

The Impact of Taobao Online Reviews on Online Shopping Behavior

—Experimental Analysis of Three Squirrels Flagship Store

Kaiyuan Deng¹, Yingxiang Cheng²

e-mail: Bcu520@bcu.edu.cn, e-mail: chengyingxiangputra@gmail.com

¹Department of Economics and Management Beijing City University, Yang Zhen, Shunyi Beijing, China

²Universiti Putra Malaysia, 43400 UPM Serdang Selangor, Darul Ehsan, MALAYSIA

Abstract—Using a regression model, this paper investigates the impact of consumer online reviews on consumer purchasing decisions using three squirrels online consumer reviews as the research object. In June 2021, 168 online users were polled to assess the influence of purchasing decisions using a questionnaire based on characteristics such as review quality, review number, review valence, and perceived credibility. The findings revealed that review quality, number of reviews, polarity of reviews, and perceived reliability of reviews all had a significant beneficial impact on consumer purchase decisions ($P < 0.5$). Merchants should pay attention to the marketing significance of internet reviews, according to experts.

Keywords—E-commerce; Online review; Consumer purchase decision;

1 INTRODUCTION

According to the 2021 World Internet Conference's China Internet Development Report, the number of Chinese Internet users reached 1.011 billion in June 2021, with a 71.6 percent Internet penetration rate ^[1]. The overall amount of e-commerce transactions in China reached 37.2 trillion yuan in 2020, while the number of online consumers in China had reached 710 million by March 2020 ^[2]. The "Three Squirrels" flagship store analyzed in this study is a flagship store with high brand influence in the snack business, and is a model enterprise of new retail. It is mostly based on Internet technology for online sales. This paper extracts some of the characteristics from the online review data provided by the online review platform of the three squirrel flagship stores on the Taobao website, and investigates the impact of online review quantity, review quality, review valence, perceived credibility, and other factors on user purchase behavior.

2 RESEARCH METHODS AND HYPOTHESES

2.1 Literature Research Method

This paper uses the combination of relevant theories and practical activities to analyze and explore the purchase intention of consumers. The specific research methods include the following:

2.1.1 Questionnaire survey method

In order to test the accuracy of the hypothesis and the model, this paper combines the specific requirements of the actual theory and practice, systematically summarizes and reorganizes the mature scale compiled by domestic experts and scholars, integrates and modifies the mature scale according to the characteristics of this paper, and finally collects the data needed in this paper in the form of questionnaires.

2.1.2 Mathematical Statistics Analysis

In order to ensure the quality of the scale, the collected data were analyzed as follows: (1) descriptive statistical analysis of the basic information of the respondents; (2) reliability and validity of the questionnaire were tested by SPSS to verify the reliability and validity of the questionnaire; (3) Use online SPSS correlation analysis to observe the relationship between the data in this study and the degree of correlation; (4) Use online SPSS linear regression analysis to study the relationship between X (independent variable) and Y (dependent variable), and then draw conclusions.

2.2 Research Hypothesis

The more the number of reviews, the more it can attract the attention of consumers, and also improve the popularity of the product so as to become a hot-selling product. Similarly, the more reviews you get, the more information you get, and the better you know about the product. The relationship between review quality and purchase intention. Nowadays, in order to attract more users to consume, many businesses improve the sales of products and their own image. Many online businesses choose to hire some people to make false reviews and improve their products by brushing bills^[3]. At the same time, some consumers can not really reflect the authenticity of the product by commenting freely. Therefore, if the quality of online reviews is higher, the more information they reflect, the greater the impact on purchasing behavior. Comment on the relationship between valence and purchase intention. Consumer reviews are often good reviews, medium reviews and bad reviews of products. Generally speaking, good reviews can promote consumers to consume, while bad reviews can inhibit consumers' desire to buy.

Therefore, if the product has a large number of good reviews, consumers will have a stronger desire to buy. Therefore, the research assumptions of this paper are as follows:

H1: There is a significant positive correlation between the quantity, quality and valence of reviews and consumers' purchase intention. There is no substantial understanding of the goods before purchasing, so there is a certain risk of purchasing. Moreover, consumers can not

personally feel the quality of products, there may be a great difference between expectations and reality, resulting in perceived risk. At this time, more consumers alleviate their concerns by analyzing the authenticity of online reviews, so this paper makes assumptions ^[4].

H2: There is a significant positive correlation between perceived credibility and consumer purchase intention.

3 RESEARCH AND ANALYSIS

3.1 Questionnaire design

The questionnaire of this paper mainly includes the following parts: the description of the questionnaire, the variable measurement questions, and the basic personal information of the respondents. First of all, the questionnaire is mainly used for academic research, and will not be open to the public, the respondents can be assured to answer truthfully. Secondly, the variable measurement question is an important part of the questionnaire, which mainly includes the following five categories: the credibility of the review, the number of reviews, the quality of reviews, the valence of reviews and the purchase intention of consumers. This part mainly uses Likert five-scale to measure variables, so the options are very inconsistent, inconsistent, uncertain, consistent and very consistent. Finally, the personal information of the respondents mainly includes gender, age, occupation, and income level ^[5].

Table 1 Measurement Indexes of Questions

Description of Measurement Content of Level I	Number of reviews	Indicator Variable Symbol Scale
Number of reviews	X1	Fewer reviews from consumers who have already purchased in the store will affect my purchase decision
	X2	I will focus on the number of good reviews in the store.
	X3	I will focus on the number of bad reviews in the store.
	X4	In general, If the number of negative reviews for a product in this store exceeds 1/10, I will not consider buying the product in this store.
Review Quality	X5	The online reviews of the store reflect the quality, taste and other related characteristics of the goods.
	X6	I feel that the goods in this store are more cost-effective than those provided by other merchants.
Review Potency	X7	I fully believe the positive reviews in this store.
	X8	I prefer to believe the negative reviews in the store.
	X9	I tend to focus on extreme reviews.
	X10	Extreme comments have a greater impact on me.
Perceived Trustworthiness	X11	I will pay attention to the negative review content first when I buy for the first time.

	X12	Strong comments will affect my judgment even more.
	X13	Provocative positive comments will arouse my doubts or disgust.
	X14	I will be convinced of the authenticity of the online reviews in the store.
Consumer Purchase Decision	X15	I will often choose to buy goods in this store.
	X16	I would be happy to recommend this shop to my friends
	X17	The store's online reviews have had a positive impact on my purchase intent
	X18	The online review of the store's snack gave me some new information about the snack.
	X19	The process of buying snacks in the store gave me a pleasant experience.

3.2 Correlation Analysis

Because the logical relationship between correlation analysis and linear regression is that there is a correlation relationship first, and then there is a regression relationship. Therefore, it is necessary to use correlation analysis before monadic linear regression to determine the degree of closeness between quantitative data.

Table 2 Results of correlation analysis

Pearson Correlation-Standard Format	
	Y-Consumer Purchase Decision
H1-Number of comments	0.538**
H2 — review quality	0.552**
H3 — Comment titer	0.608**
H4-Perceived Confidence	0.604**
* p<0.05 ** p<0.01	

It can be seen from Table 2 that correlation analysis is used to study the correlation between Y-consumer purchase decision and H1-comment quantity, H2-comment quality, H3-comment valence, H4-perceived credibility, and the correlation coefficient is used to express the strength of the relationship. The specific analysis shows that the coefficient values between Y and H1, H2, H3, H4 are all greater than 0, and the p value after each coefficient value is represented by two **, which proves that there is a significant relationship between Y and H1, H2, H3, H4 respectively, and the linear regression analysis can be carried out.

3.3 Regression analysis

The essence of regression analysis is to verify the hypothesis by studying the influence of independent variables on dependent variables.

3.3.1 Regression Analysis of the Number of Reviews and Consumers' Purchase Decision

It can be seen from Table 3 that the independent variable is H1 — the number of comments, and the dependent variable is Y — the consumer's purchase decision. First of all, F test ($F = 67.690$, $p = 0.000 < 0.05$) shows that the number of comments must have an impact on the consumer's purchase decision; The B value for review quality was 0.561 ($t = 8.227$, $p = 0.000 < 0.01$).

Table 3 Results of regression analysis on the number of comments and consumers' purchase decision

Results of linear regression analysis (n=168)									
	Denormalization coefficient		Normalizati on coefficient	t	p	VIF	R ²	AdjustmentR ²	F
	B	Standard error	Beta						
Constant	1.835	0.244	-	7.519	0.000**	-	0.29	0.285	F(1,166) =67.690, p=0.000
H1— Number of reviews	0.561	0.068	0.538	8.227	0.000**	1			
Dependent variable: Y-consumer purchase decision									
D-Wvalue: 1.714									
* p<0.05 ** p<0.01									

3.3.2 Regression Analysis of Review Quality and Consumer Purchase

It can be seen from Table 4 H2-review quality, and the dependent variable is Y-consumer purchase decision. First, F test ($F = 72.664$, $p = 0.000 < 0.05$) shows that H2-review quality will certainly have an impact on Y-consumer purchase decision; The B value for the quality of comments in Table 4 is 0.477 ($t = 8.524$, $p = 0.000 < 0.01$).

Table 4 Results of regression analysis on review quality and consumer purchase decision

Results of linear regression analysis (n=168)									
	Denormalization coefficient		Normalizati on coefficient	t	p	VIF	R ²	AdjustmentR ²	F
	B	Standard error	Beta						
Constant	2.009	0.216	-	9.317	0.000**	-	0.304	0.3	F(1,166) =72.664,

H2-review quality	0.477	0.056	0.552	8.524	0.000**	1			p=0.000
Dependent variable: Y-consumer purchase decision									
D-Wvalue: 1.814									
* p<0.05 ** p<0.01									

3.3.3 Regression Analysis of Review Potency and Consumer Purchase Decision

It can be seen that the independent variable is H3-review valence, and the dependent variable is Y-consumer purchase decision. In the linear univariate regression analysis, the F test is conducted first ($F = 97.256$, $p = 0.000 < 0.05$), indicating that H3-review valence will certainly affect Y-consumer purchase decision; The B value of the review titer was 0.613 ($t = 9.862$, $p = 0.000 < 0.01$).

3.3.4 Regression Analysis of Perceived Credibility and Consumer Purchase Decision

It can be seen that the independent variable is H4-Perceived Credibility, and the dependent variable is Y-Consumer Purchase Decision. First of all, through the F test ($F = 95.245$, $p = 0.000 < 0.05$), it shows that H4-Perceived Credibility will certainly have an impact on Y-Consumer Purchase Decision; The B value for perceived credibility was 0.643 ($t = 9.759$, $p = 0.000 < 0.01$).

4 CONCLUSION

4.1 Summary of research conclusions

According to the results, the assumptions put forward at the beginning of this paper have been verified, and the specific results are as follows:

4.1.1 Number of Reviews and Consumer Purchase Decisions

Data analysis shows that the number of reviews has a significant positive impact on consumer purchase decisions. The more the number of reviews, the greater the amount of information reflected, and consumers can get more information to accurately assess the quality of products, thus reducing the perceived risk. It shows that consumers have a certain recognition of the number of evaluations in the Three Squirrels Flagship Store, so the number of good evaluations or the number of medium and bad evaluations can be used as a reference for purchase decisions. At the same time, if a product in the Three Squirrels Flagship Store has more than 1/10 bad evaluations, consumers will not buy it.

4.1.2 Decisions Comment on the impact of quality on consumer purchase decisions

According to the data analysis, review quality has a significant positive impact on consumer purchase decisions. The quality of reviews reflects the actual use of products and whether the content of reviews is true and can provide effective reference for potential buyers. This study

proves that the online reviews of the three squirrel flagship stores can provide information about the quality, taste and other related characteristics of products for the next consumer, thus affecting the purchase behavior of consumers who are still in the observation stage.

4.1.3 Comment on that effect of valence on consumer purchase decision

The analysis of the results shows that the review valence has a significant positive impact on consumer purchase decisions. If there is negative information or extreme information, consumers will feel the authenticity of the comments, will make screening and reference according to their own needs for goods, increase the price of the comments, and help to improve consumers' willingness to buy.

4.1.4 Perceived Credibility and Consumer Purchase Decision

The result analysis of the relationship between perceived credibility and consumer purchase decision shows that perceived credibility has a significant positive impact on consumer purchase decision ^[6]. This conclusion shows whether people who have made purchases can use objective emotional factors in evaluation, then use subjective emotions to influence their purchasing behavior, and finally judge whether they will recommend goods to friends around them. In this special environment, consumers can not personally perceive the quality of goods as in physical stores, only through the evaluation of other consumers to judge, which is the most intuitive and convenient reference channel.

The study found that most consumers will comment on the product when they buy it, and will pay attention to the feedback of product satisfaction, especially the online comments such as the product itself, the authenticity of the product and the online service attitude of the shopkeeper, and finally produce purchasing behavior or wait-and-see behavior.

4.2 Research proposal

There is a huge difference between Internet shopping mode and traditional shopping mode. Under the traditional consumption mode, consumers regard the long-term reputation of stores as the basis of consumption judgment. Because of the huge amount of information and fast consumption characteristics of Internet shopping, the information that consumers face in a short time is very complex, so the ability to distinguish will be reduced. In addition, they can not perceive the actual quality of products, so they lack the basis for judging the quality of goods. On this premise, Once the buyers and users of the product, the online evaluation of the product will become an important basis for the next consumer to buy the product. From this point of view, the three squirrel flagship stores can focus on the objective evaluation content of consumers, guide consumers to evaluate objectively while supplementing subjective emotions to evaluate goods, such as providing some representative keywords for consumers to choose or fill in independently. Because this kind of seemingly objective content with strong emotional color can influence consumers' purchasing behavior more ^[7]. In addition, the Three Squirrels flagship store should pay more attention to customers who have consumed many times in the store, or customers who have a higher level of online shopping. These customers have made many purchases, and their experience is relatively more, and they can express more information.

4.3 Insufficient research

First of all, the reliability analysis results of comment quality are relatively low. Although there are only two questions in the scale to verify the independent variable, the coefficient value is acceptable, which means that the data in this paper can be accepted, but if we can consider increasing the questions to analyze the independent variable of comment quality in the follow-up study, we can get more information.

Secondly, there are many factors that influence consumers' purchase decision-making mechanism, and this paper focuses on several important factors that influence online reviews. However, these factors in this study are not the decisive factors affecting consumers, whether the purchase behavior really depends on the consumer's own situation, the attributes of the product and the attributes of the substitutes.

4.4 Research prospects

Use big data technology to expand data sources and improve research methods. Three Squirrel Flagship Stores can use big data mining technology to analyze and classify the data of consumer browsing records and keyword information on the platform.

In this way, we can better understand the consumption tendency and willingness of target customer groups, and use personalized recommendation system to provide consumers with more targeted product promotion according to their consumption needs. Pay attention to the marketing value of online reviews to merchants. The cost of consumer comments on goods is lower, so the transparency of information is higher, anyone can express their views through the network platform, and anyone's views will have a certain impact on the audience to obtain information. Therefore, in the network era with high information transparency, the competition among businesses is not only the competition between product quality, but also the competition from design to information marketing communication. Therefore, the Three Squirrels Flagship Store should pay attention to the management of online reviews and build a perfect online review management and operation system.

REFERENCES

- [1] China Internet Network Information Center (CNNIC). 45th Statistical Report on the Development of Internet in China [R]. China: China Internet Network Information Center, 2020.
- [2] Sun Dandan, Xu Xiaoyan. Research on propagation mechanism of online customer reviews based on agent simulation [J]. *Operations Research and Management*, 2013, 22 (3): 154-161.
- [3] Du Xuemei, Ding Jingyu. The influence of online reviews on consumers' purchase intention [J]. *Management Review*, 2016, 28 (3): 173-182.
- [4] Yu Hongyan. Qualitative and Quantitative Survey of Consumer Behavior [J]. *Contemporary Economic Research*, 2000, 10: 39-43.
- [5] Liu Niannian, Zou Yan, Wang Fangjie. Literature Review of Consumer Purchase Behavior Analysis under B2C Platform [J]. *New Economy*, 2015, 7: 52-52.
- [6] Jin Liyin. The influence of online word-of-mouth information on consumers' purchase decision: an experimental study. *Economic Management*, 2007,22: 36-42.

[7] HONG Fei, ZHENG Hui, ZHOU Yingfan, et al. A Study on the Impact of Online Reviews on College Students' Purchase Intention [J]. Business Economic Research, 2019, 8: 52-56.