

Profiling in Online Hotel Reviews to Overcome Fake Reviews

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ABSTRACT

Online reviews are a vital part of the decision path nowadays. Online reviews opinion could greatly improve consumers' ability to assess products. However, the validity of online reviews remains a concern. Generally, it is not known to what extent these reviews are authentic and truthful. Online business encourages synthesis of positive reviews for their own products and negative reviews for their competitors. In this paper, we undertake an analysis of fake reviews, examining online market environment that inspires or demoralize fake reviewing activity. We examine reviews of a hotel on two travel websites having different online review structure: one with reviewers' profiles and second with no reviewers' profiles. A sample size of 279 reviews was collected from both websites. We examined the difference in reviews for a hotel between the two websites. Further we illustrate that hotel has high ratings on website with no reviewers' profiles than with reviewers' profiles.

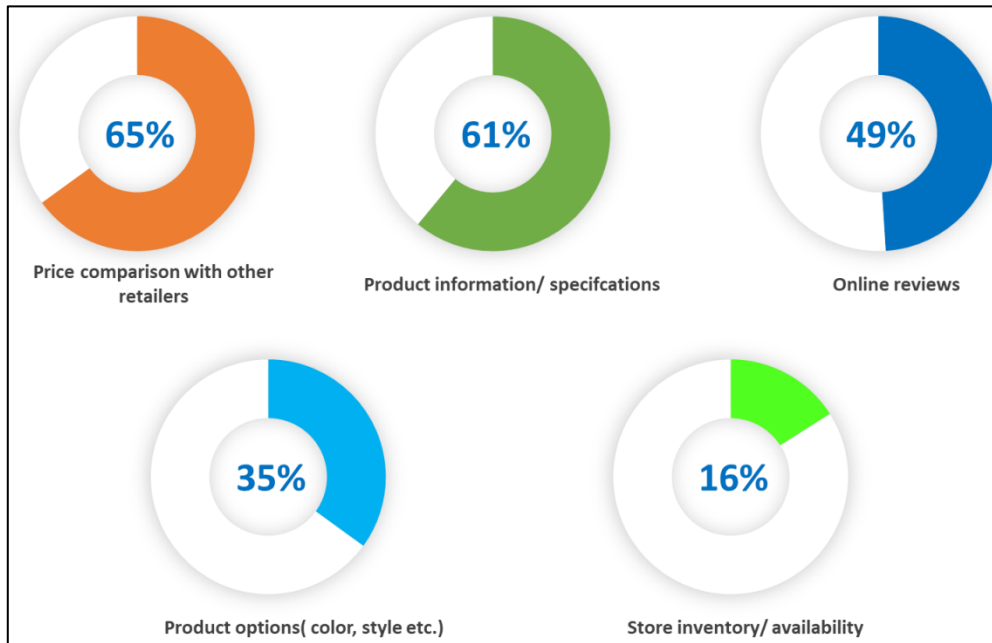
Keywords: Manipulation; authenticity; decision making; e-commerce; marketing strategies; fake reviews.

INTRODUCTION:

Online reviews are of great significance in the tourism and hospitality industry. Online reviews can be affirmative or negative and have considerably influenced the way companies apply their marketing strategies (Lee et al., 2008). An online review has two key roles, one as an informant, providing consumer oriented information about products and services, the other providing either positive or negative suggestions from previous users, making recommendations about a product or a service. While sellers provide mainly product-oriented information and technical specifications and standards, online reviews provide more consumer-oriented information (Lee et al., 2008). The travel industry has been growing fast in the electronic world at least within the service sector (Viglia, Furland & Ladrón de Guevara, 2014). Online product reviews are evolving as a vital factor in customers' purchase decision process, and are considered one of the most essential information sources for today's travellers (Kim et al., 2011; Litvin & Hoffman, 2012; Xie et al., 2014; Ye et al., 2011; Zhang et al., 2010).

Consumer reviews are a part of daily decision making process and it sets strategic significance for the e-commerce ecosystem. It also affects company's search rankings in search engines. Consumers depend massively upon consumer reviews while making decisions about which services & products to purchase online. Reviews cover most of the distant range of the internet and influence behavior in their search results. KPMG conducted an international study in 2016 on consumer behaviors and preferences related to online shopping. The research was mainly based on an online survey of 18,430 consumers living in more than 50 countries. The respondents were among the ages of 15 and 70, who have purchased at least one consumer product online in the past 12 months. Nowadays smartphones engage offline shoppers to be associated yet they may not be the most chosen online sales channel. Approximately over two-thirds of the consumers said they had used a smartphone for product exploration while physically shopping (Figure 1).

Figure 1: Percentage of consumers that looked up the following information about a product while in a shop



Source: Global Online Consumer Report, KPMG International, 2017

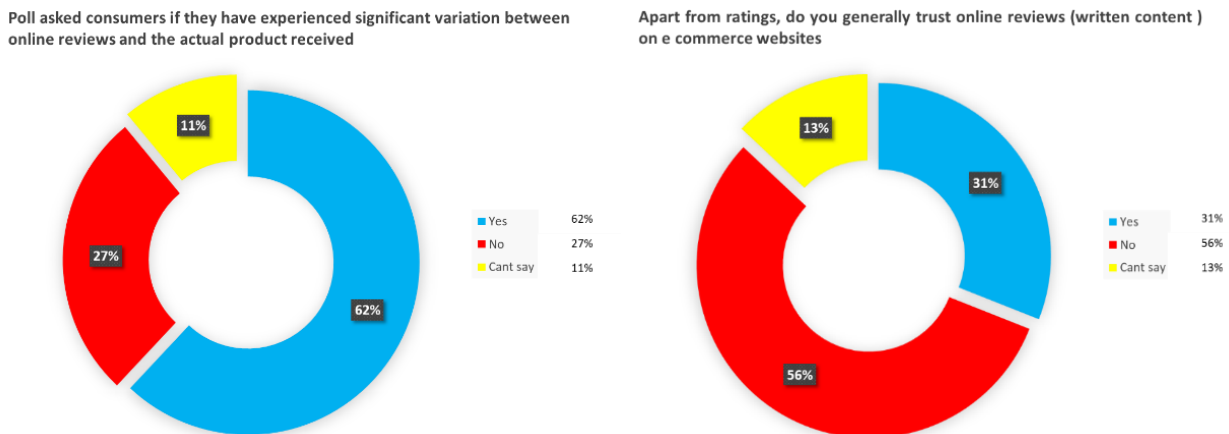
What consumers look for? Consumers compare prices, that was the main reason for doing online research while out shopping, followed by looking up product information and checking online reviews.

Rise in fake Reviews:

Online shopping is currently becoming popular in urban India. Currently, hundreds of thousands of consumers are now buying products from ecommerce sites every day. Millions of products are on sale on websites. Consumers reviews become very significant of the buying process, as the buyer looks to check on how was the experience of other buyers with that particular product. Many consumers think that a lot of these reviews are fake or planted. To find the combined consumer effect on this issue, a survey was conducted by LocalCircles in 2017 which received more than 18,000 responses. The poll was carried out on Localcircles with participation of over 55,000 consumers.

The polls enquired consumers if they have experienced significant variation between online reviews (Figure 2) and the actual product received. Surprisingly, 62 percent consumers replied that they have experienced significant variation between online reviews, with a yes, while 27 percent replied with a no and 11 percent chose not to answer.

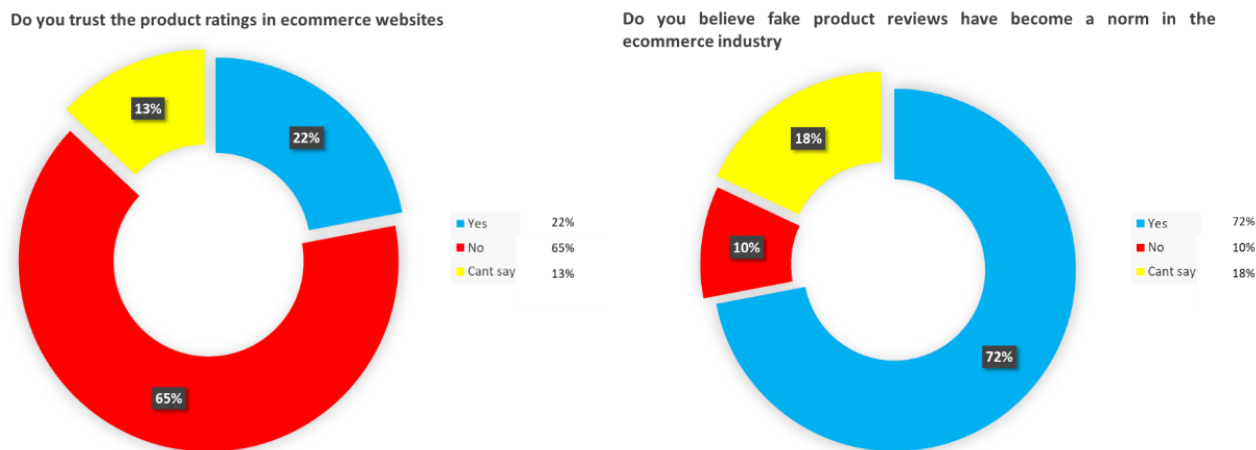
Figure 2: Consumers experienced significant variation between online reviews and consumers trusted the online reviews



Source: Localcircles.com

Many consumers depend on reviews from other users to decide if the product is appropriate to be bought or not. Tampering with these reviews leading to a purchase, hence is nothing less than trying to cheating them. The second poll (Figure 2) asked consumers if they trusted the online reviews. 56 percent responded in a negative way while 31percent responses were an affirmative. 13 percent were unsure about it. Indian consumers have still doubt about online reviews posted on websites. They don't really trust online reviews and rely on other recommendation channels. In the next poll (Figure 3), 65 percent consumers said they do not trust product ratings on ecommerce sites. While 22 percent said they trust them and 13 percent chose not to answer the question.

Figure 3: consumers do not trust product ratings and consumers believe fake product reviews have become a norm



Source: Localcircles.com

In the last poll (Figure 3) 72 percent consumers said that they believe fake product reviews have become a norm in the ecommerce industry. While 10 percent said this was not the case and 18 percent were unsure about it. Consumers stated that many businesses are thriving on their ability to provide fake (good reviews) to the prospect buyers and in most cases once a business lists a product, the seller himself as an individual goes and rates and reviews the product. There may be common practice of asking family and friends to rate and review their product. Some sellers even go to the point of making a purchase from their own business so as to getting a verified purchase rating and review for their product. Consumers should be cautious and interpret the number of ratings and reviews when buying on ecommerce sites. Indian consumers need more assurance from companies, more transparency during online presence.

According to a study conducted by ReviewTrackers in 2017, they observed at trends in nine million reviews across 100 plus review sites for the last eight years. In the last few years, there has been huge fundamental shifts in how reviews look, where they're appearing, and the sentiment people express in them. Online reviews are getting smaller, more social, more positive. The average length of a review was 600 characters back in 2010. Eight years later, reviews have gotten 65 percent shorter, with the average review now coming in at just over 200 characters, about the size of the newly expanded tweet (Figure 4).

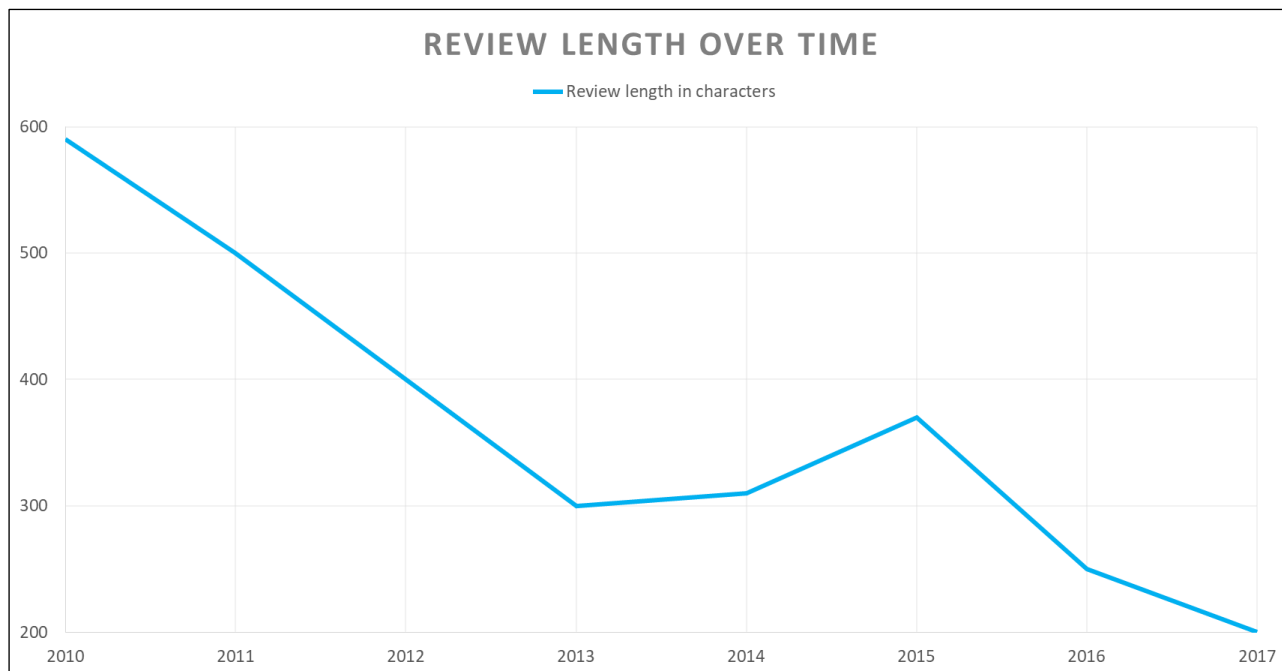
The (Figure 4) suggests consumers have improvised the art of writing online reviews over a period of time. They have adopted the method to write concise reviews. But this also suggests there might be a rise in bias in online reviews or overly positive reviews. There might be a possibility of fake reviews disguised in the form of short reviews which may exclude details of a product or service.

Given the overwhelming impact of online reviews on consumer purchases, businesses may try to manipulate online reviews to increase sales by secretly posting favorable reviews and also by deleting negative reviews (Hu, Bose, Gao, and Liu, 2011). A difference in a product rating by half-star can break or make a business (Anderson & Magruder, 2012). By some approximations up to one-third of all consumer reviews are fake on the Internet (Hu, Bose, et al., 2011; Jindal & Liu, 2008). Despite the efforts by e-commerce businesses and review platforms to filter out fake reviews and the reinforcement of guidelines and implementation in various countries; manipulation of online reviews has continued and taken various forms of late.

The literature offers little assistance to managers because it has not explored the theoretical mechanism underlying the effect of review manipulation in practice. From the research gap we attempt a study of

promotional reviews by examining the online market environment that inspires or demoralize promotional reviewing activity. In this research, we aim to discover the presence of manipulation in online reviews for hotels on travel websites. We examine reviews of hotel on two travel websites having different online review structure: one with reviewers' profiles and second with no reviewers' profiles.

Figure 4: Review Length over time



Source: Reviewtrackers.com

REVIEW OF LITERATURE:

Increasing numbers of marketing scholars have emphasized the effects of online reviews, including in the areas of marketing strategies & sales (e.g., Chen, Wang, & Xie, 2011; Cui, Lui, & Guo, 2012). Others have studied the importance of online reviews for sales forecasting (Dellarocas, Zhang, & Awad, 2007) and consumer motivations for posting reviews (Chen et al., 2011). Previous researchers have explored how manipulation of online product reviews affects consumer as well as firm. Mayzlin (2006) proposes an analytical model in which two rival firms supply mysterious messages praising their own products. Dellarocas (2006) define the conditions in which the number of manipulated reviews increases with the quality of the firms and determines that manipulations from high quality firms potentially lead to more informed customer decisions. Due to the hidden nature of review manipulation, direct proof of such practices is lacking. However, many researchers have used various methods to spot and measure the scope of manipulation in online reviews (Hu, Bose, et al., 2011; Hu, Bose, Koh, & Liu, 2012). Hu, Liu and Sambamurthy (2011) emphasize on the detection of fake positive reviews using a refined classification algorithm and text analysis. Jindal and Liu (2008) suggest using sentiment analysis to filter out the authors of fake reviews. These researchers suggest that the complex and concealed nature of review manipulation makes it difficult for everyday consumers to detect or adjust for the bias. Luca & Zervas (2016); Mayzlin et al. (2014) suggests that independent and less reputable businesses are more likely to manipulate reviews. Ma (2017) examined online customer reviews and responses of hotels and perceived that hotels are placing more resources into online management responses. They found that most hotels prefer to manage customer responses reactively rather than proactively. Kim and Kim and Park (2017) found that trust toward third party online booking websites and trust concerning hotels, was affected by online review and have a positive impact on an individual intention to book a hotel.

OBJECTIVES:

- To analyze promotional reviews in online environment
- To examine difference in reviews for a hotel between the two websites
- To ascertain which of the two websites has higher ratings in reviews

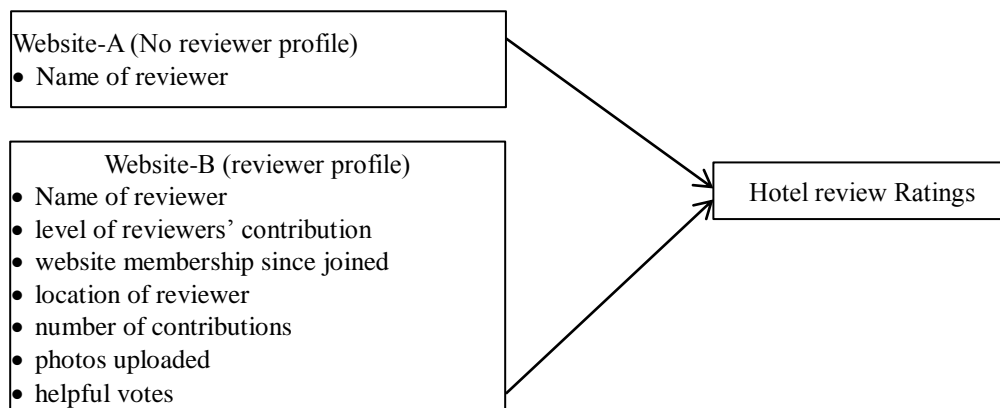
METHODOLOGY:

This is an empirical research. The fundamental intention of the study is to find out manipulation of online reviews. Data of sample size of 279 reviews was collected from two websites: Website-A (No reviewer profile) and Website-B (reviewer profile) for hotel. The primary data collected was analyzed using SPSS. The data was collected from the period from October 2017 to February 2018.

RESEARCH MODEL AND HYPOTHESES:

Previous literature has not examined the scope to which the design of websites that publishes user reviews could discourage or encourage the manipulation. In this paper, we exploit the differences in design by examining two websites online review structure. Website-A does not have reviewers’ profiles stored. Anyone can write review for a hotel. Online review on such website shows name of reviewer and ratings for the hotel. Website-B has reviewers’ profiles stored. Online reviews on this website shows name of reviewer, the level of reviewers’ contribution, website membership since joined year, location of reviewer, number of contributions made by reviewer, photos uploaded, helpful votes for reviews (figure 5).

Figure 5: Research Model



Source: Author

HYPOTHESIS:

H1: There is difference in ratings for a hotel between the two websites

H2: The ratings for hotel are high on website with no reviewers’ profiles than with reviewer profile.

DATA ANALYSIS AND RESULTS:

To analyze hypotheses H1 and H2 we tested the research model using independent t-test. Frequency and Descriptive statistics is shown in table 1 and table 2.

Table 1: Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No profiles website	133	47.7	47.7	47.7
	Profiles website	146	52.3	52.3	100.0
Total		279	100.0	100.0	

Table 1 shows that of 279 sample size, 47.7 percent of reviews were collected from no profiles website (n=133) and 52.3 percent from profiles website (n=146).

Table 2: Descriptive statistics

	website	N	Mean	Std. Deviation	Std. Error Mean
Ratings	No profiles website	133	3.8015	1.16124	.10069
	Profiles website	146	2.9041	1.38130	.11432

Table 3: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ratings	Equal variances assumed	9.667	.002	5.844	277	.000	.89739	.15357	.59508	1.19970
	Equal variances not assumed			5.891	275.265	.000	.89739	.15234	.59750	1.19729

Table 2 and Table 3 shows Levene’s test: The test represents equality of variances is significant therefore we should go for equal variances not assumed with the altered degrees of freedom. Thus ratings for No profiles website was higher ($M=3.81, SD= 1.38$) than for Profiles website ($M=2.91, SD= 1.16$), $t(275.27) = 5.89, p < 0.001$. Hence it is concluded that there is significant difference in ratings between No profiles website and profile website for a hotel (Table 4).

Table 4: Hypothesis testing results.

Hypothesis	Hypothesized relationship	Results
H1	There is difference in ratings for a hotel between the two websites	supported
H2	The ratings for hotel are high on website with no reviewers’ profiles than with reviewer profile.	supported

CONCLUSION:

The research indicates that there is difference in ratings for a hotel between the two websites. It is also observed that the ratings for hotel are high on website with no reviewers’ profiles than with reviewer profile. Users can post reviews on website with no reviewers’ profiles just by adding their name and rate the hotel. There is no way of knowing whether the user is one-time reviewer or has reviewed other hotels as well. Therefore, it is easy to post fake reviews for a hotel on website with no reviewers’ profiles. Whereas on website with reviewers’ profiles there are many indicators of users posting reviews for a hotel. The consumers can check how many contributions the user has made to the website, rating history for other hotels the user visited, has he uploaded any photos of the places he visited, helpful votes for posted reviews from other users. Thus possibility of fake reviews is less on website with reviewers’ profiles. It connotes that as the trust on online reviews increases, website operators may priorities and become more proficient to afford verification software and include additional filters to ensure the reviews' authenticity.

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