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To cite this article: De Xia *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **233** 052032

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Influence of Online Interaction on Consumers' willingness to the Consumption of Green Products

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Abstract. Under the background of Internet, consumers' purchase intention is influenced by many factors. Exploring online interactions between different subjects and the accompanying information diffusion's effect on consumer purchase intention is one of the most important research topics. Based on the interaction theory, customer perceived value theory and consumer behaviour theory, this paper proposes the model of online interaction's influence on customers' green product purchase intention and corresponding hypothesis. The research shows that there is a significant positive correlation between the two interactive modes (online interaction between enterprises and customers, and ones between old and new customers) and perceived value of customers. Perceived value plays an intermediary role in the relationship between the two interactive modes and green product purchase intention. These findings will enrich the existing research concerning consumer behaviours and promote the efficiency of network operation practice.

1. Introduction

With the rapid development of Internet economy, how different online interactions affect customers' purchase intention is one of the important issues of consumer behavior research under the network environment (Mark, 2005). In the network environment, whether the online interaction between enterprises and customers, old customers, new and old customers will affect customers' perception and evaluation of enterprises and products, and whether these online interaction behaviors have an impact on customers' willingness to buy green products, the current research on these issues need to be further explored. The answers to these scientific marketing questions will promote a deeper understanding of consumer behavior in the network environment and improve the pertinence and effectiveness of marketing practices. According to AISAS model, consumers' purchasing behaviors in the Internet environment involve various links such as attention, interest, search, action and sharing. Based on the AISAS model of consumer behavior as the theoretical basis, and taking the customer perceived value of green products as the intermediary variable, this paper explores the impact of online interaction among different subjects on customers' purchase intention of green products.

2. Literature review and research hypothesis

2.1. Online interaction and customer perception of value

From the perspective of social exchange theory, online interaction can send a signal to consumers, which can lead to different attitudes towards products through the psychological processing and judgment of consumers. Wu H et al. (2007) believed that customers would feel more pleasant and satisfied when their opinions or feedbacks were accepted and adopted by enterprise. Bitner (1992)



proposed that two-way interaction between enterprises and customers would enable customers to achieve spiritual value satisfaction, such as respect and recognition.

Yin (2012) proposed that only when consumers acquire sufficient information resources from enterprises or other participants can we estimate and judge the value created by the enterprise or the value of the product required, and the value obtained from the product is weighed against the cost of buying the product to determine whether it is worth buying. Although there is no direct study on the value of online interaction and customer perception in the field of Internet, the research of relevant scholars supports that interaction will affect the customers' evaluation of product value from the side. Köhler (2011) pointed out that customers would interact with other customers after receiving various kinds of stimulation, which would inevitably affect the perceived value of customers. Yoo et al. (2010) divided the interactive behaviors in the context of online retail into controllable interaction, two-way interaction and synchronous interaction. The research shows that two-way interaction has a significant impact on the emotional value perception in the customer perceived value, and the synchronous interaction has a significant impact on the functional value perception. It can be seen that online interaction has an impact on perceived value. Therefore, this study proposes the following hypothesis:

H1: Online interaction has a significant impact on the value perception of green products.

Based on the research results of Zhao (2015), this study divides the online interaction in the Internet environment into three types: the interaction between enterprises and customers, the interaction between old customers and the interaction between new and old customers. According to Sheth's (1990) theory of perceived value, perceived value is divided into functional value, green value and social value. Then the following hypothesis are put forward:

H1a: Enterprises and customers' interaction has a significant impact on functional value perception.

H1b: Enterprises and customers' interaction has a significant impact on green value perception.

H1c: Enterprises and customers' interaction has a significant impact on social value perception.

H1d: Between old customers' interaction has a significant impact on functional value perception.

H1e: Between old customers' interaction has a significant impact on green value perception.

H1f: Between old customers' interaction has a significant impact on social value perception.

H1g: New and old customers' interaction has a significant impact on function value perception.

H1h: New and old customers' interaction has a significant impact on green value perception.

H1i: New and old customers' interaction has a significant impact on social value perception.

2.2. *Customer perceived value and purchase intention to buy green products*

At present, a large number of domestic and foreign scholars have verified the influence of customer perceived value on customers' behavior of buying green products from multiple perspectives and directions. Sheth (1990) found that consumers make purchasing decisions based on product attributes or value when buying products. Sweeney (2001) divided perceived value into four dimensions: emotional value, social value, quality value and price value. Research shows that perceived value has an important influence on consumers' purchase decisions. Therefore, this study proposes the following hypothesis:

H2: Customer perceived value has a positive effect on customer's purchase intention of green products.

H2a: Functional value has positive effect on purchase intention.

H2b: Green value has positive effect on purchase intention.

H2c: Social value has positive effect on purchase intention.

2.3. *The intermediary role of customer perceived value*

Tombs (2013) and Huang (2009) showed that new customers acquired basic impressions and recognition of products through online observation and understanding of interactive topics related to products and brands participated by old customers. Because the online shopping environment is very different from the traditional stores, consumers in the virtual environment can not directly perceive the quality of products and face-to-face communication with service staff. The products can only be

perceived through the pictures, descriptions and comments on the Internet provided by enterprises, and by the subjective imagination and judgment of individuals. Thus, the information obtained by the buyer and the seller is asymmetrical. In this process, the perceived value of the customer plays a leading role in the purchase intention of the customer. Based on the above discussion, this study proposes the following hypothesis:

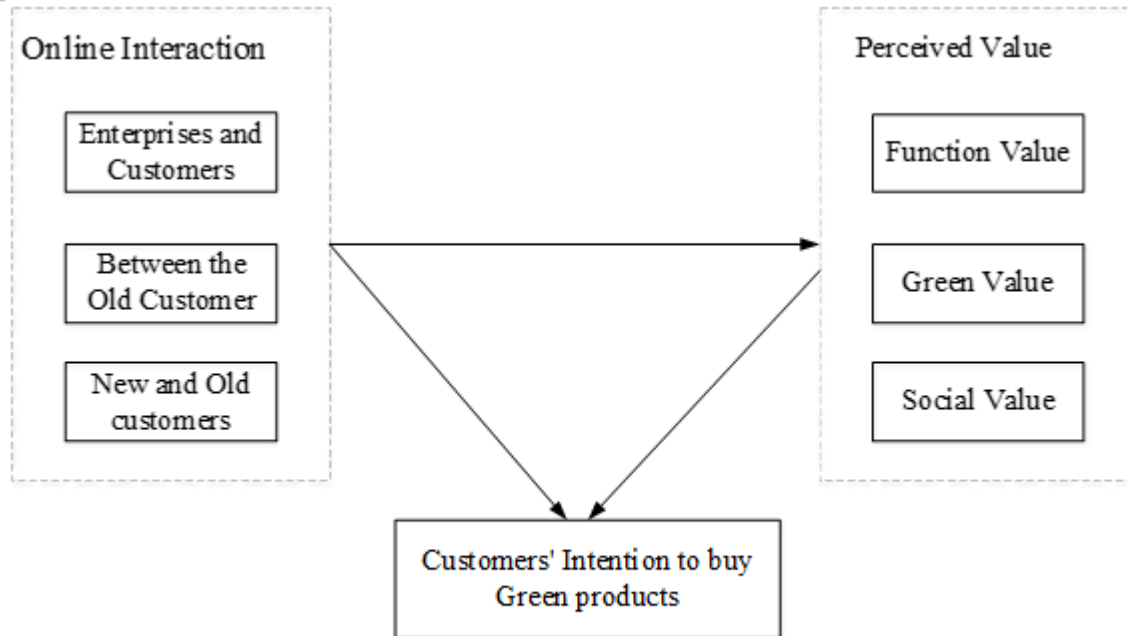


Figure 1. Basic model framework.

H3: Perceived value plays an intermediary role in the effect of online interaction on customers' purchase intention of green products.

H3a: Perceived value plays an intermediary role in the effect of online interaction between enterprises and customers on customers' purchase intention.

H3b: Perceived value plays an intermediary role in the effect of online interaction between old customers on customers' purchase intention.

H3c: Perceived value plays an intermediary role in the effect of online interaction between new and old customers on customers' purchase intention.

Based on the above assumptions, the theoretical model of the impact of online interaction on customers' intention to purchase green products is constructed (Figure 1).

3. Methods

3.1. Samples

In this study, online questionnaires were used to investigate the purchasing of green food on two major e-commerce platforms (Tmall and JD). A total of 400 formal questionnaires were issued online. According to the limitation of the research sample, after screening, we got 342 valid questionnaires. The overall validity rate of the questionnaire was 85.5%. In terms of gender, the proportion of men and women is basically equal. In terms of age, the sample proportion between 21 and 30 years old was 46.9%. In terms of income, the middle-income group accounted for 52.7%. In terms of education level, people with bachelor's degree and master's degree were the most, indicating that people with higher education level were more likely to accept green products.

3.2. Measurement of variables

In order to, we ensure the validity and reliability of the measurement tools, all the used scales in this study are the scales already used in the existing literature at home and abroad, and we modified the scales according to the purpose of the study. In terms of questionnaire design, all variables were measured by Likert v, except for basic data. In the measurement of variables, the online interaction between enterprises and customers was referred to Bauer's (2002) online consulting interview scale and Xu X's (2016) interactive measurement scale of enterprises and customers. The measurement of online interaction between old customers and new customers refers to the research conducted by Chen (2011), Nambisan & Baron (2009) and Preece (2001). Customer perceived value was measured by the existing Maturity Scale, and the scale of customer's purchase intention for green products was mainly based on Smith (2010) et al. The internal consistency reliability coefficient of the scale, Cronbach $\alpha=0.962$. Confirmatory factor analysis was carried out on the scale, and the fitting degree of the measurement model was up to standard.

3.3. Data analysis

3.3.1. Correlation analysis. In this paper, Pearson correlation analysis is used to carry out the basic statistical analysis of empirical research. From Table 1, we can see that the correlation coefficient between the variables is generally within 0.2-0.7, the correlation between the variables is significant.

Table 1. Pearson Correlation Analysis.

Variable	1	2	3	4	5	6	7
1 Interaction between Enterprises and Customers	1						
2 Interaction between old customers	0.554**	1					
3 Interaction between old and new customers	0.401**	0.398**	1				
4 Function value	0.485**	0.420**	0.528**	1			
5 Green value	0.378**	0.303**	0.509**	0.650**	1		
6 Social value	0.358**	0.294**	0.356**	0.496**	0.656**	1	
7 Purchase intention	0.460**	0.530**	0.467**	0.629**	0.688**	0.666**	1
Mean	3.741	3.883	3.489	3.565	3.622	3.483	3.640
SD	0.605	0.750	0.845	0.680	0.818	0.889	0.805

Note: ** Represents significant correlation at the level of 0.01.

3.3.2. Model test. (1) Hypothesis testing. This study constructs a hypothesis model among online interaction, customer perceived value and purchase intention, and uses AMOS 17.0 to fit the model. The modified model has a good fitting effect with $\chi^2=899.138$, $df=409$, $\chi^2/df=2.198$, $GFI=0.917$, $AGFI=0.908$, $NFI=0.920$, $CFI=0.933$, $RMR=0.037<0.05$, $RMSEA=0.073<0.08$. The results of hypothesis testing are shown in Table 2.

(2) Mediation of perceived value. This study first examines the direct effect and then the indirect effect. Generally speaking, if the direct effect is greater than the indirect effect, the intermediary variable does not work. If the direct effect is smaller than the indirect effect, the intermediary variable plays a mediating effect.

Table 2. Results of hypothesis testing.

Hypothesis	Estimate	P	Conclusion	Hypothesis	Estimate	P	Conclusion
H1a	0.191	2.566**	Support	H1g	0.475	6.719***	Support
H1b	0.208	2.571**	Support	H1h	0.473	6.242***	Support
H1c	0.296	3.288***	Support	H1i	0.280	3.668***	Support

H1d	0.118	1.690ns	NS	H2a	0.188	2.688**	Support
H1e	-0.021	-0.268ns	NS	H2b	0.250	3.375***	Support
H1f	0.023	0.278ns	NS	H2c	0.316	5.046***	Support

Note: ** $p < 0.01$; *** $p < 0.001$; NS not significant.

Table 3 shows that the direct effect of online interaction between enterprises and customers on customers' green product purchase intention is - 0.058, and its value was not significant, while the indirect effect of online interaction between enterprises and customers on customers' green product purchase intention is 0.182, which is significant and greater than - 0.058. At the same time, the direct effects of online interaction between enterprises and customers on functional value, green value and social value are significant; indicating that customer perceived value plays an intermediary role in the impact of online interaction between enterprises and customers on customers' green product purchasing intention. Similarly, customer perceived value plays an intermediary role in the influence of online interaction between old and new customers on the purchase intention of green products. Online interaction between old customers has a direct impact on the purchase intention of green products, and customer perceived value has no intermediary role between the two.

Table 3. Direct, Indirect and Total effects.

	Variable	Enterprises and Customers	Old Customers	New and Old customers
Direct Effect	Function Value	0.191	0.118	0.475
	Green Value	0.208	-0.021	0.473
	Social Value	0.296	0.023	0.280
	Purchase Intention	-0.058	0.357	0.042
Indirect Effect	Purchase Intention	0.182	0.024	0.296
Total Effect	Purchase Intention	0.124	0.381	0.338

4. Conclusion

4.1. Discussion

This paper discusses the relationship between online interaction, customer perceived value and customer's willingness to buy green products. The main conclusions are as follows:

(1) Online interactions in different dimensions have different impacts on the perceived value of customers. The new and old customers have the most significant impact on the perceived value, followed by the online interactions between enterprises and customers. The online interaction between enterprises and customers has the most significant impact on the social value perception of green products. The online interaction between new and old customers has the most significant impact on the green value and functional value perception of green products. (2) Different types of customer perceived value have different impacts on the purchase intention of green products, and social value perception has the most significant impact on the purchase intention of green products. (3) Customer perceived value plays an intermediary role in the influence of the online interaction between enterprises and customers, new and old customers on customers' purchase intention of green products.

4.2. Management inspiration

This study further enriches relevant research on the relationship between online interactions, customer perceived value and customer's willingness to buy green products. The study also promotes the development of consumer behavior theory in the network environment, and provides some valuable enlightenment for enterprise management practice.

Firstly, it improves the connotation of customer relationship management in the context of Internet and new media. Enterprises should create favorable conditions for customers to actively interact online and enhance customers' quick knowledge, recognition and trust of green products. Secondly, online

interaction is used to guide new customers' perception and recognition of the value of green products. The enterprise takes the value pursuit as the starting point to find and meet the real needs and potential needs of customers. Finally, enterprise need to pay special attention to the online interaction between new and old customers. That is to say, a customer leader can be formed attract new customers and potential customers' attention and cognition to green products.

Acknowledgement

The work is supported by the National Natural Science Foundation of China (Grant No.71772143).

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