

The Impact of "Brickist" Reviews on Online Reviews Based on Qunar's Hotel Review Data

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ABSTRACT

A large number of online comment usefulness votes of some websites are 0, which makes the usefulness of online reviews unmeasurable, and facts show that the reading of text is a substitute for text usefulness to a certain extent. By analyzing the 289 pieces of data of hotels on Qunar.com, the effect of the length of the review text, the number of review photos, the activeness of reviewers, and the reviews of "brickist" on online review reading were studied. The data analysis results show that the number of comment photos has no significant effect on the online comment reading, but the length of the comment text, the activeness of the commentator, and the "brickist" reviews have a positive effect on the online comment reading. At the same time, the study found that the existence of "brickist" reviews made significant differences in the length of the review text, the number of review photos, the level of reviewer activity, and the amount of review reading.

Keywords: "brickist" reviews, length of review texts, number of photos, activeness of reviewers, online reviews

I. INTRODUCTION

In recent years, with the development of e-commerce and the Internet, online platforms have become the consumer's first choice for consumption. Compared with the product or service information published by merchants, consumers are more inclined to choose the experience or consumption evaluation of products or services published by consumers. According to the 37th "Statistical Report on Internet Development in China" in 2015, 43.8% of consumers will check product reviews before shopping. Online reviews are valued by academia and management because they can influence consumers' purchasing decisions and their attitudes. The previous research on online reviews mainly focused on the motivation of online reviews, the influence mechanism of online reviews and the management strategies of online reviews. The motives of online reviews mainly include: venting emotions, economic incentives, caring for others, seeking for advice, helping companies, etc.; the impact mechanism of online reviews mainly analyzes the impact of online reviews on consumers' purchasing decisions from the perspective of four elements: sender, review information, receiver, and publishing platform [1]. Regarding the management strategy of online reviews, Hao Yuanyuan (2009) et al., [2] suggested that the designers of review sites can identify the usefulness of online reviews in a timely and automatic manner

according to the characteristics of the review text to help improve the efficiency and effectiveness of decision-making. Gong Shiyang (2013) and others [3] suggested that companies use online comment systems for online public praise marketing, increase the number of comments, increase the comment valence, reduce the difference in comments, and adopt different public praise marketing strategies for products in different life cycles, etc. For the research on online reviews, most scholars focus on the usefulness of reviews, that is, whether online reviews will actually affect consumers' purchase motivation, purchase intention, and emotional experience. The facts show that consumers of some websites do not necessarily vote for usefulness after reading the reviews (such as Taobao), which leads to a generally low number of useful votes for online reviews. Due to the low number of online review votes (most usefulness votes are 0), the usefulness of online reviews of consumers with 0 votes cannot be accurately measured with online review usefulness votes. Therefore, it is particularly important to measure the usefulness of online reviews with lower online comment votes. The number of online reviews read is the footprint left by consumers after reading online reviews, that is, the number of consumers that have read this review. The reading of the text can reflect the usefulness of the text to a certain extent. Therefore, it is of great theoretical and practical significance to explore the influencing factors of online comment reading. This

article will explore the effects of online review text length, number of review photos, reviewer activity, and "brickist" reviews on the specific hotel reviews of Qunar from the perspective of review content and reviewers.

II. THEORETICAL BACKGROUND AND ASSUMPTIONS

Online reviews refer to the usage evaluation and experience that consumers give to products or services after consumption. In recent years, with the development of e-commerce, third-party websites will provide online reviews of products, such as Taobao, JD.com, Amazon, and Douban.com. Previous research on online reviews mainly focused on the content factors, reviewer factors, review time, etc. [4], [5]. Among them, the main factors of review content factors include: review text length, review sentiment, review readability, etc. [6] Reviewer factors mainly include: reviewer activity, reviewer introvert centrality and extrovert centrality, etc. [7] Most scholars ignore the impact of the number of comment pictures on the usefulness of comments. To a certain extent, pictures can more objectively and easily reflect the characteristics of products. Whether the number of pictures will affect the usefulness of online reviews is not clear so far. Another important issue is the impact of "brickist" reviews on the usefulness of reviews. Facts indicate that "brickists" are often more useful and accepted by people because of their professional knowledge. Therefore, based on the previous research of scholars and the characteristics of the hotel data on Qunar, the following assumptions are proposed:

A. The length of the comment text affects the reading amount of online reviews positively and forward

When a user purchases a product or service on an online platform, he has relatively incomplete knowledge of product quality, product efficacy, and corporate credit. He needs to reduce this information asymmetry by searching for corresponding product usage information [10]. It is believed that the text length and content of online reviews of consumers will positively affect the reading quantity of online reviews. The longer the text length and the richer the content of online reviews, users will think that the amount of information obtained from the reviews will be more, thereby stimulating the user to actively read the corresponding evaluation information to reduce the uncertainty in the purchase process.

B. The number of comment pictures affects the reading quantity of online reviews positively and forward

Previous studies have shown that because pictures are more irritating to human senses. Therefore, the review pictures and the review text can allow the user

to perceive more and rich product information, affect the user's perception of the value of the product, and reduce the user's uncertain consumption of the product. It is believed that the number of review pictures positively affects the reading quantity of online reviews. The more review pictures, the more users will be attracted to read and browse product reviews in order to obtain more valuable product information.

C. The activeness of reviewers affects the number of online reviews positively and forward

The activity of the reviewers represents various interactive activities such as consumption, reviews, reposting, and sharing on major websites. The higher the level of activity of the reviewers, the more the reviewers participate in online consumption, the more authentic and representative the evaluation of the product or service will be. It can also attract more users to read and browse the corresponding evaluation information in order to eliminate their uncertainty about consumer products and affect his consumption decisions on products or services.

D. "Brickist" reviews affect the reading quantity of online reviews positively and forward

Studies have showed that users will have a certain perception of the authority of the review publishers [11]. The higher the level of the publisher of the comment, the more the terminology of the published content. And the higher the authority of the publisher as perceived by the user, the more likely it is to affect the credibility and reliability of the user's evaluation, and thus the user or the perceived usefulness of the service affects the user's final decision [8]. From the psychological level, users are more willing to follow the evaluation and opinions of the highly authoritative "brickists". It is believed that reviews with "brickist" reviews will reflect higher authority, which in turn will attract and influence more users to read the corresponding review information.

III. RESEARCH METHODS

A. Data collection

This article collects hotel review data from Qunar.com (www.qunar.com). Qunar.com is an online travel website established in February 2005, which can provide consumers with real-time search for airline tickets, hotels, travel routes, etc. According to statistics, there are currently 125,000 routes to Qunar, 468,000 hotels, and 186,000 vacation routes.

First, Jinjiang Inn has been chosen, a budget hotel with a lot of reviews from "brickists", as the research object. Afterwards, the researchers collected all the reviews of Jinjiang Inn with "brickist" reviews in Beijing using professional reptile software (Octopus).

Among them: a total of 23 hotels were collected, 13864 reviews were collected, and 59 reviews of "brickists" were collected. Each comment includes: the text length of the comment, the number of photos of the review, the number of readings of the review, and the footprint of the reviewer, etc. Since it is necessary to measure the number of readings of each review, and some consumers with shorter reviews do not have clicks, the researchers selected reviews with more review content

and review photos (this part of reviews have reading quantity). A total of 10 non- "brickist" reviews were extracted from each hotel, and a total of 230 non- "brickist" reviews with comment readings and review pictures were collected. Together with 59 "brickist" reviews, a total of 289 pieces of samples were collected. The descriptive statistical results of the data are shown in "Table I" below:

TABLE I. DATA DESCRIPTIVE STATISTICS

	Text length	Number of photos	Activity of reviewers	Review "brickists"	Reading quantity
<i>Minimum value</i>	18	0	0	0	3
<i>Maximum value</i>	1428	30	114	1	7034
<i>Average value</i>	392.94	4.1	13.82	0.2	181.62
<i>Standard deviation</i>	326.592	5.483	25.276	0.404	552.331

B. Variable measurement

The length of the review text is measured by the number of words in the review text. The number of review photos is measured by counting the number of photos contained in each review. The reviewer's activity is measured by the reviewer's footprint throughout. The number of reviews is measured by the quantity of readings obtained by the reviewer's reviews. The "brickist" reviews are measured by 0 and 1. Among them, "brickist" reviews are defined as 1, and non-"brickist" reviews are defined as 0.

C. Analysis methods and models

From the descriptive statistics of the variables in "Table I", it can be known that there are many cases where the value of the variable is 0. Therefore, in order to correct the effect of 0 value, this paper uses negative binomial distribution to estimate the model. Previous studies have shown that when there are more 0 values in the observations, it is more appropriate to use the

negative binomial distribution to fit the model [9]. The negative binomial distribution can also be called the Pascal distribution. It indicates that the probability of an event occurring in the Bernoulli test is P. In a series of independent Bernoulli trials, the probability that an event occurs r times at the r + k time is shown as the following:

$$P(k; r, p) = \binom{k + r - 1}{r - 1} \cdot p^r \cdot (1 - p)^k \quad (1)$$

x = r, r + 1, ..., where r is a fixed integer.

IV. RESEARCH RESULTS

A. Analysis of regression results

The results of regression analysis using Stata software are shown in "Table II" below, where: LR chi2 (4) = 431.83, Prob> chi2 = 0.0000, indicating that the model fits better, which to a certain extent can explain the impact of online review reading quantity.

TABLE II. REGRESSION ANALYSIS RESULTS

Variables	Regression coefficient	Standard error	Z	P
<i>(Constant)</i>	3.28879	.0928504	35.42	0.000***
<i>"Brickist" reviews</i>	3.033522	0.1795734	16.89	0.000***
<i>Activity of reviewers</i>	0.0161702	.0025738	6.28	0.000***
<i>Text length</i>	-0.0004839	.0002157	-2.24	0.025*
<i>Number of photos</i>	0.0169548	.0171874	0.99	0.324

^a. Note: 0.001 *** 0.01 ** 0.05 *

Studies have shown that the length of the review text (P = 0.025) affects the reading of online reviews positively and forward, which shows that the hypothesis H1 holds. The number of review photos (P = 0.324) has

no significant effect on the reading quantity of reviews, which shows that the hypothesis H2 is not true. This means that the number of photos alone cannot attract the attention of consumers, and whether the review

content is relevant and whether it can eliminate the uncertainty of product information plays a more important role. In addition, the active level of the reviewers have a positive effect on the online review reading quantity ($P = 0.000$), which shows that the hypothesis H3 holds. The "brickist" reviews have a positive effect on the number of online reviews ($P = 0.000$), which shows that the hypothesis H4 is true.

B. Significant differences in "brickist" reviews

The researchers used an independent sample T test to test whether there are different effects of "brickist" reviews on text length, number of photos, activeness of reviewers, and reading quantity of reviews. The results are shown in "Table III":

TABLE III. INDEPENDENT SAMPLE T TEST RESULTS

		Average value	Standard deviation	T	Significance	Mean difference
<i>Text length</i>	"Brickist" reviews	701.66	244.255	9.259*	0.000	387.92
	Non-"brickist" reviews	313.74	296.947			
<i>Number of photos</i>	"Brickist" reviews	11.47	7.328	9.558*	0.000	9.26
	Non-"brickist" reviews	2.21	2.572			
<i>Activity of reviewers</i>	"Brickist" reviews	26.88	32.730	3.648*	0.000	16.41
	Non-"brickist" reviews	10.47	21.839			
<i>Reading quantity</i>	"Brickist" reviews	756.83	1039.429	5.339*	0.000	726.76
	Non-"brickist" reviews	30.07	53.995			

^a. Note: n = 289; * is p < 0.05

The results of independent sample T test on whether the group of "brickists" were reviewed showed that the length of the review text (701.66) for "brickist" reviews was significantly higher than the length of the review text (313.74) for non-Bricks reviews, indicating that the existence of the "brickist" reviews makes the length of the review text significantly different ($T = 9.259$); the number of review photos (11.47) of "brickist" reviews is significantly higher than the number of review photos (2.21) of non- "brickist" reviews, indicating that the existence of "brickist" reviews makes a significant difference in the number of review photos ($T = 9.558$); the activity level of reviewers of "brickist" reviews (26.88) was significantly higher than that of reviewers who were not "brickists" (10.47), indicating that the existence of "brickist" reviews made a significant difference in the activity of reviewers ($T = 3.648$); the reading quantity of reviews of "brickist" reviews (756.83) is significantly higher than the length of the review text (30.07) of non- "brickist" reviews, indicating that the existence of "brickist" reviews makes the reading of reviews significantly different ($T = 5.339$).

V. CONCLUSION

With the continuous development of e-commerce and big data, online platforms have become the preferred platform for consumers. This article focuses on "what factors will affect the reading quantity of online reviews" in order to find measures and ways to

affect the reading quantity of reviews. This article examines the impact of the length of the review text, the number of review photos, the level of activity of reviewers, and the reviews of "brickists" on the reading quantity of reviews. Studies have shown that the length of the review text ($P = 0.025$) affects the reading of online reviews positively and forward. The more text content a review has, the more users can read the review. The number of review photos ($P = 0.324$) has no significant effect on the reading of reviews, which means that the number of photos alone cannot attract the attention of consumers. The photos can only reflect the quality of the product one-sidedly, and whether the content of the review is true or not It seems to be more important to explain the user's doubts from a certain angle and eliminate the user's uncertainty about the product. In addition, the activeness of the reviewers has a positive impact on the online review reading quantity of the review ($P = 0.000$). The more activities the reviewer participates in the online platform, the more they have a say in the evaluation of the product, and the more users can be attracted to read the evaluation information. "Brickist" reviews have a positive impact on the reading of online reviews ($P = 0.000$). "Brickist" has an authoritative evaluation of products. According to the public's herd psychology, more users will follow "brickists" to make consumption decisions. At the same time, the study found that the existence of "brickist" reviews makes a significant difference in the length of the review text, the number of review photos, the

activeness of reviewers, and the reading quantity of reviews.

This research enriches the research on online reviews. In previous studies, few scholars explored the influencing factors of online review reading quantity, and this research filled a certain research gap. At the same time, the researchers have proposed a method for measuring the usefulness of reviews that have lower online comment usefulness, which has important theoretical and practical significance. Second, the researchers tested whether there was a significant difference in the "brickist" reviews. Studies have shown that the length of online review text with "brickist" reviews is longer, the number of photos is greater, the reviewers are more active, and the greater the number of reviews reading. This reveals that it is wise for third-party online review sites (such as Taobao, JD.com, Amazon, Douban, etc.) to promptly introduce "brickist" reviews. Finally, according to the research conclusions, it is suggested that online review sites pay attention to the impact of review content relevance and review readability on online reviews from the perspective of text mining. It is not enough to simply consider the length of the online review text and the number of photos. It is undeniable that there are some reviews with longer review text and less useful information. The ordering and deployment of online reviews should take full account of the content relevance of the reviews and the readability of the reviews.

There are still some deficiencies in the research of this article. Due to time and capacity constraints, this research is based on 289 Qunar reviews, and the number of samples is limited. Future research can increase the sample size and select different hotel data to verify the research conclusion. The author suggests that future research can consider the impact of the reading of review text on perceived usefulness, and then study the impact of reading of review text on sales revenue [12].

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