

A Study on the Influence of E-Commerce Platform Interaction Strategies on Users' Purchase Intention -- a Case Study of Barba Farm

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Abstract—By establishing deeper communication with consumers, social e-commerce enhances consumers' desire to buy commodities. Taking "Ba Ba Farm" developed by Taobao platform as an example, this paper conducts an in-depth investigation of users of Ba Ba Farm, including existing industry data, and invites users to conduct questionnaire analysis, and builds a theoretical model based on SOR model (stimulus-body-response model). After the various variables do correlation analysis, multiple regression analysis, mediation effect analysis. The study found that the interaction strategy in e-commerce has a certain effect on consumers' willingness to buy goods; As an intermediate variable, the perceived value of customers plays an important role in this process. According to the research literature referred by the author, combined with the specific situation of Barbara's Farm, the author puts forward the management enlightenment of adjusting strategies and developing diversified interactive strategies in combination with the actual market situation.

Keywords—e-commerce interaction strategy; Purchase intention; SOR stimulus-response theory; Barba Farms Introduction.

1. INTRODUCTION

At present, the e-commerce industry is still developing continuously, especially the connection between social communication and e-commerce is getting closer and closer. For example, Ba Ba Farm launched on Taobao platform is a light gamified e-commerce interactive product. Users can participate in the whole process of fruit trees from seed germination to fruit formation. They only need to obtain fertilizer and plant upgrading, and can exchange fruits for free. Users can experience the whole planting process personally. With the acceleration of the construction of the new generation of information infrastructure and the extensive application of 5G intelligent terminals, we can foresee that the social e-commerce industry in China will have a greater space for development. At the same time, the number of users on Barba's Farm is growing, which means the e-commerce platform needs a better system to promote its existing interactive strategies.

1.1 Research significance

With the continuous promotion of social e-commerce and the surge in the number of users on e-commerce platforms, the interactive products and software programs derived from the interactive

strategies of e-commerce continue to penetrate the market. In the face of the huge user base, from the perspective of e-commerce enterprises, it is necessary to study the influence mechanism of e-commerce interaction strategies on users' purchase intention, so as to bring more perfect interactive products and interactive experience to users. Through the research, on the one hand, we can have a deeper understanding of the effects brought by the current e-commerce interactive strategies, and promote them, which is conducive to driving enterprise sales and solving operational problems; On the other hand, analyzing the influencing factors of the e-commerce interaction strategy to improve the use system of the enterprise's current interactive products or software is conducive to the enterprise's internal discussion of the future development of the e-purchase intention in e-commerce interaction strategy, and conduct data collection and analysis, so as to find the internal correlation between variables.

1.2 Innovation in research

This paper takes Taobao's "Ba Ba Farm" as the research case, and the variables and questionnaire data of the research design are carried out around this topic. Based on the rigorous theoretical discussion of previous scholars, a new case is adopted as the research object. This paper will study the e-commerce interaction strategy from a more refined perspective and a more precise research scope.

This paper conducts academic research from the perspective of e-commerce interaction strategy, from a novel perspective. At present, there is still a theoretical research gap in the field of the influence mechanism of e-commerce interaction strategies on consumers' purchase intention, and the number of references is limited. Starting from the e-commerce interaction strategy, this paper takes Taobao Ba Ba Farm as an example to show that the entertainment interactive products in the e-commerce interaction strategy are of great significance to the e-commerce industry and bring huge development power to the e-commerce industry. It also provides more comprehensive research data and analysis for later scholars in the field of e-commerce interactive marketing strategy.

2. RELATED WORKS

In this paper, the concept of social e-commerce, the concept and classification of interactive strategy, the theory of user perceived value and consumer purchase intention are summarized.

2.1 Social e-commerce

In Jascanu and Nicolau (2007), social e-commerce is defined as: on the basis of Internet technology, e-commerce websites and social platforms can form a platform for merchants and users to exchange information and opinions^[1]. However, in the study of Ickler and Schulke (2009), social e-commerce refers to the establishment of an information exchange network platform based on social media to provide convenience for merchants, users and user groups^[2]. Moreover, they attribute the characteristics of social e-commerce to openness and interactivity.

2.2 Interactive strategy

E-commerce interactive strategy is a kind of interactive marketing strategy, which can greatly narrow the distance between merchants and consumers. On the one hand, it breaks the one-way

output of merchants to consumers in the previous marketing strategy in an interesting way, and on the other hand, it subtly plants brand impression for consumers in the interaction. Previous scholars Rice & Associates (1985) defined interaction as an effective choice of information when users interact with media in the face of a wide variety of information^[3]. In the study of Schegloff (1992), interaction is the flexibility of information conversion in the process of information transmission by users^[4]. From the perspective of interaction of news networks, Masey and Levy (1999) believe that interaction is not only the communication between people, but also the communication between people and content^[5]. Bauer (2002) once defined interaction as an interactive behavior that occurs when users browse websites and generate search actions in network interaction^[6].

2.3 Perceived value

Customer perceived value was analyzed by Zeithaml (1988) using in-depth interview and other methods, and she defined customer perceived value as "the overall evaluation of consumers' efforts or returns on products and services"^[7]. A more specific description is that when the economic factors felt by the customer in the process of purchasing the goods are compared with the cost to be paid when the service is provided, the customer then makes an overall evaluation of the utility of an item or service. In addition, consumers usually have a subjective perception of the goods or services provided by the platform and merchants.

2.4 Consumer purchase intention

Scholar Han Ke (2021) used the theory of innovation diffusion and combined the theoretical models of AIDTAS and SOR in his report on consumers' purchase intention of e-commerce live streaming goods^[8]. Yang Xingjun, Hao Jianbin and Zhou Chengbo (2022) also used SOR model to analyze research reports on factors influencing social media marketing on consumers' purchase intention^[9]. In addition, Fu Ying (2012), through interviews and literature research, confirmed that the five dimensions of corporate popularity, interaction between corporate micro-blogs and users, corporate micro-blog information attraction, user engagement triggered by corporate micro-blogs, and opinions of entrepreneur leaders are factors influencing consumer purchasing behavior^[10].

In this paper, the concept of social e-commerce, the concept and classification of interactive strategies, the theory of user perceived value and the purchase intention of consumers are summarized and summarized. In the study of e-commerce interaction strategy, the author divides it into four dimensions, and then studies the influence mechanism of e-commerce interaction strategy on consumers' purchase intention by taking customer perceived value as an intermediary variable according to the method of previous scholars' literature.

3. RESEARCH HYPOTHESIS

Based on the theoretical model mentioned above, the research hypothesis is proposed according to the factors and dimensions in the theoretical model.

3.1 The hypothesis of the relationship between interaction strategy and consumers' purchase intention

When enterprises carry out e-commerce strategies, they can use humanistic feelings as the theme of content to arouse consumers' inner emotional resonance, which can effectively realize the effective transmission of products.

Pu Yuxin (2022) divided the sentiment marketing strategy into three dimensions: user insight, content quality and emotional connection. It means that enterprises can carry out humanistic sentiment strategies from three dimensions^[11].

Jiang Yaqi (2020) proposed a discussion and research on strategies to trigger consumers' nostalgia for old things in advertisements from the three aspects of product, content and channel, and found that when enterprises cite classic elements or elements, integrate other brand characteristics, and finally use social network platform to communicate, it can improve consumers' purchase demand and arouse emotional resonance^[12].

Lai Yingjie (2022) theoretically discussed the role of personalized e-commerce platforms in consumers' shopping behaviors. Based on the measurement of customer flow experience based on five factors, it is proposed that flow experience plays an intermediary role, and personalized recommendation can promote the purchase intention of customers^[13].

In the study of Li Lu (2017), although personalized recommendation plays a positive role in promoting consumers' purchase intention, among the four personalized recommendation strategies provided by Taobao.com, each strategy achieves different effects. Therefore, more in-depth research should be conducted on each personalized recommendation strategy and corresponding improvement strategies should be proposed. In order to bring better purchasing experience to consumers^[14]. In marketing, consumers' consumption concept, characteristics of demand, information exchange and communication mode, and sellers' personal concept are closely related to each other^[15].

Therefore, we can theoretically analyze that cooperation and competition strategies also have certain influence on consumers' purchase intention. In the cross-border e-commerce platform of social banks, the content produced by users is divided into three dimensions, namely richness, timeliness and interactivity. Research holds that information has certain timeliness, and consumers' purchasing behavior will be affected by whether consumers can quickly accept the latest news^[16]. This paper proposes the following hypothesis:

H1: E-commerce interaction strategy has a positive promoting effect on consumers' purchase intention

H1a: Humanistic strategy has a positive promoting effect on consumers' purchase intention.

H1b: Personalized strategy has a positive promoting effect on consumers' purchase intention.

H1c: Cooperation and competition strategies have a positive promoting effect on consumers' purchase intention.

H1d: Rapid response strategy has a positive promoting effect on consumers' purchase intention.

3.2 The hypothesis of the relationship between interaction strategy and perceived value theory

When buying goods, customers will refer to various indicators, such as the price of the product, the quality of the product or the use value brought by the product. In product sales and promotion, enterprises can grasp the psychology of consumers and construct a series of interactive strategies, which will promote the generation of consumer purchase behavior. Therefore, this paper proposes the following hypothesis:

H2: E-commerce interaction strategy has a positive promoting effect on perceived value

H2a: Humanistic sentiment strategy has a positive promoting effect on perceived value.

H2b: Personalized strategy has a positive promoting effect on perceived value.

H2c: Cooperation and competition strategies positively promote perceived value.

H2d: Rapid response strategy has a positive promoting effect on perceived value.

3.3 The hypothesis of the relationship between perceived value and consumers' purchase intention

Perceived value refers to the value of services provided by merchants or platforms and the use value brought by commodities that consumers can perceive during the purchase process. If consumers can obtain services and benefits that are worth more than money, they will be more favorable to and trusted in the platform, and they will be more inclined to use the platform and merchants when shopping. At the same time, consumers also need to consider the price, quality, logistics, transportation, after-sales service and other aspects of the commodity when buying. Therefore, this paper proposes the following hypothesis:

H3: Perceived value has a positive promoting effect on consumers' purchase intention.

3.4 The mediating role hypothesis of perceived value

Based on the analysis of previous literature and actual situation, this paper proposes that e-commerce interaction strategies have a positive promoting effect on perceived value. Moreover, in previous studies and discussions, many scholars have confirmed that perceived value affects consumers' purchase intention in various fields as an intermediary variable.

Therefore, this paper proposes the following research hypothesis:

H4: Perceived value plays a mediating role between e-commerce interaction strategies and consumers' purchase intention

H4a: Perceived value plays a mediating role between humanistic strategies and consumers' purchase intention

H4b: Perceived value plays a mediating role between personalized strategy and consumers' purchase intention

H4c: Perceived value plays a mediating role between cooperation and competition strategies and consumers' purchase intention

H4d: Perceived value plays a mediating role between rapid response strategy and consumers' purchase intention

4. RESEARCH HYPOTHESIS

4.1 Descriptive statistical analysis

A total of 200 respondents were collected in this survey, including 157 valid questionnaires and 43 invalid questionnaires. A total of 15 questions were set in this study, among which those who had used Barba's farm were regarded as valid questionnaires, while those who had not used Barba's farm were regarded as invalid questionnaires. Descriptive statistical analysis was used to analyze the respondents in this survey. The main variables included gender, age, income and education background. In terms of gender, males account for more than females, so the results of this survey represent the will of male consumer groups to a greater extent. From the perspective of age distribution, the respondents in this survey are mainly distributed at the age of 25-30 and 18-25 years old. In terms of income, the group of 2000 yuan and above accounts for a large proportion; In terms of educational background, most of the respondents are bachelor degree holders, accounting for 59.9%.

4.2 Reliability and validity test

In order to improve the credibility and correctness of the survey results, SPSS20.0 statistical software was used to analyze the reliability of six variables: humanistic sentiment strategy, personalized strategy, cooperation and competition strategy, rapid response strategy, customer perceived value and purchase intention. In data analysis, "Cronbach's α " is an index used to measure the results of reliability test. When the α coefficient is greater than or equal to 0.70, it indicates that the measured data has a high consistency. The overall reliability coefficient of the questionnaire in this paper is shown in Table 1, with Cronbach's α coefficient values all >0.7 . Therefore, the results show that the consistency of each observation index is good.

In this paper, KMO method and Bartlett test are used to verify the validity of the data. If the KMO value exceeds 0.8, it indicates that these observations have good agreement. Through analysis, the KMO value of 15 items in this paper is 0.977, and the P value is less than 0.001. The above results show that the data have good consistency.

4.3 Regression analysis of e-commerce interaction strategy and consumer purchase intention

With humanistic sentiment strategy, personalized strategy, cooperation and competition strategy, rapid response strategy as independent variables, and purchase intention as dependent variable, multiple linear regression method was used to further analyze the causes of independent variables.

The influence of variables. As can be seen from Table 2, R squared is 0.619, $F=61.637$ ($p < 0.05$), indicating that the model has a good fit and can explain the influence of independent variables on dependent variables. The data in the following table show that the p values of the four independent variables are all less than 0.05, and the regression coefficients are all greater than 0, indicating that they can positively affect the purchase intention of the dependent variable. So it explains that hypothesis H1a, H1b, H1c, H1d is true.

TABLE 1 RELIABILITY AND VALIDITY TEST RESULTS TABLE

Reliability and validity test results					
	Cronbach's Alpha	C.R.	N	KMO	P
Humanistic sentiment strategy	.756	.756	3		
Personalized strategy	.732	.732	2		
Cooperative and competitive strategies	.747	.747	2		
Rapid response strategy	.789	.789	3	0.977	***
Customer perceived value	.881	.881	5		
Consumer purchase intention	.856	.856	4		

a.*** means $p < 0.001$, ** means $p < 0.01$, * means $p < 0.05$

TABLE 2 STRATEGY AND CONSUMER PURCHASE INTENTION TABLE

strategy and consumer purchase intention table					
	Nonstandardized coefficient		Standard coefficient		
	B	Standard error	beta	t	Sig.
(constant)	1.343	0.124		10.858	0
Humanistic sentiment strategy	0.142	0.051	0.244	2.812	0.006**
Personalized strategy	0.096	0.046	0.178	2.066	0.041*
Cooperative and competitive strategies	0.104	0.047	0.194	2.204	0.029*
Rapid response strategy	0.146	0.054	0.254	2.7	0.008**
R squared			0.619		
So the adjusted R squared			0.609		
			F=61.637,p=0.000***		

^aDependent variable:purchase intention

^bN=157 *** means $p < 0.001$, ** means $p < 0.01$, * means $p < 0.05$

4.4 Regression analysis of e-commerce interaction strategy and perceived value

With humanistic sentiment strategy, personalized strategy, cooperation and competition strategy and rapid response strategy as independent variables and customer perceived value as dependent variables, the multiple linear regression method is used to further analyze the influence of independent variables on dependent variables. As can be seen from Table 3, R squared is 0.847 and $F=210.486$ ($p < 0.05$), indicating that the model has a good fit and can explain the influence

of independent variables on dependent variables. The data in the following table show that the p values of the four independent variables are all less than 0.05, and the regression coefficients are all greater than 0, indicating that the independent variables can positively affect the customer perceived value of the dependent variables. So it explains that hypothesis H2a, H2b, H2c, H2d is true.

4.5 An analysis of the mediating role of perceived value

By referring to the mediation effect analysis method mentioned by Wen Zhonglin (2004), the bootstrap model is used to further test the mediating effect of customer perceived value on users' purchase intention in the four dimensions of e-commerce interaction strategy. First, set the confidence interval of this test model as 95% and the sample size as 5000. The mediating effect of customer perceived value among four dimensions of e-commerce interaction strategy variables on users' purchase intention was examined respectively. According to the total effect data in Table 4, the Boot confidence interval of user perceived value on user purchase intention of humanistic sentiment strategy is (LLCI=0.1681,ULCI=0.3522). The Boot confidence interval of user perceived value on user purchase intention of personalized policy was (LLCI=0.1590,ULCI=0.2994). The Boot confidence interval of user perceived value on user purchase intention of cooperation and competition strategy was (LLCI=0.1732,ULCI=0.3316). The Boot confidence interval of user perceived value on user purchase intention of quick response policy was (LLCI=0.1404,ULCI=0.3612). Therefore, user perceived value does not contain 0 in the Boot confidence interval of e-commerce interaction strategy against user purchase intention, which can indicate that hypothesis H4, H4a, H4b, H4c and H4d are valid.

TABLE 3 REGRESSION ANALYSIS OF E-COMMERCE INTERACTION STRATEGY AND PERCEIVED VALUE TABLE

Regression analysis of e-commerce interaction strategy and perceived value table					
	Nonstandardized coefficient		Standard coefficient		Sig.
	B	Standard error	beta	t	
(constant)	-0.062	0.14		-0.44	0.66
Humanistic sentiment strategy	0.289	0.057	0.279	5.076	0***
Cooperative and competitive strategies	0.277	0.053	0.291	5.203	0***
Rapid response strategy	0.335	0.061	0.329	5.462	0***
Personalized strategy	0.333	0.166	0.114	2.009	0.046*
R squared			0.847		
So the adjusted R squared			0.843		
F			F=210.486,p=0.000**		

^c. Dependent variable: customer perceived value

^dN=157 *** means p<0.001, ** means p<0.01, * means p<0.05

5. RESULTS

Starting from e-commerce interaction strategy and based on existing literature, this paper constructs a theoretical model of the influence mechanism of four dimensions of e-commerce

interaction strategy on users' perceived value and customers' purchase intention and makes an empirical analysis. The following are the research conclusions and enlightenments of this paper.

5.1 Research conclusion

First, e-commerce interaction strategies have a significant positive impact on consumers' purchase intention. The platform adopts humanistic sentiment strategy, personalized strategy, cooperation and competition strategy and quick response strategy in the process of customer planting, which can stimulate consumers' motivation to plant fruit trees. When consumers can complete the reward task in the platform, the planting of fruits and vegetables will be accelerated. Some consumers choose to buy Barba's recommended products for a quick harvest. When consumers encounter difficulties, the platform can solve them in time and provide feedback. Consumers' trust in Barba Farm will be improved, and consumers' satisfaction will be enhanced, ultimately promoting their intention to buy.

Second, e-commerce interaction strategies have a significant positive impact on customers' perceived value. In the process of users planting trees at Barba's Farm, some interactive strategies adopted by the e-commerce platform will have a positive impact on users, including changes in user experience and brand cognition.

Third, customer perceived value plays an intermediary role between e-commerce interaction strategies and consumers' purchase intention. According to the above and the in-depth research of previous scholars in this field, customer perceived value has a positive impact on consumers' purchase intention. If the platform focuses on improving the perceived value of customers, it can not only bring good consumption experience to customers, but also enhance the viscosity of the users of the interactive platform, thus strengthening the purchase desire of customers.

5.2 Management enlightenment

The author believes that the e-commerce platform should be adjusted according to the situation of the market when formulating the e-commerce interaction strategy. When the market is in a downturn, the platform can properly adjust the reward rules and simplify the rules in the e-commerce interaction, so as to better motivate consumers to participate in the e-commerce interaction of the platform. When the market is in a more active period, it can be appropriate to lower the participation threshold for merchants on the platform, let more merchants participate in the interaction, and provide consumers or users with more shopping choices.

E-commerce platforms can adjust e-commerce interaction strategies through user usage data and user portraits, or set up a questionnaire survey in the interactive platform, open user suggestions and other channels to communicate with users, and finally improve e-commerce interaction strategies after data collection and analysis, which is conducive to enhancing the user stickiness of interactive platforms. Marketing strategies like this one can develop a more comprehensive user base by developing more diversified game play or interaction modes, which can strengthen the competitiveness of the merchants themselves.

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TABLE 4 EACH EFFECT DATA TABLE

	Each effect data table						
	Direct effect		Indirect effect		Totalt effect		Indirect Effect ratio
	LLCI	ULCI	LLCI	ULCI	LLCI	ULCI	
Humanistic sentiment strategy	.0499	.2591	.1681	.3522	.3506	.4803	63%
Personalized strategy	.0576	.2262	.1590	.2994	.3113	.4342	62%
Cooperative and competitive strategies	.0381	.2347	.1732	.3316	.3241	.4453	65%
Rapid response strategy	.0572	.2774	.1404	.3612	.3549	.4796	60%

REFERENCES

- [1] Interactivity [J]. Journal of Computer - Mediated Communication. 2006 (4)
- [2] Bill Merrilees,Marie-Louise.E-trust: the influence of perceived interactivity on e- retailing users[J].Fry.Marketing Intelligence & Planning.2003 (2)
- [3] McAlexander James H.,Schouten John W.,Koenig Harold F.Building Brand Community [J].Journal of Marketing.2002 (1)
- [4] Jillian C Sweeney,Geoffrey N Soutar.Consumer perceived value: The development of a multiple item scale [J].Journal of Retailing.2001 (2)
- [5] Chandon Pierre,Wansink Brian,Laurent Gilles.A Benefit Congruency Framework of Sales Promotion Effectiveness [J]Journal of Marketing . 2000 (4)
- [6] Gordon H.G. McDougall,Terrence Levesque.Customer satisfaction with services: putting perceived value into the equatio [J].Journal of Services Marketing.2000 (5)
- [7] Ashwin ARAVINDAKSHAN,Roland T.RUST,Katherine N. LEMON,Valerie A. ZEITHAML. CUSTOMER EQUITY: MAKING MARKETING STRATEGY FINANCIALLY ACCOUNTABLE[J]. Journal of Systems Science and Systems Engineering,2004,(04):405-422.
- [8] Seongsoo Jang,Philip Jame Kitchen,Jinwon Kim. The effects of gamified customer benefits and characteristics on behavioral engagement and purchase:Evidence from mobile exercise application uses [J].Journal of Business Research,2018
- [9] Yang Xingjun, Hao Jianbin, Zhou Chengbo. Influence Factors of Social Media Marketing on Consumers' Purchase Intention from SOR perspective [J]. Economic Research Guide,2022,(21)
- [10] Fu Ying. Study on the Influence of Enterprise Micro-blog Marketing on Consumers' Purchase Intention [D]. Zhejiang Gongshang University,2013.
- [11] Jiang Yaqi. Advertising Nostalgia in Cross-border Cooperation of Domestic Brands [J]. News Research Guide,20,11(24):206-207.

- [12] Lai Yingjie. Research on Customer Purchase Intention of E-commerce Platform Based on Personalized Recommendation [D]. Guilin University of Technology,2022.
- [13] Li Lu. Research on the Influence of Taobao recommendation Strategy on Consumers' Purchase Intention [D]. Harbin Institute of Technology,2017.
- [14] Zhu Chengli. Marketing Competition and Cooperation in the Network Environment [J]. Research on Financial and Economic Issues,2003,(02):85-88.
- [15] Luo Y T. Study on the influence of User-generated Content on social cross-border e-commerce Platform on consumers' purchase intention [D]. Jiangxi Normal University,2021.
- [16] Wen Zhonglin, Ye Baojuan. Mediation effect analysis: Methodology and model development. Advances in Psychological Science, 2014, 22(5): 731-745.