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The Research of Online Reviews’ Influence towards management response on Consumer Purchasing Decisions

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Abstract: With the growing population of online shopping, people pay more attention to online consumer reviews which influence consumer purchasing decisions. Consumer reviews are increasingly available online for a wide range of products and services. This paper studies the impact of online reviews on the consumer purchasing decisions towards management response from four dimensions of online reviews number, review valance, review quality and management response by the method of experimental study, and builds the model of relationship between online reviews system and consumer purchasing decisions to test the moderating effect of management response in this model. The results show as follows: online review number, review valance, review quality and management response have a positive influence on consumer purchasing decisions; management response plays the significant moderating role in this process. As a result, characteristics of online review messages and management responses have a varying degree of impact on consumer purchasing decisions. We mainly discuss the implications of our findings for practice.

Keywords: online review, management response, network consumer, purchase decision

1. INTRODUCTION

With the in-depth development of the Internet, making it easier for consumers to search for product information, also making people more easily to exchange the experience of products with others, so shopping online is becoming an indispensable part of the consumers’ daily life. According to findings from the 36th China Internet network development state static report published by China Internet network information center (CNNIC), as of June 2015, Chinese net citizens scale up to 668 million, internet penetration is 48.8% [1]; And 2014 Chinese network-purchasing market research report shows that Chinese Internet retail market maintain the high speed development, the retail sales throughout the year is 2.7898 trillion Yuan [2], in the next network shopping market still has great potential for development. As result, online reviews as one of the important factors influencing consumers’ online shopping, not only bring great convenience for the consumers, still can make enterprises recognize the importance of online reviews, which has caused the attentions of more and more consumers, companies and scholars.

Because of the network information disseminator and receiver are strangers, lead to online reviews compared with the traditional word of mouth has a relatively low level of credit, therefore, to reduce uncertainty and perceived risks, consumers often search for online reviews when making purchase decisions. Prior research has presented extensive evidence showing that online review is important in purchase decision and choice behavior [3][4], while ignoring the management response effects on consumers. However, prior studies on management responses mostly focus on the stand-alone impact of management response [5][6], shedding little light on the interaction between consumer reviews and management responses. Therefore, from the perspective of the consumers and enterprises, establishing the management responses oriented online reviews on consumer

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purchasing decision model turn into a worthy of research direction.

In view of online reviews which have been found to be important on consumer behaviors in the process of network-purchasing, and the lack of studies of management response effects in this text, we first propose the hypotheses of online reviews on consumer purchasing decision, secondly through questionnaire investigation and statistics analysis method to test the above hypotheses, further excavate the influence degree of the specific factors in the online reviews. Our findings provide the corresponding support and understanding for consumers to make scientific decision and for enterprises to make the right marketing.

2. BACKGROUND AND HYPOTHESES

2.1 Online reviews

Bronner and de Hoog (2010) state that eWOM refers to the consumer comments posted on the Internet about products and services [7], eWOM includes a variety of media forms, such as online reviews, online recommendations and online opinions. The most prevalent example is online reviews, which are considered more effective in influencing consumer behavior than traditional WOM. Existing studies consistently find that online consumer reviews play an important impact on consumer purchasing behavior [8]-[9]. Chen and Xie (2008) prove that online user reviews become a new element in the marketing communication mix [10]. Next, Lee, Park and Han (2011) through the analysis of online shopping environment, find that the sensitivity of consumer to the reliability of online reviews is strong [11].

Despite the importance of online reviews are widely recognized, it is also difficult to measure accurately because of many different forms of online reviews in network. For online consumer reviews, we generally think that review number, review valence and review quality which are associated with comment information have a certain importance. Review number refers to the total number of product reviews who post them on the Internet; Review valence demonstrates consumers’ positive or negative attitude towards the product; Review quality adopts the word of review contents to express bad or good information. Jang et al. (2012) further suggest that consumers often pay more attention to these three factors when referring to online product reviews in their purchase decision process [12]. To enhance the stability and reliability of online review, we utilize review number, review valence and review quality to test user comment based on the former scholars’ studies.

2.2 Online review and consumer’s decision

Consumers will take appropriate measures (such as, search product related information) to reduce the risk caused by the uncertainty and lacking of understanding regarding the products. Zhang et al. (2010) find that consumers are likely to follow the opinions of others as a result of pressure to conform to a peer group [13]. The quantity of reviews published on the Internet by consumers indicates that the popularity of the products. Duan et al. (2008) point that online user comments communicate the existence of the product, then review number produce a part of perception effect, they confirm that review number has a positive impact on consumer purchasing decision [14]. Many researches have also shown the positive correlated relationship between review number and product sales. Cui et al. (2012) study electronics and video games, find that the influence of online review number on sales decreases gradually as time goes on, and the early influence is greatest [15]. Zhang et al. (2010) explain that review number plays a positive impact on restaurant trade buyers [13]. Therefore, we hypothesize,

H1. Review number has a positive impact on consumer purchasing decision.

As consumers post their recommendations and opinions about a product on social media, they attempt to persuade other consumers to see their point of view and thus influence their decision-making. Review valence in online shopping process is usually said to be high or low score on products/services. Most of the researches report that the products with high score can attract consumers’ attention and increase purchasing desire.
example, Moe and Trusov (2011) demonstrate that consumers’ purchase behavior is significantly affected by previous positive ratings from other users [16]. Different scholars research review valence from different industries and fields. In view of the book industry, Sun (2012) suggest that online ratings significantly affect the sales of books, and a higher score on Amazon website can push more consumers to buy [17]. Verma et al. (2012) report that consumer ratings have a strong positive effect on customers’ willingness to book a hotel [18]. We then hypothesize,

**H2.** Review valence has a positive impact on consumer purchasing decision.

Chen et al. (2007) investigate the impact of review quality on book sales from Amazon website, and find that consumers are more willing to buy some books with high quality [19]. Huang et al. (2015) suggest that word count has a threshold in its effects on review helpfulness; beyond this threshold, its effect diminishes significantly or becomes near non-existent [20]. Mudambi and Schuff (2010) believe that online user review information for purchase decision is crucial, and define the useful comments as product review which can promote consumers to make purchase decision. The research finds that review length influences the perceived usefulness of comments [21]. Therefore, the comments with higher quality possess strong correlation and perceptual comprehension characteristics. When making a statement, the reviews have more persuasion out of arguments to support. In conclusion, review quality is more influential for purchase decision. Based on these arguments, we hypothesize,

**H3.** Review quality has a positive impact on consumer purchasing decision.

### 2.3 Management responses to consumer reviews

Management response is a new type of customer relationship management (CRM) [22]. It is not only a strategic approach, but also a kind of marketing. It refers to a marketing process with the aim of maintaining a positive relationship with customers in order to increase customer satisfaction, incubate customer loyalty, and improve customer retention [23]. Levy et al. (2013) analyze management response and the dynamic mechanism of negative comments in the background of hotel; they find that a few hotels do some substantial compensation for consumer complaints [24]. Gu and Ye (2014) examine the impact of management response on customer satisfaction. Their results show that the satisfaction level of consumers who made the complaints in their reviews increases after they received management responses [22]. Guest satisfaction is usually positively associated with their purchases. Today in the face of complex online shopping environment, consumers demand in choosing products is simple, safe and reliable, thus the market of management response should be perfected gradually. It is therefore reasonable to assume.

**H4.** Management response has a positive impact on consumer purchasing decision.

On the one hand, online consumers usually make use of the function of Internet to complain the seller when they are not satisfied with the product/service. In the case of appearing the negative evaluation, consumers giving the low score harm is harmful to the reputation of business and operations. Relative corporations should carry on management responses to recover service and take the initiative to resolve disputes. Then customer satisfaction can be improved and consumer purchasing intention is increasing gradually. Gu and Ye (2014) find that online management responses can change the mindset of customers who give products/services low ratings [22]. On the other hand, businesses should focus on the negative comments at the same time, also consider the positive comments. It will be beneficial to establish harmonious relationship. Sellers can learn from them and dare to have mutual trust with outspoken customers. It is presumed that management responses play a regulatory role in researching user reviews on purchase decision. From the above, we hypothesize,

**H5a.** Management response adjusts the relationship between review number and consumer purchasing decision.

**H5b.** Management response adjusts the relationship between review valence and consumer purchasing decision.
decision.

**H5c.** Management response adjusts the relationship between review valence and consumer purchasing decision.

By the above assumption and analysis, the paper forms the conceptual model of online reviews oriented management responses on purchase decisions, as shown in Figure 1.

![Conceptual Model](image)

**Figure 1. Conceptual model**

3. **METHOD**

3.1 **Questionnaire survey**

This study mainly discusses the relationship between online reviews based on management response and consumer purchasing intention, so the main research objects are consumers who shopping online. This paper references the maturity scale in the past research, review number is composed of four items which consult Park and others’ scale [25]; according to the scale of Chevalier & Mayzlin, review valence has four items [8]; review quality (review depth) adopts Dhanasobhon’s scale which has five items, we revised the scale and ultimately get four items [19]; because of the less of management response study, the article taking the custom way, management response consists of three items; purchase intention based on the measurement scale by Dodds et al., is made up of four items [26]. At the same time, this study will also consult marketing experts to modify the scale, as well as to the crowd people with online shopping experience for small-scale interview. According to the feedback, modifying semantic fuzzy multi-item, meaning repetition, refining multi-item of each variable, and through the preliminary research to delete, adjust the inappropriate multi-item, finally forming the questionnaire measurement. The main part of the questionnaire using Likert 5 scoring method, respondents based on their own online shopping experience to evaluate for the situation described in the questionnaire form “strongly disagree” to “strongly agree”, and give the corresponding score: 1-5.

3.2 **Data collection**

This research mainly for college students who have online shopping experience, include not only students, but also teachers and staffs. Article collects data primarily through issuing electronic questionnaire and field orientation. This gave out 200 questionnaires, recycling 186 questionnaires, and looking up for the recycling questionnaires, excluding 13 invalid questionnaires which have obvious perfunctory, leakage problem solving and the apparent contradiction, at last obtain 173 valid questionnaires, effective questionnaire recovery rate reached 86.5%, all the collected data statistical analysis in SPSS.
4. ANALYSIS OF DATA

4.1 Test of reliability and validity

In order to guarantee the rationality of the sample data, we should analyze the reliability and validity of the questionnaire scale firstly, testing reliability by alpha coefficient and composite reliability (CR). The paper uses SPSS19.0 to calculate the alpha coefficient of review number, review valence, review quality, management response and purchase decision as shown in Table 1. Results indicate that the overall questionnaire alpha coefficient is high and the scale has good internal consistency.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item number</th>
<th>CR</th>
<th>AVE</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>review number</td>
<td>4</td>
<td>0.860</td>
<td>0.607</td>
<td>0.781</td>
</tr>
<tr>
<td>review valence</td>
<td>4</td>
<td>0.897</td>
<td>0.685</td>
<td>0.846</td>
</tr>
<tr>
<td>review quality</td>
<td>4</td>
<td>0.894</td>
<td>0.679</td>
<td>0.839</td>
</tr>
<tr>
<td>management response</td>
<td>3</td>
<td>0.879</td>
<td>0.709</td>
<td>0.790</td>
</tr>
<tr>
<td>purchase decision</td>
<td>4</td>
<td>0.819</td>
<td>0.533</td>
<td>0.703</td>
</tr>
</tbody>
</table>

Data analysis results show that the factor loading value of each index were higher than 0.5, and average variance of the latent variables is above 0.5, indicate that each latent variables has better convergent validity. From table 2, we can see the correlation coefficient between the various factors is less than the square root of AVE on the diagonal, and show that each variable has high distinction validity. Hence, the scale has good construct validity. The scale using in this paper is based on the existing mature research, combined with the research subject, this article through expert review and further modify the questionnaire. As result, the scale in this article has high content validity.

4.2 Correlation analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>review number</th>
<th>review valence</th>
<th>review quality</th>
<th>management response</th>
<th>purchase decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>review number</td>
<td>0.779</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>review valence</td>
<td>0.564**</td>
<td>0.828</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>review quality</td>
<td>0.618**</td>
<td>0.557**</td>
<td>0.824</td>
<td></td>
<td></td>
</tr>
<tr>
<td>management response</td>
<td>0.605**</td>
<td>0.536**</td>
<td>0.634**</td>
<td>0.845</td>
<td></td>
</tr>
<tr>
<td>purchase decision</td>
<td>0.597**</td>
<td>0.711**</td>
<td>0.624**</td>
<td>0.601**</td>
<td>0.730</td>
</tr>
</tbody>
</table>

Note. “***” and “**” denote respectively p<0.01, p<0.05, ** Significant at 0.01 level(double side).

From Table 2, the output of results can be concluded that four factors (review number, review valence, review quality and management response) of online reviews under the 0.01 level, all has significant correlation with consumer purchase decision.

4.3 Regression analysis

We insert review number, review valence, review quality and management response into independent variable, consumer purchase decision as dependent variable, and do regression analysis, the results specifically see Table 3.
Table 3. Regression analysis of online reviews on consumer purchase decision

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>review number</th>
<th>review valence</th>
<th>review quality</th>
<th>management response</th>
<th>F</th>
<th>R²</th>
<th>Adjusted R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression coefficient</td>
<td>0.108</td>
<td>0.360</td>
<td>0.166</td>
<td>0.134</td>
<td>54.01</td>
<td>0.601</td>
<td>0.592</td>
</tr>
</tbody>
</table>

From Table 3, the determination coefficient $R^2$ has changed after adjustment, show that poor content change, and F statistic significant probability is 0.000, the overall regression effect is remarkable. Regression coefficient of each variable on 0.01 or 0.05 levels is obvious, so we determine H1, H2, H3 and H4 are right.

4.4 Moderating effect

At first, the paper respectively does regression analysis for the interaction of review number, review valence, review quality and management response on consumer purchase decision, on this basis, using multi-factor analysis of variance test in case of existing independent variable and dependent variable, whether the interaction effect is significant for purchase decision.

Table 4. Regression output of management response as a moderator towards purchase decision

<table>
<thead>
<tr>
<th>Model</th>
<th>review number * management response</th>
<th>review valence * management response</th>
<th>Review quality * management response</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>0.086</td>
<td>0.105</td>
<td>0.096</td>
</tr>
<tr>
<td>Beta</td>
<td>0.646***</td>
<td>0.743***</td>
<td>0.659***</td>
</tr>
</tbody>
</table>

From regression coefficient of Table 4, we know that management response as a moderator variable in the regression equation, the coefficient off the product of review number, review valence, review quality and management response were 0.086, 0.105, 0.096, its standard regression coefficient beta were 0.646, 0.743, 0.659 respectively, all of them are significant at 0.001 level. So making a separate analysis on the interaction effect of review number, review valence, review quality and management can be found that management response as a moderator variable significantly affect the relationship between review number, review valence, review quality and consumer purchase decision. And hypotheses H5a, H5b, H5c are supported.

Next, using the multi-factor analysis of variance further to verify when management response and review number, review valence, review quality are under the condition of existence, whether the interaction effect of them on consumer purchase decision is still significant.

Table 5. Research test of Inter-Subjects Effects

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>review number</td>
<td>13.246</td>
<td>.000</td>
</tr>
<tr>
<td>management response</td>
<td>9.093</td>
<td>.000</td>
</tr>
<tr>
<td>review number * management response</td>
<td>8.514</td>
<td>.000</td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>review valence</td>
<td>19.895</td>
<td>.000</td>
</tr>
<tr>
<td>management response</td>
<td>17.244</td>
<td>.000</td>
</tr>
<tr>
<td>review valence * management response</td>
<td>8.112</td>
<td>.000</td>
</tr>
<tr>
<td>(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>review quality</td>
<td>5.981</td>
<td>.000</td>
</tr>
<tr>
<td>management response</td>
<td>6.579</td>
<td>.000</td>
</tr>
<tr>
<td>Review quality * management response</td>
<td>5.389</td>
<td>.000</td>
</tr>
</tbody>
</table>
From the model 1 in Table 5 can be seen, the value of F of review number and management response were 13.246, 9.093, significance level were 0.000 and less than 0.05, illustrate that the influence of review number and management response on a completely different level to purchase decision exists significant differences; The F value of interaction terms of review number with management response is 8.514, and its significance level expressed as 0.000 < 0.05, all of them indicate that while review number and management response exist at the same time, the interaction effect of them on purchase decision is significant. Similarly, when review valence and management response, review quality and management response exist simultaneously, the interaction effect of them on purchase decision is still significant.

5. CONCLUSIONS AND INSPIRATION

This paper discusses the influence of online reviews on consumer purchasing decision; analyzes the moderation effect of management response on review number, review valence and review quality; and sets up the mechanism model of online reviews affecting consumer purchasing decision. On the basis of the analysis of previous studies, we put forward the corresponding hypotheses between the variables and test if these assumptions are verified through the empirical analysis. The overall inspection results are as follows.

<table>
<thead>
<tr>
<th>Description</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Review number has a positive impact on consumer purchasing decision</td>
<td>support</td>
</tr>
<tr>
<td>H2 Review valence has a positive impact on consumer purchasing decision</td>
<td>support</td>
</tr>
<tr>
<td>H3 Review quality has a positive impact on consumer purchasing decision</td>
<td>support</td>
</tr>
<tr>
<td>H4 Management response has a positive impact on consumer purchasing decision</td>
<td>support</td>
</tr>
<tr>
<td>H5a Management response adjusts the relationship between review number and consumer purchasing decision</td>
<td>support</td>
</tr>
<tr>
<td>H5b Management response adjusts the relationship between review valence and consumer purchasing decision</td>
<td>support</td>
</tr>
<tr>
<td>H5c Management response adjusts the relationship between review quality and consumer purchasing decision</td>
<td>support</td>
</tr>
</tbody>
</table>

5.1 Research conclusions

First, online reviews have a significant influence on consumer purchasing decision. That is review number, review valence, review quality or management response has a significant influence on consumer purchasing decision.

Specifically, Firstly review number has significantly positive effects on consumer purchasing decision. Consumers browsing the more numbers of reviews to product or service in the network explain that the products purchased by more and more people make consumers produce psychological dependence, which can increase the desire to buy. Secondly review valence has a positive influence on consumer purchasing decision. The higher comment rating is, the easier consumer will produce satisfaction. Online review valence will more likely become one of the most important factors to choose this product for consumers. Thirdly review quality also positively affects consumer purchasing decision. Consumers posting the longer comments publicly on the Internet show that their serious for this purchase. Other customers will follow their behaviors and adopt this review more likely. All of these reviews ultimately affect consumer purchasing decision. Lastly in view of consumer comments, management response written by the sellers has a positive impact on consumer purchasing decision as well. Whether facing the positive or negative reviews, sellers should be responsive to them. Management response can increase the interaction between consumers and sellers, let potential consumers to recognize the merchant’s sincerity and nice attitude, and improve the possibility of consumption again online.

Second, management response as one element of online reviews plays a significant adjustment effect in consumer decision-making process. Consumers keep a watchful eye on both negative and positive reviews;
especially pay close attention to management response. Having review number, review valence, review quality and management response enhance consumers purchasing psychological security. Consumers not only refer to others’ experience, also review sellers’ reputation and attitude.

5.2 Management suggestions and limitations

Online reviews as consumer feedbacks about product, service, logistics, etc, its auxiliary function of sales are realized by enterprises gradually. These companies make use of the valuable information to formulate rational and effective marketing solutions which can better meet the needs of consumers and bring themselves more profits and benefits. As a result, the study findings of online review system have important meanings.

- Electric commercial enterprises must strengthen the management consciousness of online reviews. For businesses, two-way evaluation given by consumers should be paid more attention to. In order to reduce the consequence of negative reviews, relevant enterprises can manage and control these reviews by setting specialized personnel and organization and putting to the resources. In the proper circumstances, these workers can guide the buyers who will give the negative word of mouth, and prompting them to make a positive evaluation.

- Service providers should enhance the interaction and feedback of online reviews. An open network platform is available for consumers to writing their experience or opinions freely. Lacking of communication and exchange between e-businessmen and consumers result in the transmission of information by one-way. This study results show that management response has a significantly impact on consumers, and management response reflect the relationship between e-businessmen and consumers. Thus promoting the interaction between social media, merchants and consumers is conductive to understand the information of product or service for consumers, help merchants to know consumer purchase intention accurately.

- Shopping websites should encourage consumers to publish additional comments on management response. In current shopping websites lacking of management response lead to few consumers to post additional comments to management response, its main reason is that consumers are short of the power of writing additional comments. Therefore, shopping websites can use the corresponding marks, extraction of the lucky reviewers and other incentives to encourage consumers to post additional comments after the management replies. These measures thus can boost consumer purchasing desire.

As with all empirical studies, this study is not without limitations. First of all, we only collected offline data, resulting the lack of data integrity; therefore, in the later study, we can gather online and offline data and make the article more truthfulness. Secondly, although our analysis has increased management response, but ignore the impact of timeliness, frequency and way of management response on purchase behavior. At last, our emphasis concentrate on online review itself, does not take into account the publisher of comments, such as the arguer’s competency etc. In the future, we can further study the influence of comment system platform on consumer purchasing decision and network sales.

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