to some extent.

### 3 Results

In the following, we describe our results, starting with a brief overview of our sample, then key findings regarding fake reviews' impact, and ending with employed theories.

#### 3.1 Summary Statistics

Our initial search considered conference and journal articles published between 2010 and 2024 (March). During our backward search, we included the paper of Dellarocas (2006), and during our Forward Search, the paper (book chapter) of Román et al. (2023) in our sample. Both provide relevant insights into fake reviews' impact. As illustrated in Figure 2, research on the impact of fake reviews already received attention between 2010 and 2014. The research on the topic become a more notable trend over the years, with an observable upward trend since 2015 and a peak in 2022. Most of the studies (49) have been published in journal articles, emphasizing fake reviews as a relevant research field. In contrast, the publications in conferences are noticeably limited.



**Figure 2.** Number of identified articles ordered by publication date and type

Table 1 visualizes that research on the impact of fake reviews focuses mainly on eCommerce. This fits with Mayzlin et al. (2014), who show that fake reviews are common in eCommerce. Furthermore, research on fake reviews' impact on tourism and restaurant platforms plays a significant role. Other contexts include fake reviews' impact, e.g., on reward-based crowdfunding, social network sites, and virtual brand communities. Analyzing the type of fake reviews reveals 26 studies investigating the impact of positive fake reviews, one study investigating exclusively negative fake reviews, and 37 studies considering both positive and negative fake reviews. Regarding the impact, most studies focus on the economic impact of fake reviews, which we describe first. Afterward, we focus on fake reviews' social impact.

**Table 1.** Overview of the contexts in which the impact of fake reviews was analyzed; Truong Du Chau et al. (2024) focus on two contexts

Context	Source	#	%
eCommerce	Ansari et al. 2018, Cao 2020, Chen & Li 2022, Chen et al. 2022, He, Hollenbeck & Proserpio 2022, He et al. 2023, Hu, Bose, Gao & Liu 2011, Hu, Liu & Sambamurthy 2011, Hu et al. 2012, Jabr 2022, Jin Ma & Lee 2014, Karabas et al. 2021, Kollmer et al. 2022, Lappas 2012, Lau et al. 2010, Li et al. 2021, Malbon 2013, Ong et al. 2013, Park et al. 2021, Peng et al. 2016, Petrescu et al. 2022, Román et al. 2019, 2023, Wang et al. 2022, 2023, Wu et al. 2019, Wu & Qiu 2023, Xu et al. 2015, Yin et al. 2019, Zhang et al. 2017, Zhao et al. 2013, Zhao & Zhang 2020, Zhong et al. 2021, 2023	34	53.3%
Tourism	Filieri et al. 2015, Gössling et al. 2018, 2019, Lappas et al. 2016, Sigala 2017, Song et al. 2017, Truong Du Chau et al. 2024, Wu et al. 2010, Zhuang et al. 2018	9	13.8%
Restaurants	Ananthkrishnan et al. 2015, 2020, Hlee et al. 2021, Li, Meng & Pan 2020, Luca & Zervas 2016, Siering & Janze 2019, Steur et al. 2022, Truong Du Chau et al. 2024, Zhang et al. 2019, 2022	10	15.4%
Others	Dellarocas 2006, Feng et al. 2018, Kim et al. 2023, Liu & Zhou 2016, Lee et al. 2014, 2015, Ma et al. 2019, Ren et al. 2017, Shih et al. 2022, Wessel et al. 2015, 2016, Wokes et al. 2022	12	18.5%

### 3.2 Economic Impact of Fake Reviews

**Reviews as a Quality Signal:** Review systems can be efficient in reducing information asymmetries in online markets. Due to the use of fake reviews, consumers might not overcome information asymmetries as reviews might no longer work as quality signals (Chen & Li 2022, He et al. 2023). Even though consumers are convinced to detect fake reviews, this is often not the case, which can lead to a loss of confidence in the marketplace, and consumers might leave the platform (Malbon 2013). Further, when fake reviews decrease consumers' trust in reviews, competition within a market can be reduced (Malbon 2013) and developing a lemon market<sup>1</sup> can be a real problem.

**Rating Distortion:** Truong Du Chau et al. (2024) show that fake reviews can successfully promote a target item and lead to an increase in the product ranking. Further, fake reviews can contribute to a large dispersion of ratings because their distribution is more extreme compared to legitimate reviews (Luca & Zervas 2016). Fraudsters seem to boost their rating after it declines (Hlee et al. 2021). Siering & Janze (2019) found that after critical health inspection, the average rating increased for restaurants in lower star groups. The authors found indications for an increase in review manipulation that led to these changes. However, He, Hollenbeck & Proserpio (2022) show that fake reviews' effects on the average rating are short-lived. In the long term, the average rating falls significantly after retailers stop recruiting fake reviews and return to pre-promotional levels or lower due to an increase in one-star reviews submitted by unsatisfied customers. Xu et al. (2015)

<sup>1</sup> e.g., providers of high-quality products or services are pushed out of a market

investigated the impact of seller-reputation-escalation markets on seller's reputation. These businesses operate as a crowdsourcing marketplace for Taobao stores, where online sellers find individuals who conduct fake transactions to boost their reputation. Compared to genuine reviews, using such services can increase a seller's store reputation at least ten times faster.

Song et al. (2017) demonstrate that excluding low-quality reviews (likely fake) can eliminate rating distortions. Further, review distortion caused by fake reviews is more serious than losing information when excluding low-quality reviews.

***Purchase Intention and Decisions:*** The impact of fake reviews on consumers' purchase decisions seems to depend on their perception of review manipulation (Zhong et al. 2023). When consumers are aware of manipulation tactics, intentionally deleting or hiding reviews is particularly problematic, leading to negative purchase intentions (Peng et al. 2016). Jin Ma & Lee (2014) found that after respondents were aware that retailers had manipulated positive reviews, their purchase intention decreased considerably. However, when consumers do not perceive fake reviews, they affect purchase decisions positively. Zhuang et al. (2018) found that adding positive reviews and deleting or hiding negatives leads to higher purchase intention, especially since the strategy of deleting negative reviews is harder to detect. However, excessive manipulation raises consumer suspicion and negatively affects product performance. Also Kollmer et al. (2022) show that an increasing density of deceptive characteristics in reviews increases consumers' suspicion, which decreases their purchase intention. Additionally, consumers who realize review manipulation will not purchase again from that manipulative company or retailer and try to warn others by vindictive complaining (Román et al. 2019). However, consumers' preference for a product can decrease their suspicion of the product's reviews (Ren et al. 2017).

***Sales, Prices, and Manipulation Costs:*** A higher degree of positive reviews can promote consumers' purchase choices (Yin et al. 2019) but only to a certain extent because sales decline when a product looks too good and positive reviews do not seem credible. Similarly, Wang et al. (2023) found that the short-term manipulation of review quantity positively affects sales, but after a threshold, the effect becomes negative. Review quality manipulation positively affects product sales regardless of the manipulation duration. He et al. (2023) found when sellers stop buying fake reviews, sales fall significantly in the long term, even to pre-promotional levels or lower. While Lau et al. (2010) found no indications that promotional review spam increases product sales, they found that negative review spam can damage a firm's sales.

In the context of movies, findings of Ma et al. (2019) indicate that the impact of review manipulation in the early stage of a movie's life cycle disappears two weeks after the release. However, the higher number of reviews led to an increase in revenue. Kim et al. (2023) show that fake reviews negatively impact box office revenue. Further, in a monopoly eCommerce market where a platform charges sellers transaction fees, fake reviews increase transaction costs for platform users and damage the platform's revenue (Chen & Li 2022).

Zhao & Zhang (2020) show that uncertainty about online reviews significantly affects product price optimization and profit maximization in a competitive online market. In a



quality-dominates-fit case (subjective quality evaluation dominates purchasing decisions), two competing retailers lower their prices to compensate consumers for uncertainty about online reviews. On the contrary, in a fit-dominates-quality case (perceived degree of fit dominates purchasing decisions), uncertainty about online reviews encourages both retailers to increase their prices to generate higher profits. Further, Wu & Qiu (2023) show that price competition is intensified after manipulation as low-quality sellers raise their prices and high-quality sellers decrease their prices. Thus, consumers can even benefit from high-quality sellers' lowered prices.

Besides possible profits, manipulation costs must also be considered. An increase in sales due to manipulation might lead to more genuine reviews in the future. Thus, fraudsters must invest in more fake reviews, especially low-quality sellers. Overall, sellers face a trade-off between the revenue gain in the current period and further costs for more fake reviews in the future (Dellarocas 2006).

***Fight-backs and Wisdom of Crowds:*** Park et al. (2021, Sect. 1) show that the ratings by others influence a consumer's review generation. Whereas a negative discrepancy ("worse than what I read") leads to negative reviews, a positive discrepancy ("better than what I read") leads to positive reviews. Negative review discrepancy leads to less satisfied consumers who write longer reviews with lower positive emotional intensity, adversely affecting the product's reputation and damaging a business in the long term (Li, Meng & Pan 2020). Thus, the negative discrepancy can lead to backfiring on firms that generate promotional fake reviews. According to Karabas et al. (2021), consumers perceived e-retailers more as trying to unfairly manipulate product reviews once exposed to the fact that reviews are not necessarily trustworthy. This leads to fewer positive product reviews. Moreover, consumers reacted least favorably to highly positive or perfect reviews. Zhang et al. (2019) found no significant difference in the average rating between before and after review manipulation. A reason might be the wisdom of crowds, meaning consumers' review writing behavior based on positive/negative discrepancy may limit the impact of fake reviews.

In the context of crowdfunding campaigns, Wessel et al. (2015, 2016) show that after a peak in participation, fake Facebook Likes can backfire as the number of backers' funding declines even to a lower point than before the manipulation.

Further, also firms' fight-backs are possible. Based on a game-theoretical approach, Li et al. (2021) show that the manipulation cost (risk cost) and competition intensity are decisive for executing review manipulation, e.g., if the fighter's unit risk cost is moderate, intensified competition triggers fight-backs; low competition intensity does not.

***Competition and Prisoner's Dilemma:*** Findings of Zhang et al. (2022) show that if a competitor aggressively solicits fake restaurant reviews, it enhances a restaurant to be more engaged in competition by soliciting more positive fake reviews. According to Dellarocas (2006), high-quality firms must invest in online reviews to remain competitive, and low-quality firms must invest to cover up their true low quality. In the presence of rivals, high-quality firms manipulate more when their quality is already better than the quality of their rivals (Lee et al. 2014). On the contrary, low-quality firms manipulate much less when their quality is better than the quality of their rivals. Zhang et al. (2017)

found that firms' competitive review manipulation can increase the value of information and benefit consumers. Nevertheless, the manipulation cost should be high to increase consumers' welfare and ease the prisoner's dilemma. According to Cao (2020), the prisoner's dilemma exists when both firms choose manipulation strategies even if they do not gain higher profits. This is more likely for low manipulation costs.

Gössling et al. (2018) conducted interviews with accommodation managers. Most of them reported not being involved in manipulation strategies, but few managers actively manipulated reviews. According to these managers, submitting self-promotional reviews is not unethical, whereas submitting negative fake reviews for a competitor is ethically unacceptable. Lappas et al. (2016) show that even limited injections of fake hotel reviews can significantly affect the attackers' visibility. From an attacker's perspective, the mixed manipulation strategy (self-promotion and competitors' demotion) is the best strategy (Lappas et al. 2016). Bad-mouthing competitors can undermine a competitor's product and reduce a competitor's market outcome, especially for unpopular products with more ratings before manipulation (Liu & Zhou 2016). However, due to better visibility, bad-mouthing can also boost the competitor's market outcome (Liu & Zhou 2016). In contrast to Lappas et al. (2016), Wu & Qiu (2023) show that review manipulation is a self-inhibition mechanism as it does not change the relative ranking of sellers' ratings. Nevertheless, manipulation leads to less dispersion among sellers. According to Cao (2020), review manipulation does not always hurt competitors as they can profit from the variance-increasing effect due to less credibility in product reviews, which can lead to increased heterogeneity in consumers' product evaluations.

### 3.3 Social Impact of Fake Reviews

***(Social) Welfare, Mental and Physical Health:*** Product reviews can mislead consumers when they make decisions based on inaccurate quality information, leading to less social welfare (Zhang et al. 2017). Li, Meng & Pan (2020) show that consumers are increasingly confused by deceptive reviews and might make erroneous purchase decisions. Especially consumers who are naive and unaware of manipulation suffer the most (Lee et al. 2014, 2015). Owners of small accommodation businesses reported that unjustified reviews affect them personally, e.g., regarding "*emotions of hurt, sadness, irritation, or anger*" (Gössling et al. 2018, p.491). 31.5% of surveyed aesthetic plastic surgeons reported mental health issues after defamation, like stress and depression; 10% reported physical health issues such as sleeplessness and excess alcohol (Wokes et al. 2022).

***Informativeness and Membership:*** In online opinion forums, honest consumer opinions can engage firms to reveal their knowledge of product qualities using manipulation to inflate the true rating (increased informativeness). But if the manipulation strategy decreases with the true quality of the firm, the forum's informativeness decreases and affects consumers badly (Dellarocas 2006). Hu, Liu & Sambamurthy (2011) show that manipulation decreases the informativeness of online reviews. Consequently, consumers might discard reviews as products with a higher mean rating do not represent higher quality. Thus, instead of reducing uncertainties, online reviews might enhance uncertainty (Hu, Liu & Sambamurthy 2011).

Findings of Feng et al. (2018) show that hyper reviews positively affect membership (feeling of belonging) and influence (member's participation), whereas defaming reviews hurt membership and influence.

**Consumers Trust, Perception, and Decision-making:** Consumer trust in reviews significantly decreases when they are aware of a company's involvement in review content manipulation (Jin Ma & Lee 2014). Their skepticism reduces the review credibility for search products (Román et al. 2023). However, displaying fraudulent reviews increases consumers' trust in the review portal (Ananthakrishnan et al. 2015, 2020).

Shih et al. (2022) show that the earlier fake reviews emerge, the more powerful influence they have later on consumers' beliefs and attitudes. Further, Ong et al. (2013) found that fake reviews are especially effective for products with fewer real reviews as they significantly increased consumers' quality perceptions.

Moreover, fake reviews influence all dimensions of perceived risk (economic, functional, and time risk), which affects consumer purchase intention negatively (Wu et al. 2019). A high proportion of fake reviews can lead to a decrease in consumers' credibility perception and a decrease in sales (Wang et al. 2022). Zhao et al. (2013) show that consumers update their credibility perception over time based on the similarity between their evaluation and the existing reviews. The existence of fake reviews reduces the effect of subsequent (authentic) reviews because consumers' credibility perception decreases.

Steur et al. (2022) show that inconsistent reviews did not always lead to a longer duration in transaction decisions, but inconsistent restaurant reviews with positive texts resulted in faster transaction decisions. Based on an eye-tracking analysis, Chen et al. (2022) show that the fixation dwell time and the fixation count for fake comments were not greater than those for real comments. Thus, consumers do not effectively process the content of fake reviews. Ananthakrishnan et al. (2020) show that users choose more carefully when displaying suspected fake review information.

### 3.4 Employed Theories

For clustering the most frequently employed theories, we consider the theory and its adaption, the research disciplines of the journal(s)/conference(s) that published the theory and adaption paper, and the research background of the theory papers' author(s). Our clustering can help find an appropriate theory for exploring the impact of fake reviews. It is not exclusive; most theories originally appeared in the field of psychology and have been adopted in other scientific fields later.

**Social Psychology Theories** focus on understanding human cognition and behavior as well as social interactions and group dynamics (social influence), e.g., how individuals perceive, interpret, and respond to fake reviews as a social stimulus, like the Attribution Theory (Heider 1958), Cognitive Dissonance Theory (Festinger 1962), Impression Formation Theory (Rozin & Royzman 2001), Social Comparison Theory (Festinger 1954), Social Influence Theory (Kelman 1958), and Wisdom of Crowds (Surowiecki 2005).

**Information and Communication Theories** revolve around the processing and manipulation of information, e.g., how the information contained in fake reviews is transmitted or interpreted, like the Information Theory (Shannon 1948), Information Processing

Theory (Miller 1956, Atkinson & Shiffrin 1968), Signaling Theory (Spence 1973), Interpersonal Deception Theory (Buller & Burgoon 1996), Information Manipulation Theory (McCornack 1992), and Theory of Source Credibility (McGinnies 1973).

**Decision-Making and Behavioral Theories** explore decision-making processes and behavioral patterns, e.g., to shed light on how fake reviews' content can influence consumer decision-making, like the Behavioral Theory (Shafir & Tversky 1992), Dual-process Theory (Eagly & Chaiken 1993, Kahneman 2011), Elaboration Likelihood Model (Petty & Cacioppo 1986), Expectancy-disconfirmation Theory (Oliver 1981), Hunt–Vitell Theory of Ethics (Hunt & Vitell 1986), Prisoner's dilemma (Rapoport et al. 1965), Herd Behaviour (Cialdini 1993), and the Self-selection Theory (Li & Hitt 2008).

**Technology and User Behavior Theories** examine the relationship between technology and human behavior, e.g., to explain how individuals' attitudes towards review systems shape their usage intention of such systems, like the Theory of Reasoned Action (Fishbein & Ajzen 1975) and the Technology Acceptance Model (Davis 1986).

## 4 Discussion and Conclusion

A growing number of scholars investigate the phenomenon of fake reviews; most focus on their detection. Our work provides a comprehensive overview of current knowledge on fake reviews' impact, focusing on the social and economic impact of fake reviews.

Fake reviews can distort online ratings and undermine their effectiveness as a quality signal. If the buyer experience differs from expectations based on fake reviews, this can lead to an increase in negative reviews due to negative discrepancies. Therefore, review manipulation can backfire. In the short term, fake reviews can lead to a better reputation and an increase in sales and revenues to a certain extent; but they can even worsen both in the long term. Especially when consumers are aware of review manipulation, this can negatively affect their purchase intention or repeat purchases. Consumers also become skeptical if a product looks too good or is overly praised. Further, manipulators must consider manipulation costs that can outweigh review manipulations' benefits. The impact of review manipulation on competition depends on various factors, such as the quality of products, manipulation costs, and manipulation strategies of competitors. Companies often face a trade-off decision between their own survival and the power of reputation (Gössling et al. 2018). Moreover, there is not only competition between hotels, restaurants, or sellers but also between platforms (Chen & Li 2022).

The social impact of fake reviews includes a decrease in consumer trust, negative effects on their attitude formation process and risk perception, and a decrease in social welfare. Defamation can also lead to mental and physical health issues of attacked actors.

Our approach is not without limitations. The first limitation concerns the literature search process and possible selection bias. This problem should be limited as we searched four databases and included as many studies as possible in our screening process. Moreover, the term fake reviews can be defined differently. For example, incentivized or product testers' reviews can also be included in future analyses. Expanding the term may lead to further results. In principle, a literature review represents the status quo of research. Since research on fake reviews has increased in recent years and will probably increase, our review needs to be continuously expanded.

#### 4.1 Theoretical Implications and Future Research

Combining our findings with the limitations and implications of the identified articles, we derive the following directions for future work.

Most studies focus on the impact of fake reviews on eCommerce platforms, particularly Amazon. The sharing economy is not represented, although fake reviews might appear on sharing platforms (Fergusson 2021). Thus, future work should focus on further platforms and distinguish between reviews on brand-neutral platforms and brand owner platforms (Peng et al. 2016). Future studies should also examine fake reviews in high-risk settings like health care or legal services (Ananthakrishnan et al. 2015, Román et al. 2023). Further, except the study of Wokes et al. (2022), all studies focus on promotional fake reviews or both positive and negative fake reviews. Thus, future work could focus more on demoting reviews (Shih et al. 2022, Wang et al. 2023) as they can be used strategically to harm competitors (see Section 3.2). Moreover, future studies should also consider further manipulation strategies, including incentivization (Cao 2020) or team manipulation (Wang et al. 2023). Additionally, future work could investigate how consumers perceive fake reviews, considering consumer characteristics, previous knowledge, and experience (Petrescu et al. 2022, Wang et al. 2022). Moreover, future research should include qualitative data (Ansari et al. 2018, Li, Meng & Pan 2020) as the majority focused on quantitative data. Lastly, to build research upon a more clearly labeled dataset, researchers could collaborate with industry partners.

#### 4.2 Practical Implications

Our findings should continue to motivate researchers and practitioners to pay close attention to fake reviews. The results from our literature review allow us to derive practical implications.

Most mentioned interventions refer to platforms, especially the review systems' design and fake review detection, e.g., focusing on text reviews, splitting the qualitative review component, and offering sorting/filtering options (Steur et al. 2022), weight reviews differently (Zhang et al. 2019), monitor reviews continually and respond to praise/criticism timely (Zhuang et al. 2018, Wokes et al. 2022), increasing the manipulation cost and make fake reviews costly using credibility mechanisms (e.g., Jabr 2022, Ananthakrishnan et al. 2020). Further, platforms should implement and improve fake review detection systems (Kollmer et al. 2022), display fake reviews or companies' fraudulent activities (Ananthakrishnan et al. 2015), add the number of filtered reviews (Román et al. 2023), choose confrontational strategies like directly respond to reviews (Lappas et al. 2016), impose heavy fines for manipulation, or kick manipulators off the platform (Li et al. 2021). Overall, it is important that the platform increase authentic reviews on their site, e.g., encourage consumers who post honest opinions (Shih et al. 2022).

Some interventions refer to regulators, e.g., to offer education programs about fake review practices for businesses and consumers or rewarding those that detect fake reviews (Malbon 2013, Petrescu et al. 2022). Further, they should monitor review platforms, introduce regulations to deal with review manipulation (Siering & Janze 2019), and develop consistent guidelines for legitimate reputation management (Zhuang et al. 2018).

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