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Understanding the Impact of Restaurants' Initial Online Reputation on Subsequent Online Reputation: Focusing on Source and Message Credibilities

Research-in-Progress

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Abstract

When consumers have no previous experience with products or services, they form trust on them based on credible sources and messages. Thus, online review sites have become crucial word-of-mouth channels where customers search for the credible information. Although considerable literature on online reviews has revealed the role of reviewers and review characteristics in forming consumer behaviors, few studies have examined their impact on business reputation building processes. Therefore, we investigate whether the overall tendency of initial source and message credibilities can moderate the impact of the initial online reputation on the subsequent online reputation. We listed up 1,516 newly opened restaurants located in Manhattan of New York City and collected their reviews posted over the first six months. Expected contributions are also discussed.

Keywords: Electronic word-of-mouth, online review site, online reputation, source credibility, message credibility, credibility theory

Introduction

With the spread of mobile devices, Internet access has become available anytime and anywhere. Accordingly, more and more consumers are instantly and vividly sharing their consuming experiences online and generating a huge amount of electronic word-of-mouth (eWOM). Also, it is easier and easier for potential consumers to get access to eWOM through various online channels such as emails, social media, virtual community, and review sites (Litvin et al. 2008). Among them, online review sites which publish crowd-sourced reviews about local businesses (e.g., Angie's List, Google My Business, TripAdvisor, and Yelp) have grown rapidly. For instance, Yelp was founded in 2004 and success fully launched its initial public offering in 2012. As of 2017, Yelp had cumulated 148 million reviews and approximately 76 million unique desktop visitors and 92 million unique mobile visitors on a monthly

average basis (Yelp 2018). On the other hand, Google My Business has shown exponential growth since 2014. From 2014 to 2016, the number of reviews submitted to Google My Business grew by 80%, 114% and 278%, respectively (Pitman 2018).

The growth of online review sites for local businesses is based on the consumers' trust in online reviews. According to a survey conducted with a sample of 1,031 US-based consumers, 85% of consumers trust online reviews as much as personal recommendations (Bright Local 2017). Various prior studies have also revealed that other consumers' past experience plays an important role of information source when potential consumers make purchasing decisions (e.g., Luo et al. 2013). When consumers have no previous direct experience at all with a product or a service, they form their trust by transferring their trust on the third party to the product or the service (Ba 2001). For newly opened local business context, online reviews can take this third party role. Potential consumers would transfer their trust on the review or the reviewer to the business. Also, online review sites make it fast and easy to search and explore eWOM about the local business. As potential consumers rely on previous consumers' perception, and a product or service grows based on the consumer perception (Fuller et al. 2007; Liu 2006), it is important to manage online reputation on online review sites.

Given the importance of online reviews, considerable researchers dedicated to understand the impact of online reviews on both business level and individual level. Although the importance of review and reviewer characteristics in the individual's review perception has emphasized, few studies examined how they influence on the eWOM diffusion. Moreover, despite the importance of trust building in the very early stages of business and online review sites may take curial roles of transferring the trust (Luo et al., 2013), few empirical investigations have focused on the online reviews accumulated during the early period. To address such gaps, we adopt credibility theory and a number of empirical studies using this framework (e.g., Filieri 2016; Luo et al. 2013; Wathen and Burkell 2002). Our principal research question is: In the early stage of restaurant business, how message credibility and source credibility of initial reviews moderate the impact of initial reputation on subsequent reputation? We first reviewed literatures on online consumer reviews, online reputation, and credibility theory in online review settings. Then we developed hypotheses to be tested in the present study and described the research method used to test the hypotheses. To the best of our knowledge, it is the first study using a restaurant as a unit of analysis to examine review and reviewer related variables that moderates the eWOM diffusion. This study may also help local business owners to develop effective online reputation management strategies.

Literature Review and Hypotheses Development

Online Consumer Review and Online Reputation

Consumers share their experiences with products or services online. Previous researches on online consumer reviews have empirically validated their significant influence both on business level (e.g., success of product or services online or offline) and individual level (e.g., review helpfulness evaluating behavior, review rating behavior) (see Table 1).

On business level, the influence of online reviews on sales has been explored in diverse research contexts like movie (e.g., Duan et al. 2008), book (e.g., Chevalier and Mayzlin 2006) and hotel (e.g., Ye et al. 2009). Previous researchers argued that eWOM volume and valence are the most influential eWOM factors on offline or online sales. For instance, Duan et al. (2008) found that movie sales are influenced by the volume of online reviews, not valence. On the other hand, Ye et al. (2009) revealed that both the average rating and the variance of rating have impact on the amount of online sales of hotel rooms.

On individual level, factors that affecting online review user behavior like evaluating review helpfulness and rating product or services were mainly studied. In prior studies on review helpfulness, various reviewer-related characteristics (e.g., reviewer expertise, connectedness, self-disclosure) and review-related characteristics (e.g., review valence, review length, the number of image used) were examined as antecedent factors of evaluating review helpfulness (e.g., Liu et al. 2008; Mudambi and Schuff 2010).

Also, some researchers attempted to reveal that how these reviewer and review characteristics of prior reviews impact subsequent reviewers' rating behavior (e.g., Guo and Zhou 2016; Ma et al. 2013).

Although the importance of review and reviewer characteristics has emphasized in individual level researches, these factors also may have an impact on business level. As online consumer review and reviewer characteristics affect individual information receivers' behavior, it would also affect a reputation building process for the businesses in their early stage. Since consumers have not enough direct experience with the product or service, they will try to find credible information to reduce risk of their consumption (Zucker 1986).

Consumers perceive corporate reputation as a rough approximate of company's product or service quality (Devine and Halpern 2001). In online review site context, the growth of consumers' perception and reputation would reflect on average ratings, number of ratings, or total ratings (e.g., Banerjee et al. 2017; Luca and Zervas 2016). Therefore, we will examine the initial reputation building process and investigate the role of review and reviewer related factors from a macro perspective.

Table 1. Summary of Literature on Online Consumer Reviews

Category	Main Findings	Authors
Impact of Online Consumer Review on Sales	Movie sales are influenced by the number of online posting, not ratings.	Duan et al. (2008)
	An increase in negative review is more powerful in decreasing book sales than an increase in positive review is increasing sales.	Chevalier and Mayzlin (2006)
	The average and variance of online review rating have an impact on online hotel room sales.	Ye et al. (2009)
Review Helpfulness Evaluating Behavior	Reviewer expertise and writing style affect review helpfulness.	Liu et al. (2008)
	Review extremity and review depth affect review helpfulness and product type moderate the effect.	Mudambi and Schuff (2010)
Review Rating Behavior	The average rating of prior reviews can positively affect subsequent reviewers' post-consumption evaluations.	Ma et al. (2013)
	Volume and variance of prior rating negatively moderate the impact of prior reviews on a subsequent reviewer behavior. Also, subsequent reviewer connectedness and expertise moderates the main moderating effects.	Guo and Zhou (2016)

Message Credibility and Source Credibility

Many researches in traditional communication theories have already demonstrated that informational factors (e.g., source and message) are the major elements that affect a reader's information adoption (Cheung et al. 2006). Wathen and Burkell (2002) reviewed literatures related to the credibility of information on the web, and derived source, message, receiver and media characteristics affecting people's perception of information. According to their study, people more intend to depend on credible information and credible source especially when information is scarce. Therefore, credible message and source would positively affect eWOM diffusion for the local businesses in their early stage.

First, the more credible reviewers participate during the initial stage of a business; the more online reputation would spread. Traditionally, trustworthiness and expertise are the most highlighted components of source credibility (Dholakia and Sternthal 1977). In online review site context, consumers may have to rely on the reviewers' personal profile information to judge their expertise and trustworthiness (Park et al. 2014). Xu (2014) argued that review site users adopt other reviewers' personal profile characteristics (i.e., number of trusted members and profile picture) as cues of

trustworthiness. Guo and Zhou (2016) also explained that reviewer expertise is a key measure for a reviewer's influence. Therefore, the following hypotheses are inferred regarding the moderating role of source credibility (i.e., expertise and self-expression) in the influence of initial online reputation on subsequent online reputation:

H1: *The impact that initial online reputation has on the subsequent online reputation is stronger for restaurants which get higher portion of expert reviewers' reviews during the initial stage.*

H2: *The impact that initial online reputation has on the subsequent online reputation is stronger for restaurants which get higher portion of self-expressed reviewers' reviews during the initial stage.*

Also, the more credible reviews are posted during the initial stage of a restaurant business, the more eWOM would spread. Filieri (2016) conducted 38 interviews and derived message factors (e.g., length of a review, writing style, consumer pictures, and granularity) that consumers use to assess credibility of the message. According to his study, consumer perceive that lengthy reviews with some reviewer-taken pictures are more credible. This then leads to the following hypotheses regarding the moderating role of message credibility (i.e., review text length and number of images) in the influence of initial online reputation on subsequent online reputation:

H3: *The impact that initial online reputation has on the subsequent online reputation is stronger for restaurants which get longer reviews during the initial stage.*

H4: *The impact that initial online reputation has on the subsequent online reputation is stronger for restaurants which get reviews with more images during the initial stage.*

Research Model

This study proposes four main hypotheses to investigate the moderating role of initial source credibility (i.e., expertise and self-expression) and initial message credibility (i.e., review length and the number of images) on the impact of initial reputation on subsequent reputation. Our research model is shown in Figure 1.

Existing studies have indicated that reviewers are affected by prior reviews when they leave their own review (e.g., Guo and Zhou 2016; Ma et al. 2013). Applying this viewpoint at the business level, we assumed that the initial online reputation of a restaurant would positively affect the subsequent online reputation. Based on the basic assumption, we focused more on two types of moderators that affect this relationship: source credibility and message credibility.

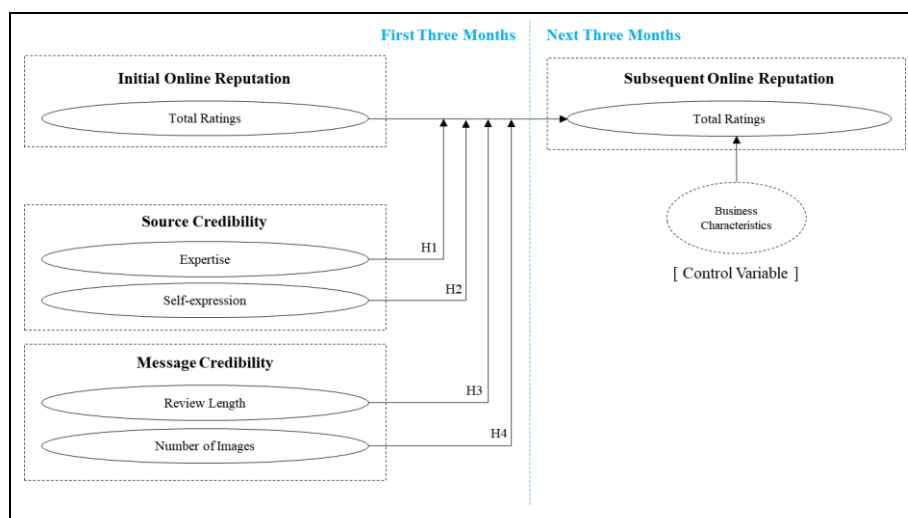


Figure 1. Research Model

Methodology

Data Collection

Yelp, a crowd-sourced review site for local businesses in the United States, was selected for data collection. As we focused on the early days of restaurant business, we chose recently opened restaurants located in Manhattan, New York City. We collected our data set from Yelp from August 25, 2017 to November 25, 2017 using Web Scraper, a Chrome browser extension.

We collected 55,613 review data of 1,547 restaurants that have the first review between February 26, 2015 and February 27, 2017 to examine the latest trends in the restaurant industry. As Yelp do not tell you when a restaurant started their business, the first review posted date was used as a rough estimate of the restaurant business started date. Then we chose restaurants that had at least one review for both the first three months and the next three months as we defined an initial period as the first three months and a subsequent period as the next three months. For each restaurant, we extracted restaurant Yelp web page address, price range information, and the first review posted date. For each review, we extracted star rating, the date of review written, textual review content, and total number of images posted with the review. For each reviewer, we extracted the years they selected as Elite reviewers and profile image link address.

Data Measurement

The analysis required business level data to test all hypotheses, so we computed source credibility and message credibility of each restaurant by combining restaurant data, review data and reviewer data based on operational definitions as presented in Table 2. To capture both influence of review volume and valence, we calculated restaurants' reputation by adding total review ratings of both initial and subsequent periods (Banerjee et al. 2017).

Table 2. Operational Definition of Variables

Variables	Operational Definition	Reference
Initial Reputation	Total ratings of the first three months	Banerjee et al. (2017)
Subsequent Reputation	Total ratings of the next three months	Banerjee et al. (2017)
Reviewer Self-expression	Portion of reviewers who uploaded their own profile picture and not used the default blank image in the initial three months reviews	Xu (2014)
Reviewer Expertise	Portion of expert reviewers who had Elite badge when they left the review in the initial three months reviews	Guo and Zhou (2016)
Review Length	Average word count of reviews from the initial three months	Filieri (2016)
Review Images	Average number of images of reviews from the initial three months	Filieri (2016)

Expected Contributions

There would be two expected contributions from a theoretical standpoint. First, while a lot of attention has been paid to the influence of online reputation, we still have limited empirical evidence to understand the eWOM diffusion mechanism that occurred at the early stages of local businesses. Using the review data from restaurants that have been newly opened in the last two years, this study can contribute to the research stream. Second, review and reviewer related characters have been examined in the various online review research context like review helpfulness and subsequent reviewer's

behaviors that used a review as their unit of analysis. To the best of our knowledge, ours is the first study using restaurants as a unit of analysis to examine review and reviewer related variables that moderates the impact of initial online reputation on subsequent online reputation. Therefore, it is expected that this study will help extend the credibility theory in the initial trust building process and examine the role of review and reviewer related factors from a macro perspective.

From a practical standpoint, it is expected that this study will help restaurant owners to develop effective customer relationship management strategies to improve and manage their online reputation in the early stage of their business. On the other hand, crowd-sourced review system operators can refer this study to decide what indicators they need to provide to make newly registered local businesses get more engaged. For example, they can provide metrics like portion of expert reviewer or average length of reviews that business owners can use to manage their online reputation.

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