

A study on the influence of short video information presentation on consumers' willingness to purchase clothing online on e-commerce platforms

Ouyang Ling*

ouyangling@shu.edu.cn

Shanghai University, Shanghai China

Abstract. With the rapid development of online shopping, the effectiveness of short video information presentation of online products has received increasing attention from enterprises and consumers. This study aims to reveal the mechanism of the role of short video information presentation in driving consumers' willingness to purchase clothing online, and to provide suggestions for businesses to record short videos and improve the quality of short video information presentation. This paper reviewed a large amount of literature to propose research hypotheses, and on the basis of constructing a theoretical model using the stimulus-organism-response framework (SOR) model, data were obtained through a questionnaire survey to carry out empirical analysis. It is concluded that all three factors, virtual haptic, pleasure and trust, have significant positive effects on consumers' willingness to purchase clothing online. Accordingly, the following countermeasures are proposed: strictly grasp the quality of short video information presentation and enhance the fun of watching; reasonably use multi-channel short video for product information presentation; focus on multi-angle product presentation of short video information presentation.

Keywords: Information presentation, SOR, E-commerce, Purchase clothing online

1 Introduction

With the rapid development of online shopping and the growing trend of online transactions, the competition among e-commerce platforms is becoming increasingly fierce, and online retailers have to seek faster and more efficient ways to present information while improving the quality of information presentation, and short videos have become one of the most rapidly developing forms of information presentation. Short videos can improve marketing effectiveness through adequate presentation of visual information^[3]. In previous literature, previous authors have studied the mechanisms of all products in short video information presentation on consumers' purchase intention on e-commerce platforms^[2], without specific classification for each industry, and the research is extensive but not specific, without specific opinions for specific industries. However, Viglia (2018) contended that the information presentation of images and videos does not enhance consumer engagement with product presentation, while textual expressions lead to more active consumer engagement^[5]. In real life, different industries have different performance and development, and different industries have different opinions and countermeasures on the presentation of short video information. This paper conducts a specific study for the apparel industry with the intention of providing specific

opinions on the presentation of short video information in the apparel industry, which fills the gap of previous studies and is a supplement and improvement to the field, and gives a more detailed development plan for the presentation of short video information in the apparel and industry. Therefore, the purpose of this study is to reveal the mechanism of action of short video information presentation driving consumers' willingness to purchase apparel online. The development of short video production on e-commerce platforms is promising, and studying consumers' attitudes toward apparel short video information presentation and finding the influencing factors that affect their willingness to purchase online will help e-commerce platforms and merchants improve the quality and efficiency of product information presentation. In this paper, short video viewing users on e-commerce platforms are selected as research objects, data are obtained through questionnaires, and a theoretical model of clothing is constructed using the stimulus-organization-response framework (SOR) model, data statistical analysis and hypothesis testing are performed using SPSS, and model fit testing is performed using AMOS. This paper analyzes the factors affecting the willingness of short video viewers to purchase apparel online and their mechanism of action, and proposes practical suggestions for merchants to shoot short videos for information presentation based on the findings, and makes some additions to the existing theoretical studies.

2 Literature review

2.1 Information presentation

Information presentation has been defined as a special way of communication between merchants and consumers and as a communication tool to help consumers experience products more authentically. For online retailers, product information presentation is used as a basic IT tool to communicate with customers, provide product information and reduce the sense of distance between the product and the consumer. Consumers experience a tactile lack of products in the online shopping process due to the lack of direct access to them. Moreover, Guo Hailing(2019) concluded that consumers experience a tactile lack of products in the online shopping process due to the lack of direct access to them^[2]. So merchants introduce the data situation of the goods and the appearance of the goods, how to use and other related attributes to consumers from two dimensions of the page, text introduction and picture presentation will compensate for the tactile deficit.

2.2 The influence of short video information presentation on consumers' willingness to purchase online

A plethora of studies have shown that short video information presentation has a great impact on consumers' online purchase intention. Choosing an appropriate information presentation method (e.g., short videos) that conveys sufficient product information can help improve sales opportunities and enhance consumers' purchase intention. The widespread use of short videos has led to a surge in the viewing frequency of mobile shopping and mobile videos, which subconsciously changes the behavioral habits and consumption habits of online users and enhances consumers' willingness to purchase online. The usefulness, ease of use, and entertainment of short videos will directly affect user experience and emotional evocation, and the perceived match will positively influence users' willingness to purchase. Experiments that

stimulating consumers' arousal and pleasurable emotions also had a significant positive effect on impulse purchases, which in turn triggered impulsive online purchases. If merchants use short videos to convey the usage, effectiveness and characteristics of the products to buyers through visual impact, based on the perceptual and emotional experience, it will enhance consumers' desire to purchase online.

2.3 SOR model

The effect of the environment on a person is due to the fact that the person's heart is influenced by the environment. Mehrabian (1974) proposed the environmental stimulus-organism-response (SOR) model from an environmental psychology perspective^[6]. After a person is stimulated by visual, olfactory or auditory stimuli, it can influence the person's perception and further influence the subsequent behavioral reflection. The stimulus, as an external factor affecting the consumer's perception, adjusts its relationship with the stimulus through the organism, and eventually the consumer produces a response. Chen Yi-Fen (2016) et al. used website design containing website background color, image quality, and image design as stimulus variables to test the affective response of users' pleasure to study the influence of website design on users' purchase behavior^[8]. S. Aboubaker Ettis (2017) studied the dwell time and purchase intention of customers by using the background color of the online store as stimulus variables and the customer's pleasure and concentration as emotional reflections^[7]. Liu Chao (2019) et al. studied the purchase behavior of social commerce websites based on SOR theory by using perceived persuasiveness and perceived informativeness as stimulus variables, trust in other members on the website and trust in the website itself as intrinsic state variables of users, and social presence as moderating variables to study the final behavioral response of users, i.e., purchase behavior^[4]. By constructing a moderated mediation model, Gong Xiaoxia et al. (2019) explored the influence of sales atmosphere on consumers' intention to consume impulsively in a live environment and the mechanism of the role of mind-stream experience and middle-of-the-road thinking in it^[1].

3 Research hypotheses

3.1 Hypothesis

The presentation of short videos of clothing compared to abstract, static pictures is more conducive to consumers having a better virtual sense of touch. Zhao Hongxia et al. (2014) argued that firstly merchants hire models and photographers to display online merchandise on clothing in order to be able to provide consumers with more visual information^[9].

H1: The usefulness of short video information has a positive effect on the virtual haptic perceived by consumers.

H2: The ease of use of short video information has a positive effect on the virtual haptic perceived by consumers.

H3: The comprehensiveness of short video information has a positive impact on the virtual sense of touch felt by consumers.

Pleasure is a positive emotion that consumers pursue higher on the basis of perceived product information. Therefore, the ease of use of information in the online shopping process can influence consumer pleasure.

H4: Short video information usefulness has a positive effect on consumers' perceived pleasure.

H5: Ease of use of short video information has a positive effect on consumers' perceived pleasure.

H6: The comprehensiveness of short video information has a positive impact on the perceived pleasure of consumers.

Product information display needs to be illustrated and supplemented with video presentation to reduce consumers' suspicion of the product; to enhance the sense of trust.

H7: The usefulness of short video information has a positive effect on consumer trust.

H8: The ease of use of short video information has a positive effect on consumer trust.

H9: The comprehensiveness of short video information has a positive impact on consumer trust.

Online shopping is more convenient and fast compared with traditional brick-and-mortar shopping, but because of the virtual and non-perceptible way of presenting products, consumers cannot touch them in real life, so they can only perceive them with virtual haptics. Shaping tactile experience for consumers can stimulate their purchase behavior. Consumers' virtual haptic is positively correlated with consumers' impulsive purchase intention.

H10: Virtual haptic has a positive effect on consumers' purchase intention.

When consumers are in a pleasurable state, they are more likely to make impulsive purchases. If consumers are artificially kept in a happy state during the shopping process, it has a direct impact on the purchase intention of online consumers.

H11: Pleasure has a positive effect on consumers' willingness to buy.

The more trust consumers have in the merchant and its products during online shopping, the stronger the possibility of purchase. Consumers feel the lack of face-to-face communication in online clothing purchases compared to brick-and-mortar stores, which affects purchase intentions.

H12: Trust has a positive effect on consumers' willingness to purchase.

3.2 Theoretical model

This paper takes consumers who watch short videos of clothing on e-commerce platforms as the research object, and combines SOR theory to propose the factors that influence the display of short video information on e-commerce platforms on consumers' willingness to purchase clothing online. The final hypothetical model in this paper is shown in Figure 1.

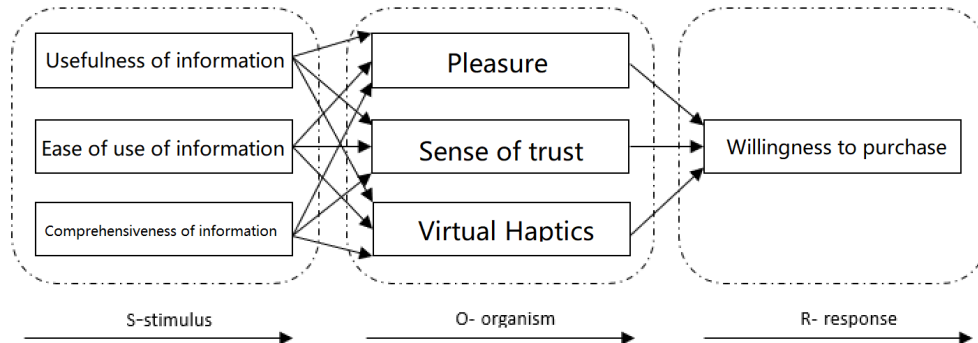


Fig 1: Model structure diagram

4 Research program

4.1 Measurement of variables

4.1.1 Information usefulness

Information usefulness is the extent to which consumers anticipate the usefulness of information. In this study, the information usefulness here is defined as the amount of information available, that is, the information usefulness is the extent to which the information received by consumers in the process of online clothing shopping is available for reference in the actual purchase behavior.

4.1.2 Information ease of use

Information ease of use is the degree to which consumers anticipate the ease of use of information, in this study, the information ease of use is defined as the degree of ease of use of information, that is, the degree to which the information received by consumers in the process of online clothing shopping is easy to refer to and easy to understand in the actual purchase behavior.

4.1.3 Information comprehensiveness

The comprehensiveness of information includes all the information obtained in the process of browsing product information. In this study, the comprehensiveness of information is defined as the variety of information perspectives in the process of information display.

4.1.4 Pleasure

In a market environment where more and more attention is paid to consumer experience, the significant characteristics of product information and website browsing perceived by consumers in the process of online shopping will affect consumers' online shopping behavior, so merchants will take the initiative to help customers improve the sense of pleasure in the shopping process, with the aim of promoting consumer behavior.

4.1.5 Sense of trust

Because of the inevitable virtual nature of online shopping in the e-commerce industry, the inability to have real contact with products has led to a certain degree of consumer trust deficit. A higher level of trust can reduce consumers' perception of risk and stimulate consumers' desire to buy.

4.1.6 Virtual haptic

Consumers are unable to immerse themselves in the process of online shopping to touch the product proper even with the use of modern high-tech technology. Virtual haptic is the use of consumers' accumulated tactile memory information to construct a tactile experience similar to the real one with the help of hearing and vision. The short video product information display in online shopping platform is more three-dimensional and realistic compared with the use of static pictures, and it is easier to use visual and auditory senses to create a virtual haptic experience for consumers.

4.1.7 Virtual haptic

Consumers' willingness to decide to purchase clothing online after watching short videos displayed by e-commerce platform merchants on their web pages is the dependent variable in this study. With reference to the definition and measurement questions of the variables involved in this study by different scholars.

5 Survey design

5.1 Questionnaire structure and sample selection

5.1.1 Questionnaire structure

The questions designed in this questionnaire include the age of online shopping, frequency of online clothing shopping, and commonly used clothing online shopping platforms. All scales in the main body of the questionnaire were scored on a scale of 1-5 using a Likert scale.

5.1.2 Sample selection

The questionnaire was distributed nationwide in the form of online, and the survey was targeted at consumers who had online shopping experience, and mainly analyzed consumers who had watched short videos while shopping for clothes online.

5.1.3 Descriptive statistics

A total of 319 questionnaires were received in this survey. The ratio of men to women in this questionnaire is close to 3:7. This result may be due to the fact that women pay more attention to the information presentation of short clothing videos during online clothing shopping. 72.0% of consumers aged 18-25, 11.4% aged 41-50, and 16.6% of consumers in other age groups. 74.9% of consumers have had the experience of deciding to purchase clothing shown in a video because they watched a short clothing video.

6 Results

6.1 Credibility test

The Cronbach's alpha for the seven variables of information usefulness, information ease of use, information comprehensiveness, pleasure, trust, virtual haptics, and purchase intention measurement scales were all greater than 0.9 with good reliability.

6.2 Validity test

The sample data were tested by KMO and Bartlett's sphericity test, and the results are shown in Table 1.

Table 1: KMO and Bartley spherical test

KMO Sampling suitability quantity			0.955
Variables	Approximate cardinality		7261.316
Is duality	Degree of freedom		496
Z-score	Significance		0.000

6.3 Model fit test

The relationship between the variables in this study is plotted as Fig 2 and Table 2, we can see that this model holds.

Table 2: Model Fit Test

Model fitting index	Recommended value	Fitted value
CMIN	The smaller the better	1070.940
DCMIN/DF	<3.0	2.385
SRMR	<0.05	0.481
RMSEA	<0.05	0.081
RFI	>0.9	0.946
IFI	>0.9	0.914
TLI	>0.9	0.905
CFI	>0.9	0.914
PGFI	>0.5	0.647
PNFI	>0.5	0.779

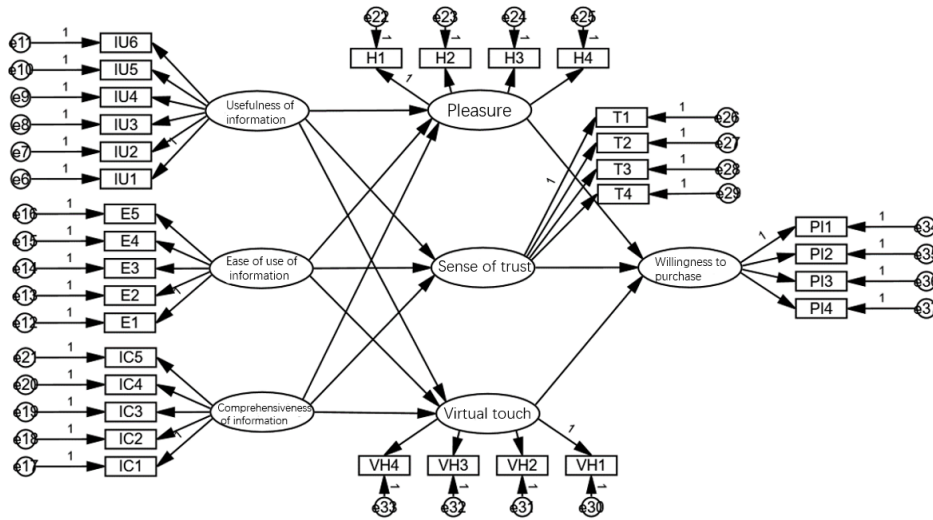


Fig 2: AMOS model path diagram

6.4 Hypothesis testing results

Table 3: Research hypothesis testing

Paths	Estimate	S.E.	C.R.	P	If support
Pleasure <--- Usefulness of information	0.213	0.080	2.670	**	Yes
Sense of trust <--- Usefulness of information	0.222	0.086	2.593	**	Yes
Pleasure <--- Usefulness of information	0.213	0.080	2.670	**	Yes
Sense of trust <--- Usefulness of information	0.222	0.086	2.593	**	Yes
Virtual Haptics <--- Usefulness of information	Paths	0.111	-0.639	0.52 3	No
Pleasure <--- Ease of use of information	0.451	0.099	4.537	***	Yes
Sense of trust <--- Ease of use of information	0.338	0.105	3.220	***	Yes
Virtual Haptics <--- Ease of use of information	0.402	0.136	2.949	**	Yes
Pleasure <--- Comprehensiveness of information	0.187	0.098	1.906	0.05 7	No
Sense of trust <--- Comprehensiveness of information	0.364	0.106	3.429	***	Yes
Virtual Haptics <--- Comprehensiveness of information	0.399	0.138	2.905	**	Yes
Willingness to purchase <--- Sense of trust	0.333	0.053	6.229	***	Yes
Willingness to purchase <--- Pleasure	0.296	0.056	5.272	***	Yes
Willingness to purchase <--- Virtual Haptics	0.272	0.045	5.973	***	Yes

Most of our hypotheses are supported as shown in Table 3. However, hypothesis H6 is contrary to the real data. It is understandable to get this result. What's more, in the actual online shopping,

a situation diametrically opposite to our perception emerges, where the usefulness of short video information is not conducive to consumers' perception of virtual haptic generation, i.e., the hypothesis H1 is not valid. At the same time, the way of clothing and display scenarios shown in the video can not let the viewer produce the feeling of immersive clothing shopping, can not stimulate the tactile memory stored in the brain of consumers, which is not conducive to the generation of virtual tactile sense of consumers.

7 Conclusion and Discussion

In the process of this survey, 319 questionnaires were collected, of which 108 questionnaires that would not watch short videos in the process of online clothing shopping were screened out, and finally 211 valid questionnaires were obtained. The conclusion is that the ease of use of the information displayed in the short video of goods in the process of Internet shopping significantly affects consumers' sense of pleasure, trust and virtual haptics, and thus affects consumers' willingness to purchase. Meanwhile, the usefulness of the short video information display will cause consumers' trust and pleasure, and the better the usefulness is, the more consumers will trust the goods.

Based on the S-O-R theoretical model, this study investigates the mechanism of the influence of short video information display on consumers' willingness to purchase clothing online. However, there are some limitations and issues that need to be investigated. First, the impact of short video information display on virtual haptics should be different for different product categories. This study only studied clothing, and the relationship between short video information display and virtual haptics can be studied in more detail based on different product types in the future. Second, emotional experience includes not only pleasure and trust, and there should be an interaction between pleasure and trust, which will be further investigated in the future.

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