Exploring the Factors Influencing the College Student's Motivational Nature of Negative Evaluation on E-commerce Products

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ABSTRACT

With the rapid development of Internet technology, the E-commerce platform is driven. Online shopping has gradually become an indispensable part of people's lives. At the same time, the Internet pushed the development of online reviews. Some data show that consumers pay the most attention to the information from online product reviews when making decisions. However, negative product reviews have a more profound effect on consumer decisions. The main force of online shopping reviews and one of the largest audiences, college students are influencing various aspects of the e-commerce industry. The factors that increase their motivation to produce negative reviews are the key focus of this study. Therefore, in this paper, using questionnaires and statistical regression analysis from the perspective of college students, we find that there are five main negative evaluation factors on e-commerce platforms, respectively, product quality, description and price, merchant service, and logistics and delivery process. Merchants can combine the actual problems of their products for the research and implementation of countermeasures.

Keywords : *College students, e-commerce merchants, purchasing behavior, negative evaluation, influencing factors*

1. INTRODUCTION

According to the data of China Industry Information Network (CINIC)[1], the total size of Internet users in China has reached 1.032 billion by the end of December 2021. Compared with the 42.96 million new Internet users in December 2020, the Internet penetration rate reached 73.0%. This statistic indicates that the rapid development of the Internet and its open and global nature have established a solid foundation for the development of online shopping platforms in China [2].

College students are an indispensable group in the consumer segment, they have more discretionary time, more flexible access to the Internet, and stronger consuming concepts and awareness. They have a strong consumer perspective and awareness and have diverse selections of online shopping platforms [3]. The purpose of this research paper is to provide certain reference for merchants of various e-commerce platforms, to help pay attention to the uniqueness of college students in the consumer population, to clarify their own problems and to optimize their marketing strategies.

An overview of related research literature at domestic and international sites reveals that there is already published literates on college students' online purchases using models, satisfaction and consumer decision theories, and more results have been achieved in various directions. This paper will explore the post-purchase evaluation behavior of college students, which is a social phenomenon that is more likely to have a negative impact on society and without universal characteristics. At present, there is still a relative lack of articles on this topic, so research and research in this area will help to increase the analysis of e-commerce platforms from an academic perspective, and provide more scientific development directions to trade retail, markets and customers.

2. CONCEPT OVERVIEW AND HYPOTHESIS

2.1. Negative reviews on e-commerce products

2.1.1. Concept

Negative reviews of users in online shopping are means of diffusion in online shopping platforms. Negative reviews of online shopping are feedback from consumers on the degree of dissatisfaction in the shopping process and an assessment of the merchant's product and service satisfaction. Feedback indexes directly reflect the consumer group's perception of online shopping and are also a key factor influencing the development of online shopping[4]. When consumers have a large psychological gap before and after product perception, there is an online intention to go to vent their negative feelings through negative reviews[5].

Studies have shown that in the after-sales evaluation of e-commerce products, negative reviews show more significant adverse effects on customers' purchasing behavior compared to positive reviews, which particularly damage the trust of potential consumers[6]. Because they are more sensitive to the loss than the experience of the product. They worry that the problems reflected in negative reviews will be repeated, thus making them lose the desire to purchase. However, as consumers accumulate online shopping experiences, they will gradually tend to make rational choices in the online shopping process, so they are more inclined to rely on negative reviews to decide their shopping intentions[7-8].

2.1.2. College students' online purchasing behavior

College students are a special and important part of the online consumer group, with strong specificity, initiative, high degree of individuality and curiosity. They not only know the processing and operating of online purchases smoothly, but also are the main recipients of online products[9]. From the performance of their personalized life and mobility needs in online shopping consumption, it can be seen that college students have the characteristic of boldly seeking new experiences and can accept new ideas of social frontier.

College students will believe in their real experience to a certain extent when they consume. They will develop trust and dependence on their familiar brands and gradually develop a fixed preference, eventually forming a habit of using and maintaining a good loyalty to this product[3]. College students are not only able to clarify their individual needs, but also to communicate with merchants on an equal and effective way in the transaction process. Even to make substantial suggestions on the actual needs of products, and to meet the demand level of shopping and consumption. Therefore, it

becomes especially important for e-commerce merchants to maintain the satisfaction of college students with their products and services.

2.2. Factors and assumptions of college students' motivation to produce negative reviews

2.2.1. Factors

According to the consumption behavior habits of the public, comparison, and pursuit of high cost-effective is one of the essential influencing factors in shopping life [10]. Most college students will refer to the details of the purchase experience for after-sale evaluation when they purchase goods. The current negative review information mainly focuses on three levels: product, service, and logistics, including products that are not matching the description of the merchant, products quality defects and unreasonable price; poor service attitude of the merchant, failure to solve problems effectively in time; logistics with slow timeliness, poor service attitude and damaged product packaging, etc. These problems will not only affect the overall shopping experience of college students, but also make them motivated to make negative evaluations.

2.2.2. Assumptions

In this paper, by combining the previous research of scholars and the actual circumstances of college students in China, we discuss the factors influencing the motivation of negative feedback on e-commerce products in terms of product quality, product price, product description, merchant service and logistics service. Based on the above discussion, this study proposes the following hypotheses:

H1: Poor product quality (PRQ) has a significant positive effect on negative evaluation motivation (NEM).

H2: Poor product price (PRP) has a significant positive effect on negative evaluation motivation (NEM).

H3: Poor product description (PRD) has a significant positive effect on negative evaluation motivation (NEM).

H4: Poor logistics service (LOS) has a significant positive effect on negative evaluation motivation (NEM).

H5: Poor merchant service (MES) has a significant positive effect on negative evaluation motivation (NEM).

3. SURVEY DESIGN

The objective of this survey was college students between 18 and 25 years old, mainly undergraduate, and graduate students. The study was conducted by online questionnaire, 130 questionnaires were distributed, 121 valid questionnaires were collected, and the effective collection rate was 93%. The questionnaire was analyzed

for the basic characteristics of the sample, including gender, grade, frequency of online shopping, online shopping platform.

The questionnaire used a 5-point Likert scale with scores ranging from 1 to 5. The higher the score, the higher the agreement with the option. This paper uses SPSS software to test the reliability and validity of the survey data. The results of data testing were analyzed by correlation and regression analysis, and finally the significance analysis of variable coefficients was conducted by modeling. The main subjects of the study are college students who often purchase goods on e-commerce platforms and who give bad reviews after unsatisfactory experiences.

4. DATA ANALYSIS

4.1. Analysis of demographic characteristics

According to Table 1, in terms of gender, female students prefer to shop online more than male students, which is in line with the general basic principle. In terms of grade, junior college students have the most active proportion of online shopping, since most junior college students in general adapt to the school environment and have relatively fewer courses, so they are highly motivated to shop online. From the viewpoint of online shopping frequency, 51.2% of college students are eager to shop online, and 35.5% of college students often shop online, which can be seen that college students rely heavily on online shopping. In terms of e-commerce platforms, Taobao, Tmall and Jingdong platforms are more popular among college students, and those platforms have more complete evaluation systems available for investigation.

Table1. Sample analysis(N=121)

Variables	Classification	Amount	Percentage
Sex	Male	51	42.10%
	Female	70	57.90%
Year	Freshman	15	12.40%
	Sophomore	14	11.60%
	Junior	51	42.10%
	Senior	28	23.10%
	postgraduate	13	10.70%
Frequency	Seldom	16	13.20%
	Often	43	35.50%
	Usually	62	51.20%
Platform	Taobao	45	37.20%
	Tmall	26	21.50%
	JD	31	25.60%
	Pinduoduo	8	6.60%
	Other	11	9.10%

4.2. Testing of validity and reliability

4.2.1. Reliability:

Reliability tests were conducted for the X1 product quality, X2 product price, X3 product description, X4 logistics service, and X5 merchant service scales, respectively. K is the number of test questions. Si2 denotes the variance of the scores from all participants on question i, and Sx2 is the variance of the total scores obtained by all participants. The results of the statistical analysis from the formula in the table below show that the Cronbach α values reached coefficients in the range of 0.7-0.8, indicating good internal consistency and reliability.

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum s_i^2}{s_x^2}\right) \quad (1)$$

Table2. Reliability Statistics

Variables	Cronbach α
X1 PRQ	0.777
X2 PRP	0.811
X3 PRD	0.769
X4 LOS	0.843
X5 MES	0.702

4.2.2. Validity:

KMO and Bartlett's validity tests were used to test the construct validity effectively and accurately. The SPSS software was used to test the validity of x1 product quality, x2 product price, x3 product description, x4 logistics service, and x5 merchant service factor scales respectively. The results in Table 3 show that the KMO is greater than 0.6, and the Bartlett's test value of each variable shows that the Sig. is 0.000, which is less than 0.001. This indicates that the sample correlation of each scale is well correlated and significant, which is suitable for factor analysis.

Table3. Validity Statistics

Variables		PRQ	PRP	PRD	LOS	MES
KMO		0.673	0.62	0.608	0.699	0.637
Bartlett sphericity test	Chi-square	112.114	202.478	132.816	211.453	71.35
	DOF	3	3	3	3	3
	Sig.	0	0	0	0	0

4.2.3. Correlation Analysis

After the above analysis of the reliability of the validating factors, it is necessary to understand the degree of correlation between the variables. The correlation analysis formulas and results of the factors leading to negative evaluations are shown in Table 4 below. The

motivation of college students to give bad reviews due to product quality, product price, product description, logistics service and merchant service is positively correlated with the number of negative reviews in online shopping (the correlation coefficient is positive and p<0.01). The correlation coefficients were 0.389, 0.479, 0.494, 0.415, and 0.224, respectively, and further modeling analysis is needed to investigate the influence of each variable.

$$r(x,y) = \frac{Cov(x,y)}{\sqrt{Var[x]\,Var[y]}} \qquad (2)$$

Table 4. Correlation coefficient matrix between the variables

	NEM	PRQ	PRP	PRD	LOS	MES
NEM	1					
PRQ	.389**	1				
PRP	.479**	.073	1			
PRD	.494**	.120	.031	1		
LOS	.415*	-.013	.152	.072	1	
MES	.224**	-.018	.055	.154	-.044	1

4.2.4. Regression analysis

Based on the hypothesis proposed above, we established a multiple regression model of the factors influencing negative evaluation motivation, with product quality (X1 - PRQ), product price (X2 - PRP), product description (X3 - PRD), logistics service (X4 - LOS), and merchant service (X5 - MES) as independent variables and negative evaluation motivation (Y - NEM) as dependent variables:

$$Y = b_0 + b_1 * X_1 + b_2 * X_2 + b_3 * X_3 + b_4 * X_4 + b_5 * X_5 + \varepsilon \qquad (3)$$

where b_0, b_1, b_2, b_3, b_4 and b_5 are the constants (regression coefficients) and ε is the residual. The results of the regression analysis are given below:

Table 5 results of the regression analysis

Coefficient alpha					
Model	Unstandardized		Normalization	t	Sig.
	B	Std. Error	Beta		
Y NEM	-.119	.308	—	-.387	.699
X1 PRQ	.282	.053	.297	5.439	.000
X2 PRP	.224	.037	.399	7.461	.000
X3 PRD	.241	.043	.343	6.100	.002
X4 LOS	.188	.030	.336	6.189	.006
X5 MES	.136	.082	.213	2.836	.011
R²	0.673				
F-value	28.433***				

From the R2 equal to 0.673 and the F-value of 28.433 (p<0.01), it is evident from the good model fit. The final regression equation is:

NEM = -0.119 + 0.282*PRQ + 0.224*PRP + 0.241*PRD + 0.188*LOS + 0.136*MES (4)

The influencing factors of negative reviews of products were studied by multiple regression analysis to verify whether each hypothesis was valid. According to the model, as the degree of influence of each influencing factor becomes stronger, college students' negative evaluation motivation increases. It indicates that the higher the sensitivity of college students to unfavorable experiences, then the higher the chance of outputting negative review information. The results of the moderating effect analysis showed that product quality had the strongest moderating size, indicating that quality had the greatest effect on college students' negative evaluation motivation, with a p-value less than 0.05, which reached the significance level, so hypothesis H1 was valid. The other variables, product price, product description, logistics service and merchant service, all reach significant levels(P<0.05). Therefore, hypotheses H2, H3, H4 and H5 are valid.

5. CONCLUSION

Based on multiple linear regression analysis, this paper investigated the factors influencing college students' motivation for negative reviews of e-commerce products. The results of the investigation showed that the higher the level of trust, the higher the possibility of bad reviews among college students. The problems of product quality most influenced college students' intention to give negative reviews. Product price, product description and logistic service have significant effects on college students' motivation to give negative reviews. Finally, merchant service has a positive influence, but the degree of influence is weak. This research result can help E-commerce merchants respond to and improve the situation of negative reviews. It also improves customer satisfaction and trust and increase customer stickiness.

The limitation of this study is that it did not go in-depth into the impact of influencing factors such as the product itself and the company's word-of-mouth on consumer experience. Therefore, the main research direction for the next phase is to add different influencing factors to the model in greater dimensions and to extend the investigation using more scientific and empirical methods. In addition, in the selection of variables, the objective group of this paper is college students with more prominent characteristics, but there are other characteristics of e-commerce platform audiences that are not explored in this paper.

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