Research on the Influence of Online Reviews on College Students' Consumption Decisions

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ABSTRACT

With the development of technology and the popularization of the Internet, online reviews, as a new form to display merchants' reputation in the Internet era, are gradually being valued by consumers and become an important way for consumers to obtain information about goods or services, creating new characteristics of word-of-mouth distribution. This article selects the catering industry in one of China's largest urban life consumption guide applications "Dianping" as the research object to conduct related research on online reviews. Based on the review of relevant literature and by constructing the model--online reviews influence consumers' decision-making, this paper proposes three hypotheses on how online reviews influence consumers' decision-making, through the use of questionnaires to collect data for empirical research, explores the impact of online reviews on college students' consuming behavior from three different dimensions: the overall situation of reviews, the quality of reviews, and the timeliness of reviews, and combined with behavioral economics to discuss how to avoid some psychological traps that affect decision-making. The research results show that the overall situation of reviews and the quality of reviews have a positive impact on consumers' decision-making behavior and will promote consumers to complete consuming behavior. In this study, the timeliness of online reviews has no significant impact on college students' decision-making.

Keywords: Online reviews, Consumption behavior, Behavioral Economics, Psychological trap

1. INTRODUCTION

Word of mouth was first defined as an informal group influence, which is a non-commercial verbal communication between two or more people about a certain brand, product or service experience, and in this article is derived from two types of interpretations, verbal praise or comments. With the popularity of the Internet, computer networks are profoundly affecting consumers' decision-making behavior. Gelb and Johnson proposed information communication and exchange through the internet is an emerging form of word-of-mouth communication, namely "online word-of-mouth", which turns traditional interpersonal into online communication [1]. Consumers begin to post comments on the experience of products or services online. Compared with basic information such as restaurant address, business hours, consumers are more willing to learn about the real dining experience and make consumption decisions through online reviews of other consumers. Therefore, third-party review sites have emerged. In 2003, the Dianping appeared in the world's first third-party review website. In 2020 Dianping announced that

nearly 30 million reviewers active in Dianping, contributing more than 100 million content[2]. As a popular website, it provides the foundation for this study. Besides, college students often online and have knowledge foundation, become this research object. Researchers revealed that people use unconscious routines to cope with the complexity inherent in most decisions. These routines, known as heuristics, serve people well in most situations, but it is not foolproof. Some heuristic unrational biases affect people's thinking invisibly, because they are hardwired into thinking process, people fail to recognize them, even as people fall right into them[3]. This article studies the impact of online comments on college students' consumption decision-making, and uses the psychological traps in behavioral economics to explain the consumer decision behavior and the reasons behind their decision-making preferences, then finally put forward suggestions for consumers to avoid psychological traps.

2. LITERATURE REVIEW

This chapter mainly discusses the relevant literature

research on online reviewers on consumer decision-making. First is about online review research; secondly, the relevant theory of consumer decision-making processes; Finally, the online reviews impact on consumer decision.

Firstly, online reviews is a form of feedback posted online by consumer. Mozan and Luo Min proposed online reviewers are in the form of consumers through text or ratings, express their emotions, views, and attitudes of a product or brand on the network platform according to your past experience. It is believed that online reviewers have 12 dimensions, such as the quality, length and timeliness etc.[4]. Secondly, consumes' decisions mean three stages, consumption desires, deepening and completing consumption behavior. Kotler and Kelle propose to divide the consumer's decision process into five stages, recognize demand, search information, evaluation, make decisions and post-purchase behavior[5]. Ke qing proposed a g framework for consumers' consumption behavior. Consumers typically have been first stimulus to produce purchase desires, and then after the processing of consumption desires, finally returning to reality to implement purchase behavior[6]. In the demand recognition and information search phase, consumers' decision-making will be affected by online reviews, while consumers will be trapped in psychological traps, and some traps will distort consumer's rational ability and catering their prejudice. Such as anchoring effect, status-quo trap and confirmation bias. Finally, consumers often don't only evaluate a dimension to make consumption decisions in reality, they tend to evaluate and compare the expected consumption objects, and have a balance in the contradictory reviews. As an example, a low rating of the merchant will give consumers a bad first impression, but the high quality reviews can reduce the negative impression of consumers to a certain extent, attract consumers to go, and improve rating. Zhao Dong proposed online review is online communication on the product through network information technology through digital multimedia information spread by text, pictures, sound, music, video, flash[7]. Nan Hu believes

that if there're many reviewers, the more information on the product, the consumers can increase the quality of product quality from multiple angles, significantly reduce uncertainty[8]. Online reviews is an important channel for consumers' feedback, essentially it is an additional information for merchants selling products or services. The quality of information determines the extent to which consumer demand is satisfied. Jin Li Yin proposed that the quality of comments should be measured from multiple perspectives such as easy to understand, adequacy, credibility, and objectivity. [9]. Nan Hu believes that the update time of online reviews is important, the closer time is, the better the current reviews, and credibility is often higher[8].

This chapter reviews the relevant research on consumer decision-making by online reviews, and sorts out the influence of online reviews, consumer decision-making processes and online reviews impact on consumer decision-making. It is found that the current research on online reviews and decision-making of college student group is still relatively scarce. This chapter refers to many documents to provide the background for the research, and selects the overall situation of reviews, the quality of reviews, and the timeliness of reviews as independent variables to study the relationship between them and the purchasing decisions of college students.

3. THEORETICAL MODEL AND HYPOTHESIS

3.1 Theoretical model

This research takes online word-of-mouth theory and consumer behavior theory in marketing as the theoretical basis for setting independent variables and dependent variable. At the same time, this article adopts the concepts and dimensions used in the previous literature to ensure the content validity of this study, and constructs the theoretical research model of this article, the definitions of each variable are shown in shown in Table 1.

Table 1 Variables and definition

Variable	Dimension	Factor	Definition
Independent variable	Overall situation of reviews	Star rating	The average of the sum of the reviews' ratings
		Number of reviews	Total number of reviews for each merchant
	Quality of reviews	Depth	Number of words in the reviews
		Breadth	Whether the info. of review is comprehensive (such as: environment, food quality, service attitude, etc.)
		Diversity	Whether the reviews include pictures or videos

		Clarity	Whether the review is stated clearly
		Relevance	Whether the review is stated clearly
		Similarity	Whether the text is similar or repeated among reviews
		Emotional	Whether the review has a strong emotional preference
	Timeliness of reviews	Update frequency	Whether the review is updated frequently
		Update time	Whether the update time is close to the present
Dependent variable	The impact of online reviews on consumers' purchasing decisions	Decision-making	Whether the consumer finally decides to buy and complete the consumption

The theoretical research model of this article consists of two parts. The independent variable is Dianping's online reviews, which is composed of three dimensions and eleven factors: the overall situation of the reviews(star rating and number of reviews), the quality of the reviews(depth, breadth, diversity etc.), and the timeliness of the reviews(update frequency and update time). The dependent variable is consumption behavior, that is, the impact of online reviews on consumer' purchasing decision-making.

3.2 Hypothesis

The overall situation of online reviews most intuitively reflects consumers' first feelings about businesses. Before reading online reviews in detail, the overall situation can most directly show the popularity of businesses. Therefore, H1: The overall situation of online reviews has a significant impact on college students' consumption decisions.

The quality of a review refers to whether a review can provide consumers with sufficient, useful and reliable information. A review that can provide sufficient, useful and reliable information is a high-quality review. We will measure the quality of reviews through seven factors including the depth, breadth, and diversity etc.. As the main form of online reviews, the content of reviews is deserved to be paid attention to, this makes the dimension of review quality particularly important. Generally speaking, the higher the quality of a review, the more consumers are willing to pay attention to and trust its content. Therefore, H2: The quality of online reviews has a significant impact on college students' consumption decisions.

The timeliness of reviews refers to whether the review information is updated and published in a timely manner, which mainly reflects the latest information or service status of the business. The timeliness of reviews is largely related to the time difference between the time when consumers receive the information and the time when the reviews are published. Hu et al. (2008) proposed that the timeliness of online reviews has a certain impact on consumer decision-making behavior, that is, the larger the time difference, the lower the timeliness of the reviews and the weaker impact on consumers. Therefore, H3: The timeliness of online comments has a significant impact on college students' consumption decisions.

4. DATA SOURCE AND MODEL SELECTION

4.1 Data source

This article collects data in the form of questionnaires. Based on the literature of previous studies, after repeated consideration and multiple revisions, the questionnaire is designed and send to college students who use Dianping to conduct a survey.

The questionnaire of this study includes two parts: the description of the questionnaire and the main body of the questionnaire. The questionnaire description part introduces the purpose of this research questionnaire is to study the online reviews impact on college students' decision- making, taking the catering industry on Dianping platform as an example. The main body of the questionnaire includes two parts, the first is the basic information of the respondents, such as demographic information and surveys on the habits of using Dianping

platform; and the second part is the core part of the questionnaire about online reviews how to influent their decisions. The core question part uses the Likert 5-level scale, which consists of a set of statements, each of which has "strongly disagree", "relatively disagree", "general", "relatively agree", and "agree". "strongly agree" five answers, assign 1, 2, 3, 4, and 5 in turn. The survey respondents answered a total of 12 measurement items on the three dimensions of review overall situation, review quality, and review timeliness and the impact of online reviews on consumer purchasing decisions based on their own experience. In order to improve the reliability and validity of the questionnaire, this study conducted a small-scale interview after conducting the questionnaire survey to obtain the more reliable questionnaires. The interview results show that the interviewees have chosen the same answer or answers with smaller differences in multiple questionnaires and interviews. Therefore, under the condition of excluding systematic errors, the reliability of the survey results is high. And finally received 177 valid questionnaires. Cronbach's α value is 0.92, indicates that the questionnaire has high reliability.

4.2 Model selection

This article chooses a multiple regression model to analyze the data. Regression analysis is a statistical analysis method to further detect the degree of interdependence between variables. Multiple regression analysis means that one variable is regarded as the dependent variable and the other one or more variables are regarded as independent variables among the related variables, and the quantitative relationship between linear or non-linear mathematical models among multiple variables is established, and use the sample for analysis.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \mathcal{E}$$

5. ANALYSIS

5.1 Frequency analysis

In order to make the sample authentic and distinguishable, the questionnaire sets up demographic variables, adopts an anonymous questionnaire method to conduct the survey, conducts frequency analysis of basic information, and obtains the number and percentage of sample cases. A high proportion indicates a high tendency of the population. From Table 2, it can be concluded that 37.3% of college students use Dianping at least once a week, and 34.5% of college students use Dianping at least once a month.

Table 2 Frequency distribution table

Variable	Type	Quantity	Percentage
Gender	Male	41	23.2
	Female	131	74
	Unconfirmed	5	2.8
Grade	Prerequisite	3	1.7
	Freshman	11	6.2
	Sophomore	11	6.2
	Junior	19	10.7
	Senior	133	75.1
Usage frequency	Everyday	13	7.3
	At least once a week	66	37.3
	At least once a month	61	34.5
	At least once every three month	14	7.9
	At least once every six months	9	5.1
	At least once more than half a year	14	7.9

5.2 Difference analysis

In terms of gender, the significance of the quality of reviews in this study is 0.039 less than 0.05, indicating that there are significant differences in different populations. Among them, women have higher scores, indicating that female pay more attention to the quality of reviews. The significance of the overall situation is 0.388, the timeliness is 0.747, and the consumption behavior is 0.102, they are both greater than 0.05, indicating that there is no significant difference between people of different genders.

In terms of grade, the significance of timeliness is 0.032 and the consumption behavior is 0.037, both of them less than 0.05, indicating that there are significant differences among different grades of people. Among them, juniors and seniors have higher scores, indicating that more attention is paid to the timeliness of reviews. Besides, the significance of other variables is greater than

0.05, indicating that there is no significant difference between people of different grades.

In terms of frequency, the significance of all the variables are greater than 0.05, indicating that there is no significant difference in the population of different frequency of use.

5.3 Correlation analysis

In Table 3, when the significance is less than 0.05, the two variables are considered to be significantly correlated (the upper right corner of the result indicates that there is a relationship; otherwise, there is no relationship). When the significance is greater than 0.05, it is considered that there is no significant relationship; when the correlation coefficient is greater than 0, it means that it is a positive correlation, and vice versa is a negative correlation. The significance of consumer consumption behavior, overall situation, quality, and timeliness are all less than 0.05. Through the significance test, the correlation coefficient is greater than 0, indicating a significant positive correlation.

Table 3 Correlation coefficient table

		Decision making	Overall	Quality	Timeliness
Decision making	Pearson's correlation	1	0.766**	0.803**	0.668**
	Significance (two tailed)		0.000	0.000	0.000
	n	177	177	177	177
Overall	Pearson's correlation	0.766**	1	0.499**	0.488**
	Significance (two tailed)	0.000		0.000	0.000
	n	177	177	177	177
Quality	Pearson's correlation	0.803**	0.499**	1	0.727**
	Significance(two tailed)	0.000	0.000		0.000
	n	177	177	177	177
Timeliness	Pearson's correlation	0.668**	0.488**	0.727**	1
	Significance(two tailed)	0.000	0.000	0.000	
	n	177	177	177	177
**. Correlation is significant at the 0.01 level (two tailed).

5.4 Regression analysis

Firstly, through the fit test Table 4, the adjusted R-square in the final model is 0.821, indicating that the part that the dependent variable can be explained by the regression equation is 82.1%, and in Table 5 the significance of the F test is less than 0.05, reaching the significance level, indicating the regression model is valid. Secondly, Table 6 the VIF of the overall situation(1.393), quality(2.248), and timeliness(2.216) are less than 5. We believe that the collinearity in this study will not affect the model.

The significance of the overall situation of reviews (p = 0), quality (p = 0) are less than 0.05, and the regression coefficient is greater than 0, indicating a significant positive impact on consumption behavior. The significance of the timeliness (p = 0.282) is greater than 0.05, indicating that there is no significant impact on consumption behavior.

Table 4 Model summary table

Model summary				
Model	R	R-square	Adjusted R-square	Std. Error of the Estimation
1	0.908a	0.824	0.821	0.27033
a. Predictors: (Constant), Review timeliness, Review overview, Review quality				
b. Dependent variable: Decision making				

Table 5 ANOVA Table

Model		Sum Sq	Df	Mean Sq	F-Value	P-Value
	Regression	59.267	3	19.756	270.329	0.000b
1	Residuals	12.643	173	0.073		
	Total	71.910	176			
a. Dependent variable: consumption decision b. Predictor variable: (constant), review timeliness, review overall situation, review quality						

Table 6 Multiple Linear Regression

Model		UnStd. Coefficients		Std. Coefficients	t	Significance	Collinearity Statistics	
		B	Std.	Beta			Tol	VIF
	(Constant)	0.039	0.144		0.273	0.785		
	Overall	0.405	0.032	0.477	12.688	0.000	0.718	1.393
1	Quality	0.535	0.048	0.528	11.053	0.000	0.445	2.248
	Timeliness	0.046	0.043	0.051	1.079	0.282	0.451	2.216
a. Dependent variable: Decision making								

5.5 *Results*

The overall situation of reviews—the star rating and the number of reviews have a significant positive impact on the consumption behavior of college students (Beta = 0.477, p = 0 <0.05), indicating that the higher star rating and the number of reviews, the greater the impact of reviews on college students' consumption behavior.

The quality of reviews—the depth, breadth, diversity, clarity, relevance, and similarity etc. have a significant

positive effect on the consumption behavior(Beta = 0.528, p = 0 <0.05), indicating that the higher the quality of reviews, the greater the impact of reviews on college students' consumption behavior.

The timeliness of reviews—update frequency and update time have no significant impact on the consumption behavior of college students (Beta = 0.051, p = 0 <0.05).

6. DISCUSSION

Psychological traps are all around of us, while no one can rid his or her mind of these ingrained flaws, anyone can learn to understand the traps and compensate for them. For consumers, they should treat online reviews rationally and improve the decision-making process from the following aspects. Be wary of anchors in decision-making[10]. Always view a problem from different perspectives. Try using alternative starting points and approaches rather than sticking with the first line of thought that occurs to you. For example, in this study, consumers are advised not to make decisions through a single-dimensional evaluation when browsing online reviews. Be open-minded. Seek information and opinions from a variety of channels to widen your frame of reference and to push your mind in fresh directions. Get rid of the attraction of the status quo, even if the status quo may be the best option[11]. Remember that the desirability of the status quo will change over time. When comparing alternatives, always evaluate them in terms of the future as well as the present. If you have several alternatives that are superior to the status quo, don't default to the status quo just because you're having a hard time picking the best alternative. Force yourself to choose. Avoid confirmation trap[12]. Always check to see whether you are examining all the evidence with equal rigor. Avoid the tendency to accept confirming evidence without question. Be honest with yourself about your motives.

7. CONCLUSION

This research is a synthesis of existing research and practice on specific consumers, finally gets the conclusion: the overall situation and the quality of reviews have a positive impact on the consumption behavior, which means consumers prefer to believe the merchant that has higher star rating, more number of reviews, reviews with more number of words, useful information like pictures and videos. Also, clearly stated and highly related reviews tend to motivate consumers to complete consumption behavior, compared to male, female pay more attention to the quality of reviews. The result shows the timeliness of reviews has no impact on the consumption behavior, maybe it is the reason for the small sample size or the study object. There are few independent variables selected in this study, the content

is relatively limited, the sample size is small, and the objects are specific, indicating that the research is not universal. In future research, the model will be applied to different groups to study the decision-making factors affecting different groups, further deepen the theoretical model, and analyze the weight of each factor in consumer decision-making, making the model more scientific and rigorous.

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