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Research on the Relationship between Online Reviews and Customer Purchase Intention: The Moderating Role of Personality Trait

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Abstract: As an important factor that affects customer purchase intention, online review has attracted the attention from both enterprises and researchers. According to persuasion theory, planned behavior theory and regulatory focus theory, combined with the three dimensions of online reviews, we construct a modified model of the influence of online reviews on customer purchase intention, and put forward relevant theoretical assumptions. Based on data from 252 samples, this paper studies the relationship between online reviews and customer purchase intention, and further reveals the moderating effect of personality traits.

Keywords: online review, regulatory focus, trust, purchase intention

1. INTRODUCTION

With the rapid development of the Internet and the popularity of e-commerce, more and more Internet users participate in online shopping. By June 2013, the scale of Chinese Internet users reached 591 million, online shoppers reached 271 million, and the adoption rate of online shopping increased to 45.9% [1]. CNNIC data shows that 90 percent of online shoppers would comment after shopping, and 80 percent of them tend to refer to product reviews before purchase [2]. Thus online reviews have become an important factor to identify product quality for online shoppers, also have triggered extensive attention of scholars. Chatterjee (2001) believed that online reviews have become an important way of word of mouth, customers will share their satisfaction or complaints with others, especially the negative reviews [3]. Zhu and Zhang (2010) confirmed that the number and the score of reviews can influence customer purchase intention significantly by empirical methods [4]. Cheung et al (2012) conducted a systematic review of eWOM research and built an integrative framework. It indicated the way WOM functions and explained the impact of eWOM communication on consumer behavior [5]. Lee and Shin (2014) examined the reciprocal effects of review quality, product type and reviewers' photo on consumers' purchase intention and concluded that high-quality reviews would lead to a stronger intention of consumers to buy experimental products, strengthening reviewers' desire to review and the reviews on websites with reviewers' photos [6]. Online reviews can weaken the information asymmetry in network environment and enhance customer trust in online shopping process, and trust will affect the final purchase intention. Rose et al (1999) pointed out that loss of trust would hinder consumers' purchase and even browsing behavior [7], and McKnight et al (2002) believed that trust can produce shopping intentions on the network platform [8]. Smith (2005) further validated the mediation of trust between sources of information and customers' purchase decision [9]. Utz et al (2012) verified online reviews have a significant impact on the perception of trust and customer decision-making by experiment [10].

Through the literature review, we can know that scholars have explored the influencing mechanism of online reviews on customer purchasing behavior considering online reviews' outcome variables, but some fields still have not been explored. Both online reviews and trust have different dimensions, will these dimensions cause different effects if trust plays an intermediary role? Moderator variables, types of product, customer

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involvement degree, etc. were considered in the existing research frames ^[5]. However, customers themselves own different personality trait, and will it have has moderating effect on purchase intentions?

The remainder of this paper is structured as follows: In Section 2 theoretical background is discussed. Section 3 puts forward related hypotheses. Then Section 4 details our adaptive method and the conducted experiments and Section 5 discusses their results. Section 6 concludes the paper and points to future work.

2. THEORETICAL BACKGROUND

2.1 Persuasion theory

Persuasion theory studies persuasive effect by changing the various factors including the communicators, information contents, pathways and receivers, summing up the factors that influence communication effect as source, message and receivers ^[11]. As the information content, online reviews are key elements in the communication process, and their impact on customer purchase intention is the embodiment of persuading function. In the existing research, scholars selected different dimensions or indicators to measure online reviews, including review quantity, reviews polarity, reviews quality, reviews type, reviews discrete degree etc. ^[5]. Considering the importance of factors above, this paper selects polarity, quality and quantity of reviews.

2.2 Planned behavior theory

Planned behavior theory believes that human behavior is the result of deliberate planning, behavioral intention is the most important factor directly influencing behavior, and behavioral intentions in turn are affected by attitudes, subjective norms, and perceived behavioral control ^[12]. We consider "behavioral intention" in purchasing behavior as purchase intention, which is the outcome variable, affected by attitudes such as perceptions of trust ^[5, 8, 9, 10]. As for trust studied in e-commerce, the most popular opinion sourced from Mayer (1995): the willingness directed from the subject to the object, which means the object can perform important activities according to the expectation of the subject ^[13]. Trust in this paper refers to the potential customers depend on online reviews posted by reviewers (including reviewers, network platform, etc.) which are divided into two common dimensions, namely cognitive trust and emotional trust. Emotional trust is the perception for the degree to which the people to be trusted is secure, kind and comfort ^[14], while cognitive trust is the rational expectations of the ability, honesty and sincerity, reliability for the people to be trusted ^[15].

2.3 Regulatory focus theory

Regulatory focus theory holds that regulatory focus, as a typical personality trait, can be divided into two kinds of motivational regulation system: promotion focus and prevention focus. Individuals in the former will give more emphasis on positive behavior and pay attention to the harvest; while individuals in the latter will give more emphasis on the consequences of negative behavior and pay attention to whether there will be loss ^[16]. In the previous decision areas, a large number of studies have shown that personality traits can influence people's decision preferences. As purchase intention is a part of the decision-making process, this paper argues that regulatory focus, as a kind of classical personality trait, can be used as a moderator variable to explore how it works in the process of online reviews' influence on consumer purchase intention.

3. RELATED HYPOTHESES

3.1 The impact of online reviews on customer trust

Review polarity refers to the emotions tendency of online reviews (positive, neutral or negative, reflecting the general attitude of online product reviews is good or bad). Positive reviews accounts for a large proportion in the overall reviews which influence the customer's attitude towards products, shops and platforms positively ^[5]. Customers can perceive the goodwill and ability of reviewers from positive reviews. Zou et al(2011) found the impact of online reviews difference between positive and negative reviews is greater for low expertise

consumer than high expertise consumer [17]. Positive reviews can provide online shoppers with positive information and belief also can increase customers' safety, comfort and accuracy of rational judgment during shopping. Therefore, we hypothesize as follows.

H1a: The more positive review is, the more significant influence on customer emotional trust.

H1b: The more positive review is, the more significant influence on customer cognitive trust.

Review quality means product reviews are true, reliable, relevant with product and can give customers actual reference value. High-quality online reviews contain more product information, reliable arguments and strong persuasion while low-quality online reviews are less reliable, less persuasive [6]. Customers will prefer to believe their truthness when they read high-quality reviews. Therefore, we hypothesize as follows.

H2a: The higher review quality is, the more significant influence on customer emotional trust.

H2b: The higher review quality is, the more significant influence on customer cognitive trust.

Review quantity refers to the number of reviews browsed online when customers purchase products. It represents the popularity and sales of the products [3]. The more customers to buy, the more credible on product will be. As a result, it's much easier to stimulate customers' conformist mentality. Besides, the information concealed in online reviews can help customers eliminate the risk of shopping. A large number of customers buy a certain product can reduce the sense of potential customers' distrust on product, then build their own shopping confidence. Therefore, we hypothesize as follows.

H3a: The bigger reviews quantity is, the more significant influence on customer emotional trust.

H3b: The bigger reviews quantity is, the more significant influence on customer cognitive trust.

3.3 The impact of customer trust on purchase intention

During online shopping, customers can not directly face the products or sellers, only judging by browsing product description, online reviews or consulting. Thus formation of trust has a direct and positive impact on purchase intention. McKnight (2002) believed that consumers' purchasing behavior in online store was one of various behavioral intentions caused by trust [8]. Both emotional trust and cognitive trust belong to the category of trust. When customers feel that reviewer is sincere, kind-hearted, the feelings of trust is stronger, which in turn increases the tendency to buy; while customers feel that reviewers have the ability to judge the quality of the product, cognitive trust is stronger, which will also increase the propensity to buy. Therefore, we hypothesize as follows.

H4: The more intense of customers emotional trust is, the more significant influence on purchase intention.

H5: The more intense of customers cognitive trust is, the more significant influence on purchase intention.

3.4 Moderating effect of personality trait

Regulatory focus can be divided into chronic and situational regulatory focus. For simplicity, the paper refers only chronic regulatory focus, which is namely the tendency of individual personality in the growth process evolving. Herzstein et al (2007) demonstrated that customers of promoting focus showed a stronger purchasing intention than that of prevention focus when the risk associated with products is significant [18]. Lumsden et al (2013) believed that personality is one of the affecting factors of trust [19]. Zhang et al (2010) examined the persuasiveness of eWOM. Drawing on regulatory focus theory, positive reviews would be more persuasive than negative ones to consumers with promotion consumption goals. Conversely, negative reviews would be more persuasive than positive ones [20]. Because of their different regulatory focus, customers choose positive or negative purchase decision when they read online reviews, which will be affected differently by review polarity, the quality, the quantity, etc. Therefore, we hypothesize as follows.

H6: Different regulatory focus plays a moderating role in the influence of online reviews on customer purchase decision.

Integrating the above analysis, the influencing model of online reviews on customer purchase decision can

be constructed. (as shown in figure 1).

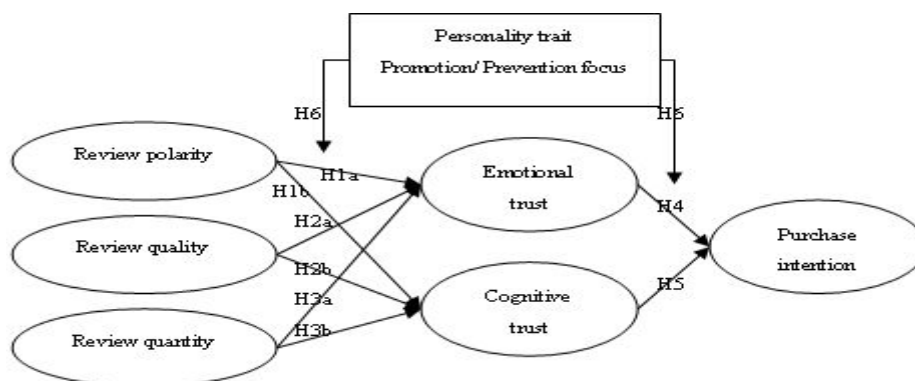


Figure 1. Research model

4 RESEARCH METHOD

4.1 Questionnaire design and data collection

The recent report from CNNIC shows that people aged from 20 to 30 are a major group of online shoppers, thus we choose students at universities and young white-collar workers as respondents. Data are collected through online questionnaire, and calculated by SPSS 17 and AMOS 17.0. A total of 260 questionnaires were sent out and 252 of them is valid. Male accounted for 43.3% , female accounted for 56.7%; aged 19-24 years accounted for 37.3%, 25 to 30 years accounted for 45.6%, over the age of 30 accounted for 17.1%; frequency of shopping online is less than 5 within the past six month accounts for 6%, 5-10 times accounts for 21%, 10-15 times accounted for 45.6%, above 15 times accounts for 27.4%. The sample is in line with the overall situation in terms of the distribution structure more.

The design of questionnaire includes pre-investigation and questionnaire modification. On the basis of literature review, considering the features of online reviews and the theories of trust and regulatory focus, we design the measuring items for each variable. The questionnaire contains two parts of personal information and measuring items. 80 questionnaires were sent out, and 78 valid ones were retrieved with the efficient rate of 97.5% in pre-investigation. The data showed this questionnaire had good reliability and validity, after revision the questionnaire in formal survey, ultimately determining the measuring items: (1)Review polarity index has three items, such as "the overall tendency of reviews are positive"; "the overall tendency of reviews are directed to purchase". (2) Review quality index has three items, such as "reviews are closely related products"; "reviews content is more concise, vivid and easy to understand". (3) Review quantity index has three items, such as "a lot of people are commented"; "a lot of people in favor of product reviews". (4) Emotional trust index has three items, such as "I believe he is a kindness to help others"; "I believe he won't deliberately deceive other people". (5) Cognitive trust index has three items, such as "I believe this reviews information is accurate"; "I believe this reviews information is trustworthy". (6) Promotion / prevention regulatory focus index has twelve items, texting from two directions, such as "compared to most people, if you always succeed in what you pay a lot of effort"; "that not being careful enough often gets me into trouble". (7) Purchase intention index has three items, such as "I am willing to buy goods in this shop"; "the online reviews have a strong effect on my purchase intention".

4.2 Validity and reliability analysis

Table 1 shows the results of reliability and validity analysis. The standardized loadings of measuring items are all bigger than 0.51, with the majority bigger than 0.6, demonstrating that the scale has good validity. The composite reliabilities of five factors are greater than 0.7 in this table, which means that the questionnaire has good reliability.

Table 1. Scale reliability and validity analysis

Observed variable	Review polarity	Review quality	Review quantity	Emotional trust	Cognitive trust	Purchase intention	CR	AVE
Pljx1	0.66							
Pljx2	0.71						0.68	0.42
Pljx3	0.56							
Plzl1		0.73						
Plzl2		0.77					0.78	0.54
Plzl3		0.71						
Plsl1			0.70					
Plsl2			0.88				0.78	0.55
Plsl3			0.62					
Qgxr1				0.75				
Qgxr2				0.74			0.72	0.47
Qgxr3				0.51				
Rzxr1					0.68			
Rzxr2					0.72		0.70	0.44
Rzxr3					0.56			
Gmyx1						0.80		
Gmyx2						0.73	0.78	0.55
Gmyx3						0.68		

5 RESEARCH RESULTS AND DISCUSSION

We test the hypotheses of structural equation model with AMOS17.0 by using maximum likelihood estimation to operate. Table 2 lists the indicators reflecting the goodness of fit of the integrated model, promoting orientation adjustment model and preventing orientation adjustment model. It can be seen from the comparison of recommended values and actual values of the model that the model fits the sample data fairly well.

Table 2. Model fitting index recommended value and actual value

Statistics	χ^2 / df	GFI	IFI	TLI	CFI	RMSEA
Fit standard(critical value)	1<N<3	>0.90	>0.90	>0.90	>0.90	<0.08
Integrated model	1.83	0.89	0.92	0.90	0.92	
Promotion focus model	1.67	0.83	0.87	0.90	0.90	0.08
Prevention focus model	1.50	0.85	0.90	0.87	0.90	0.07

The standardized path coefficients of integrated model and group models are shown in table 3. In the integrated model, reviews' polarity has no significant influence on cognitive trust, meaning the hypothesis H1b is not valid, while the rest are true. Reviews' polarity has significantly positive influence on emotional trust (0.23*). Reviews quality has significantly positive influence on both emotional trust and cognitive trust (0.46* and 0.45***). Number of reviews also has significantly positive influence on emotional trust and cognitive trust (0.22* and 0.32**). That is to say, hypotheses H1a, H2a, H2b, H3a and H3b are all valid. Emotional trust, as well

as cognitive trust, has significantly positive influence on purchase intentions (0.66*** and 0.31**), which means that hypotheses H4 and H5 are both valid.

Table 3. Each model standardization path coefficient

Path relationship	Integrated model standardization path coefficient	Group models	
		Promotion focus	Prevention focus
Review polarity → Emotional trust	0.23*	0.33*	0.14
Review polarity → Cognitive trust	-0.09	0.10	-0.22
Review quality → Emotional trust	0.46***	0.49***	0.43*
Review quality → Cognitive trust	0.45***	0.66***	0.16
Review quantity → Emotional trust	0.22*	0.06	0.27*
Review quantity → Cognitive trust	0.32**	0.18	0.37*
Emotional trust → Purchase intention	0.66***	0.46***	0.84***
Cognitive trust → Purchase intention	0.31**	0.39**	0.32*

*p<0.05 ** p<0.01 *** p<0.001

In group models, different personality traits play a moderating role to some extent in the relationship of online reviews-trust-purchase intentions. It confirms that the hypothesis H6 is partly valid. Specifically, the positive effect of reviews' polarity on emotional trust is significant in personality trait of promoting orientation adjustment (0.33*), but is not significant in personality trait of preventing orientation adjustment (0.14). When consumers belong to the personality trait of promoting orientation adjustment, reviews quality has a more significant effect on emotional trust (0.49***). And reviews quality's positive effect on cognitive trust is significant in the personality trait of promoting orientation adjustment (0.66***), but is not significant in the personality trait of preventing orientation adjustment (0.16). When consumers' personality is preventing orientation adjustment, the positive effects of number of reviews on emotional trust and cognitive trust are significant (0.27* and 0.37*). But when consumers' personality is promoting orientation adjustment, the positive effects of number of reviews on emotional trust and cognitive trust are not significant (0.06 and 0.18). The positive effect of emotional trust on purchase intentions is stronger in the personality trait of preventing orientation adjustment than in the personality trait of promoting orientation adjustment (0.84*** and 0.46***), but the positive effect of cognitive trust on purchase intentions is stronger in the personality trait of promoting orientation adjustment than in the personality trait of preventing orientation adjustment (0.39*** and 0.32***).

6 CONCLUSIONS AND FUTURE RESEARCH

This paper examines the influencing mechanism of online reviews on customers purchase intention through trust. Based on the persuasion theory, online reviews convince customers of trust to purchase. It includes reviews polarity, reviews quality, quantity and other variables. The results show that reviews polarity, quality and quantity have a positive effect on the emotional trust. Emotional trust is formed and continuously enhanced by the expression of goodwill revealed in customer comments. Positive comments from reviewers represent their satisfaction and recognition to the product. Readers can get more product information when product review is positive, the quality is higher, and the quantity is more enormous, their internal comfort and the sense of security are stronger, as a result, emotional trust is more significant. And quality and quantity of online review have a positive effect on cognitive trust. It is the result of customers' rational thinking and judging a series of information about reviews, reviewers and online platform. Quality and quantity of online review can help customers know more information about product, logistics speed and sellers' service, enhance rational

judgments, reduce fraud and unreliability of online shopping. So the higher the quality is and the more the quantity is, the more significant cognitive trust will be.

This paper verifies the influence of emotional trust and cognitive trust on purchase intentions further, and enhances the research conclusion of trust under the online environment. In the virtual world of asymmetric information, trust can significantly influence customers purchase intention. The trust here is divided into emotional and cognitive trust, both of them can affect purchase intentions significantly, and it is also consistent with the existing research conclusion. Emotional and cognitive trust reflect customer trust of online reviews and publishers, platforms and other comprehensive trust and the higher the degree of trust is, the more assured customers will be when purchasing. It is very necessary for sellers to improve quality and quantity of the online reviews to boost customers' trust of the publishers, online stores and platform when they browse the online reviews.

New ideas are provided to adjust the variable "review readers' feature" by adding "regulatory focus", which broadens the field of online reviews and regulatory focus theory. To promotion focus customers, the quality of review significantly affects their emotional trust and cognitive trust while the polarity of review significantly affects only emotional trust. Promotion focus customers would be more concerned about positive result with the individual mind more open and adventurous, therefore the higher the quality is, the more intense emotional trust and cognitive trust on reviews will be, thus customers tend to perform a positive purchase behavior. Whereas review polarity normally has clear positive or negative description, positive reviews will strengthen the emotional trust of customers to a certain extent. Promotion focus customers will be willing to make the attempts, but the rationally cognitive judgment will not be affected when reviews tend to be positive. To prevention focus customer, review quantity significantly influence emotion trust and cognitive trust, review quality only significantly influence emotional trust. They will focus on the negative results, trying to avoid negative results when it is necessary and emphasize zero loss. Review quantity reflects the product volume of business, and the data represents how many customers have purchased, so customers can make choices according to the product's popularity. In general, both promotion and prevention focuses can adjust the relationship between trust and purchase intention significantly and positively. The customers have different temperament types, but they do not affect the purchase intention judgment. It means that customers of different regulatory focuses make adjustments according to different bases.

The limitation of the paper is that three dimensions of online reviews were chosen and only positive and negative polarities were considered. In fact, more and more reviews contain both positive and negative emotional tendencies, and the influence of text contents on the formation of trust and purchase intention still needs to be further researched. In addition, we only considered the moderating effect of regulatory focus. In fact, there is interaction effect among customer's personality traits, involvement and risk preference, so further empirical evidence is required to seek whether there is a different result considering multi-factors interaction effect.

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