Association for Information Systems
AIS Electronic Library (AISeL)

WHICEB 2017 Proceedings

Wuhan International Conference on e-Business

Summer 5-26-2017

Users' Attributes Associated with High-Quality Review in Online Communities

Lei Chen
School of Management and Economics, University of Electronic Science and Technology of China, Chengdu, 611731, China,
chenlei_0320@163.com

Jiaming Fang
School of Management and Economics, University of Electronic Science and Technology of China, Chengdu, 611731, China,
jmfang@uestc.edu.cn

Follow this and additional works at: http://aisel.aisnet.org/whiceb2017

Users' Attributes Associated with High-Quality Review in Online

Communities

Lei Chen[1] *Jiaming Fang*[2]

School of Management and Economics, University of Electronic Science and Technology of China, Chengdu, 611731, China

Abstract: High-quality review within an online review community greatly determines the survival and success of the online community. As such, it is crucial for community operators to understand which kinds of users are more likely to share publish high-quality review, a topic not yet adequately investigated in e-commerce research. We used a unique dataset from a large traveling community, and examined which users' characteristics are associated with the high-quality review publishing behavior. Results show that reviewers' status, knowledge and rating comprehensiveness is positively associated with review quality. Moreover, we reveal that there exists an inverted U-curve relation between review length and review quality. The similar relation also exists between picture number and review quality. Further, we show that reviewers who have more experience, knowledge, intimate interpersonal relationship- are more likely to be motivated by a high-quality review engagement policy. The results can improve our understanding on the sharing behavior in online communities, and offer managerial implication to the community operators.

Keywords: online community, review quality, sharing behavior

1   INTRODUCTION

Online reviews provide consumers with information about products and services based on the real experiences of other consumers. Users' online reviews are an increasingly important part of the consumers' buying process, and the majority of customers increasingly rely on online review ratings and comments on product pages before making their final purchase decision[25]. For instance, YouGov finds that 78% of U.S. Internet users read online reviews before making a purchase, and 52% of these users read four or more reviews before they have sufficient information to purchase a product or service[27]. Product reviews can eliminate the doubts that customers may have about a product or a service, and can help customers to decide whether to purchase the product/service or not. It has become an integral part of e-commerce sites. Reviews may appear on a firm's own site, a social media or a third part review platform. Review platforms are websites that specialize in presenting product or service reviews about a range of firms. Comparing with firm-hosted review systems, third party review platforms are expected to be more independent and genuine to help consumers make more informed purchasing decisions. Accordingly, a range of online review platforms emerged in recent years.

Besides offering multiple ways to attract reviews from customers, online review platforms usually take some measures to encourage reviewers to write high quality reviews to improve the attractiveness of the sites. High quality reviews increase consumers' experience and keep them staying on the site. Amazon, for instance, asks potential customers rating the review ("was this review helpful to you?") to help other customers find the most helpful reviews.

From perspective of review quality, previous scholars have discovered that information quality affect consumers' purchase intention and transaction behaviors[23]. On the other hand, plenty of research explored the reason why people share their experience in online review systems [7,10,17,26]. Studies even indicated the

---

[1] Email: chenlei_0320@163.com
[2] Email: jmfang@uestc.edu.cn

significant influence of community's shared language and shared vision on knowledge quality[10]. Indubitably, high quality reviews have tremendous commercial value for e-commerce sites. Those reviewers who can be likely to write high quality reviews are of great value to review platforms. However, few studies have been devoted to clarify the characteristics of reviewers who can write high quality reviews.

For online reviewers, gaining peer attention and online reputation is important motivations for their contribution to the review systems [7,9,25]. The review platforms will bump the High-quality review to the top areas. It helps to improve visitors' experience, render reviews to more exposure and attract consumer attention consistently by putting these reviews on the top of the list. Given the scarcity and value of attention on the Internet, it is expected that online reviewers are likely to devote efforts to writing reviews to gain the label of the High-quality Review[25]. Online reviewers purposely compete for attention when contributing voluntarily to review systems[25].

Mafengwo.cn, similar to TripAdvisor, is a travel social media platform which provides attraction reviews on product pages. In most sites, reviews' quality usually be measured by consumers' subjective feedback (i.e., Usefulness). Mafengwo.cn uses an official rating (The High-quality Review Engagement policy) to determine the quality of comments. Therefore, Mafengwo.cn makes it impersonal to evaluate the quality of reviews.

2   MODEL AND HYPOTHESIS

Social interaction and personal factors are widely used to explain the phenomena of social media. A large number of existing articles explains knowledge sharing by social interaction and individual factors [5,14]. The great influence of social interaction and personal factors on social virtual world continuance has been evidenced [30]. Fig.1 shows our model.
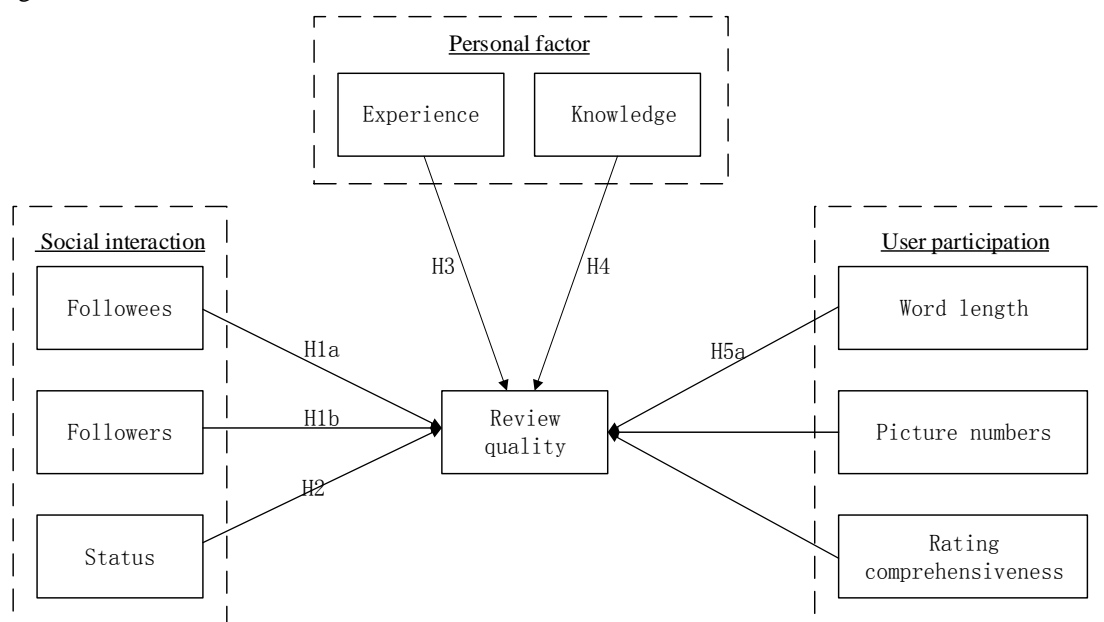

Fig. 1. Research model.

2.1 Social Capital Theory

According to the Social Capital Theory, relationships in social network produce social capital, and the resources embedded within the relationship network or social networks are strongly effect personal performance in Internet[10]. As a consequence, reviewers who have more intimate interpersonal relationship network or at an important status in the community may be able to write high quality reviews. In our model, we use the number of followee and follower for intimacy of interpersonal relationships.

H1a. The number of followee is positively related to review quality.

H1b. The number of follower is positively related to review quality.

On the other hand, because of the social capital, reviewers who hold an important status may be more motivated to write high quality reviews. In this paper, we use the reputation awarded by third party review platform to represent the status in the community.

H2. Status in the community is positively related to review quality. That means reviewers who hold an important status in the community are more likely to write high quality reviews.

2.2 Social Cognitive Theory

The Social Cognitive Theory claims that human behavior is a dynamic, triadic, and reciprocal interaction of personal factors, behavior, and the social network [1,11]. Self-efficacy and outcome expectations are widely used to measure personal factors. Nonetheless, in travel social media platform, almost all users write reviews in order to share their travel experience and help others who are interested in the same scenic spots. Therefore, outcome expectations are not included in our model. In general, self-efficacy is a self-judgment of one's ability to accomplish a given performance[22]. Experience and knowledge will greatly affect self-efficacy [2,3]. The more time a reviewer spend on this site, the more experience he has, and he is more likely to write high-quality review.

H3. Reviewers' experience is positively related to review quality.

In addition to experience, knowledge also has great influence on self-efficacy [2,3]. On the travel website, rich tourism experience is a guarantee for high quality reviews, if a man who never go out, he can't write a good review.

H4. Reviewers' knowledge is positively related to review quality.

2.3 User participation

Userparticipation refers to behaviors, activities and assignments, which users undertake during the online communities' development process[16]. One of the most significant problem of user participation is inequality of contribution[14]. Behavior on the online community is usually divided into interaction and noninteractive behavior depending on the web site features. "Social members" will usually take a positive way to express themselves, in other words, they are activity during using the community. Nevertheless, "quiet members" usually browse reviews or rarely be noticed [4,13]. Social exchange theory regards social behavior as a result of exchange[13]. In order to attract attention and get reputation, social members are willing to contribute more to write detailed and multi-dimensional reviews. In this study, we use word length, picture numbers and rating comprehensiveness to measure user participation. Word length and picture numbers are usually regarded as the depth of reviews [18,20].

However, reviews are mainly used for the information of fragmentation, overlong reviews can increase readers' search costs and lead to the decrease of the quality of the reviews[24]. Therefore, reviewers need to contribute a lot of energy to consider how to describe more information briefly as possible.

H5a. Word length has an inverted U curve related to review quality.

H5b. Picture numbers has an inverted U curve related to review quality.

Rating comprehensiveness is defined as evaluating the target from multiple perspectives. It is more complex than the average score. Reviewers need to measure the target through three to five aspects. That means reviewers should pay a lot to make the quality of review higher.

H6. Rating comprehensiveness is positively related to review quality.

2.4 Gender differences

Gender is one of the most widely recognized individual difference variables [28]. A large number of studies have shown that male and female have different behavior and performance on internet [6,22]. Under some

conditions, female is more emotional than male[19], hence, gender may affect the quality of the reviews to some extent. In order to eliminate the influence of gender, we included gender as control variables.

3　DATA AND VARIABLE

3.1　Data and Variable

We collected data from Mafengwo.cn, which is a popular travel social media platform in China. On March 18, 2015, the High-quality Review Engagement policy was issued to encourage community users to publish high-quality reviews. Prior studies suggested that reward in online community has a great influence on users' behavior[29], and in order to get reward, community users competing for attention is important. In this research, a crawler was developed by python to download reviewer information and reviews, Fig. 2. presents a snapshot of a reviewer's homepage. The data collection was conducted in October 2015. We chose the top 30 of Forbes list "The most famous tourism city in China during 2014" as our target cities, and collect all the reviewers' information and the reviews since it joined Mafengwo.cn. We get 823 reviewers' individual information and their 241418 reviews. Dropping missing data and outliers, we have 784 reviewers with 218623 reviews data. Table 1 shows the variables in our analysis.

Fig. 2. Reviewer's homepage.

Table 1. Variables used for analysis

Variable	Description
Review quality	The total number of high-quality review.
Followees	The number of reviewers who a user pay attention to.
Followers	The number of users who pay attention to a reviewer.
Status	The reviewer reputation in this online community.
Experience	The familiarity of a reviewer to this online community.
Knowledge	The total number of reviews published from a reviewer joined in to October 2015.
Review length	The average length of reviews published from a reviewer joined in to October 2015.
Picture numbers	The average number of picture posted from a reviewer joined in to October 2015.
Rating comprehensiveness	The probability of a reviewer evaluates the target from multiple perspectives.

3.2　Method

The dependent variable in this model is a count variable. The Poisson regression is usually used to model variable on counts. Nevertheless, the Poisson distribution is seldom fit for the statistical analysis as a result of overdispersion. In this model, the mean of dependent variable is smaller than the standard deviation（see Table 2）, the overdispersion issue should to be adjusted. Therefore, we selected negative binomial regression instead of Poisson regression in this study. In addition, as we said before, the effect of word length and picture numbers on review quality increases first,

and then decreases with the rising of number, so we use square term to describe their influence.

Table 2. Descriptive statistics and Correlations (N=783)

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
Review quality	17.37	33.72	1.00									
Gender	0.33	0.47	-0.08	1.00								
Experience	2.75	0.42	0.34	0.10	1.00							
Followees	3.86	1.3	0.16	0.12	0.52	1.00						
Followers	3.41	1.8	0.32	0.02	0.76	0.53	1.00					
Status	6.84	1.77	0.39	0.01	0.72	0.41	0.50	1.00				
Knowledge	4.85	1.3	0.49	0.04	0.67	0.38	0.53	0.65	1.00			
Rating comprehensiveness	0.32	0.21	0.24	0.03	0.14	0.13	-0.04	0.3	0.14	1.00		
Word length	4.46	0.46	0.18	-0.07	-0.04	-0.12	-0.004	-0.01	-0.3	0.1	1.00	
Picture numbers	0.62	0.47	-0.07	-0.03	-0.04	-0.19	0.05	-0.16	-0.33	0.2	0.46	1.00

4   RESULTS

4.1 Empirical Results

In Table 2 , the correlation scores are moderate (<0.8). Table 3 shows the detailed results of binomial regression. The Likelihood-ratio test rejects the null hypothesis ($p < 0.01$), which provides the support to use the negative binomial regression. In Table 3, status has a positive effect on review quality (coef = 0.0868 at p $\leqslant$ 0.001)，H2 is supported. The same as status, knowledge (coef = 0.9252 at p $\leqslant$ 0.001) and rating comprehensiveness (coef = 1.251 at p $\leqslant$ 0.001) are proved to affect review quality positively, H4 and H6 are supported. The inverted U curve influence of word length and Picture numbers to review quality are supported in Table 3. Therefore, H5a and H5b are supported. However, the effect of experience, followees and followers on review quality are not significant (p<0.01). In other words, H1a, H1b and H3 are not supported. It may because users who have high experience are not all "social members", they may always browse others' reviews instead of writing reviews. And for users who have many followers, they may have no impetus to attract more attention and write high quality reviews anymore. Moreover, the effect of followees is not support our hypothesis, a user who have a large number of followees just means he would like to browse vast reviews, so, he may also a "quiet member".

Table 3.   Negative binomial regression

Review quality	Coef.	Std. Err.	z	P>|t|
Gender	-0.1837	0.0596	-3.08	0.002
Experience	-0.1257	0.1420	-0.88	0.376
Followees	-0.0231	0.0257	-0.90	0.370
Followers	-0.0205	0.0254	0.81	0.419
Status	0.0868	0.0258	3.37	0.001
Knowledge	0.9252	0.0348	26.58	0.000
Rating comprehensiveness	1.2510	0.1541	8.12	0.000
Word length	3.8398	0.8222	4.67	0.000
Word length^2	-0.2757	0.0895	-3.08	0.002
Picture numbers	0.5934	0.2023	2.93	0.003
Picture numbers^2	-0.4003	0.1307	-3.06	0.002
Pseudo R^2	0.2039			

Likelihood-ratio test of alpha=0:   chibar2 (01) = 3550.63 prob >=chibar2 = 0.000

4.2 The characteristics of reviewers who are susceptible to the policy

To reveal the characteristics of the reviewers who are likely to be encouraged by the high-quality review engagement policy, we classified reviewers who wrote review before and after March 18 into three degree (no change、partially change、completely change)according to the reviewers' behavior. Table 4 shows the details of these three kinds of reviewers. We did t-test and the results are reported in Table 5. As shown in Table 5, reviewers who possess more experience and knowledge are more susceptible to be stimulated by the policy. Moreover, if a reviewer has an intimate interpersonal relationship or holds an important status in the community, he will get stimulated easier.

Table 4.   Information of three kinds of reviewers

	Sample	Description
No change	50	All items (word length, picture numbers, rating comprehensiveness) have no change after the policy.
Partially change	570	One or two items change.
Completely change	109	All items have obvious change after the policy.

Table 5.   Result of reviewers with stimulate

	No change & Partially change	Partially change& Completely change	Partially change& Completely change
Experience level	Support	Support	Support
Followees	Support	Support	Support
Followers	Not support	Support	Support
Status	Support	Support	Support

5   CONCLUSION

This paper investigates the effects of social interaction, personal factors and user participation on review quality. Reviewers' status, knowledge and rating comprehensiveness, which are shown by results, are positively associated with review quality. Moreover, we reveal that there exists an inverted U-curve relation between review length and review quality. The similar relation also exists between picture number and review quality. Furthermore, we show that reviewers who have more experience, knowledge and intimate interpersonal relationship are more likely to be motivated by a high-quality review engagement policy. In addition, we reveal the features of reviewers who are more susceptible to stimulate by the policy. In general, reviewers who are more active in the site are more likely to write high quality reviews and affected by new policy. According to our study, community operators can find out the valuable users who are vulnerable to stimulate by new policy and write high-quality reviews accurately and stimulate them to produce more value. So, community operators can tailor new policy for valuable users to stimulate their sharing behavior in online communities, and keep their continued value for the web site.

6   LIMITATIONS AND FUTURE RESEARCH

As with any other researches, the discoveries of our study have some certain limitations. Firstly, demographic characteristics are the important factors to affect people's behavior, even if the information on the net may be imaginary. Secondly, Mafengwo.cn is one of the most popular travel social media platform of china, which is the first site implementing an objective policy to evaluate review quality. However, we expect future researchers to enhance the generalizability of this study by replicating this study in other platforms.

REFERENCES

[1]   Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall, Inc.

[2]   Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. Educational psychologist, 28(2), 117-148.

[3]   Bandura, A. (2006). Guide for constructing self-efficacy scales. Self-efficacy beliefs of adolescents, 5(307-337).

[4]   Burnett, G. (2000). Information exchange in virtual communities: a typology. Information research, 5(4).

[5]   Chang, H. H., & Chuang, S. S. (2011). Social capital and personal motivations on knowledge sharing: Participant involvement as a moderator. Information & management, 48(1), 9-18.

[6]   Chen, S. Y., & Macredie, R. (2010). Web-based interaction: A review of three important human factors. International Journal of Information Management, 30(5), 379-387.

[7]   Chen, H. N., & Huang, C. Y. (2013). An investigation into online reviewers' behavior. European Journal of Marketing, 47(10), 1758-1773.

[8]   Cheng, H. H., & Huang, S. W. (2013). Exploring antecedents and consequence of online group-buying intention: An extended perspective on theory of planned behavior. International Journal of Information Management, 33(1), 185-198.

[9]   Cheung, C. M., Liu, I. L., & Lee, M. K. (2015). How online social interactions influence customer information contribution behavior in online social shopping communities: a social learning theory perspective. Journal of the Association for Information Science and Technology, 66(12), 2511-2521.

[10] Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. Decision support systems, 42(3), 1872-1888.

[11] Chiu, C. M., Wang, E. T., Shih, F. J., & Fan, Y. W. (2011). Understanding knowledge sharing in virtual communities: an integration of expectancy disconfirmation and justice theories. Online Information Review, 35(1), 134-153.

[12] Cotte, J., Chowdhury, T. G., Ratneshwar, S., & Ricci, L. M. (2006). Pleasure or utility? Time planning style and Web usage behaviors. Journal of interactive marketing, 20(1), 45-57.

[13] Emerson, R. M. (1976). Social exchange theory. Annual review of sociology, 335-362.

[14] Farzan, R., & Brusilovsky, P. (2011). Encouraging user participation in a course recommender system: An impact on user behavior. Computers in Human Behavior, 27(1), 276-284.

[15] Hammond, M. (2000). Communication within on-line forums: the opportunities, the constraints and the value of a communicative approach. Computers & Education, 35(4), 251-262.

[16] Iivari, J., Isomäki, H., & Pekkola, S. (2010). The user–the great unknown of systems development: reasons, forms, challenges, experiences and intellectual contributions of user involvement. Information systems journal, 20(2), 109-117.

[17] Jin, J., Li, Y., Zhong, X., & Zhai, L. (2015). Why users contribute knowledge to online communities: An empirical study of an online social Q&A community. Information & Management, 52(7), 840-849.

[18] Korfiatis, N., García-Bariocanal, E., & Sánchez-Alonso, S. (2012). Evaluating content quality and helpfulness of online product reviews: The interplay of review helpfulness vs. review content. Electronic Commerce Research and Applications, 11(3), 205-217.

[19] Mayer, N. D., & Tormala, Z. L. (2010). "Think" versus "feel" framing effects in persuasion. Personality and Social Psychology Bulletin, 36(4), 443-454.

[20] Mudambi, S. M., & Schuff, D. (2010). What makes a helpful review? A study of customer reviews on Amazon. com. MIS quarterly, 34(1), 185-200.

[21] Munar, A. M., & Jacobsen, J. K. S. (2014). Motivations for sharing tourism experiences through social media. Tourism management, 43, 46-54.

[22] Ormrod, J. (2006). Essentials of educational psychology. Pearson Merrill Prentice Hall.

[23] Quaschning, S., Pandelaere, M., & Vermeir, I. (2015). When consistency matters: The effect of valence consistency on review helpfulness. Journal of Computer‐Mediated Communication, 20(2), 136-152.

[24] Rodriguez, M. G., Gummadi, K., & Schoelkopf, B. (2014). Quantifying information overload in social media and its impact on social contagions. arXiv preprint arXiv:1403.6838.

[25] Shen, W., Hu, Y. J., & Rees, J. (2015). Competing for attention: An empirical study of online reviewers' strategic behaviors. Mis Quarterly, 39(3), 683-696.

[26] Sotiriadis, M. D., & Van Zyl, C. (2013). Electronic word-of-mouth and online reviews in tourism services: the use of twitter by tourists. Electronic Commerce Research, 13(1), 103-124.

[27] YouGov (2014). Americans Rely On Online Reviews Despite Not Trusting Them. Retrieved from https://today.yougov.com/news/2014/11/24/americans-rely-online-reviews-despite-not-trusting/

[28] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS quarterly, 425-478.

[29] Wang, Y., Lewis, M., Cryder, C., & Sprigg, J. (2016). Enduring effects of goal achievement and failure within customer loyalty programs: A large-scale field experiment. Marketing Science.

[30] Zhou, Z., Jin, X. L., & Fang, Y. (2014). Moderating role of gender in the relationships between perceived benefits and satisfaction in social virtual world continuance. decision support systems, 65, 69-79.