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Short Research Paper

The Influence of Perceived Trust and Time Moderator on the Purchase Intention of Consumers in the Context of E-Commerce Livestreaming

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Abstract: Due to the immediate surge of digital economy brought by the COVID-19 pandemic, e-commerce livestreaming industry in China has been quickly emerging as an important platform for online shopping. However, the factors that affect the trust of consumers in online shopping are different from those in offline economy. E-commerce livestreaming hosts are the key figures for the sales of products in the livestreaming room. Therefore, this paper will adopt Stimulus-Organism-Response (SOR) model to study the influence of e-commerce livestreaming hosts' professionalism, interactivity and popularity on the perceived trust of consumers, further affecting the purchase intention of consumers. It is worth noting that the change of day and night also plays a moderating role in the purchase intention of consumers. In this paper, empirical research method will be adopted and questionnaires will be distributed through Internet. The data will be analyzed in Structural Equation Model(SEM) through SPSS software and LISREL software. Suggestions are expected to be brought up to promote the development of e-commerce livestreaming.

Keywords: E-commerce livestreaming, perceived trust, e-commerce livestreaming hosts, purchase intention

1. INTRODUCTION

Due to the inconvenience of travel and the risks of infection, many offline enterprises have suffered heavy losses or even went bankruptcy. Yet opportunities emerged while the challenges prevailed. During the coronavirus pandemic, online shopping reached a new “golden era” and e-commerce livestreaming boomed rapidly. AliResearch published that the transaction amount of livestreaming on “Double 11” in 2019 exceeded 20 billion yuan, with 177 e-commerce livestreaming hosts' annual transaction amount exceeding 100 million yuan^[1].

E-commerce livestreaming refers to the delivery of e-commerce activities and transactions via a live streaming platform^[2]. Up to June 2020, the number of netizens in China has reached 940 million, 309 million of which are e-commerce livestreaming users, accounting for 32.9% of the total netizens^[3]. With the development of technology, hundreds of thousands of consumers can watch a livestreaming room at the same time. When the livestreaming hosts introduces the products, the link of the products will be displayed on the livestreaming room page. If consumers want to buy the products directly, they just need to click the link and pay for the bill. In addition, consumers can communicate with livestreaming hosts through online comments cause the hosts will select some comments to answer in real time.

Some scholars are very interested in this phenomenon. The rise of livestreaming economy, however, has taken place in the recent few years. The research period of scholars is still short. The current aspects involved include the marketing mode of e-commerce livestreaming, industry analysis, purchase intention, etc. Most importantly, the significance of e-commerce livestreaming hosts is only noticed in a few previous studies, and the hosts are often confused with opinion leaders^[4].

In real life, all products are introduced and promoted by the livestreaming hosts. In this context, which feature of hosts will affect the perceived trust of consumers? Besides, Ministry of Human Resources and Social

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Security in China also stipulated the job requirements of “live salesman” as a new profession in 2020^[5], which provided a clearer basis for the concept of e-commerce livestreaming hosts. Therefore, this paper use "Stimulus-Organism-Response" model (SOR model) to analyze the influence of e-commerce livestreaming hosts' professionalism, interactivity and popularity on the perceived trust of consumers, further affecting the purchase intention of consumers.

In addition, previous studies noticed the virtual situation in livestreaming room. For example, in the process of recommending products, livestreaming hosts build beautiful virtual situation through exquisite words and expressions, such as "This is the perfect lipstick for your lips in dates!"^[6]. However, there are few studies focus on the actual situation of consumers, which is the missing point of previous studies. If the time has changed, will consumers' purchase intention be different? So this paper will also analyze the moderating effect of the change of day and night on the purchase intention of consumers, draw conclusions through empirical analysis and put forward practical suggestions for the special situation. This paper will remind the practitioners to sale strategically instead of following the other people blindly.

As a short paper, the structure is arranged as following: first review the previous literature on this topic, then put forward the hypotheses and research model include the moderating effect. This paper will adopt a survey method to get the questionnaire data, which is going to be analyzed in Structural Equation Model (SEM). The final part is the further work of this paper.

2. LITERATURE REVIEW

2.1 SOR model

Mechrabian and Russell proposed the famous "Stimulus-Organism-Response" model (SOR model) based on environmental psychology in 1974^[7]. The SOR model points out that the external environment produces impacts on the individual's cognitive and emotional state, which has an impact on individual behavior. Eroglu used SOR model for the first time in online shopping, and constructed an impact model of online shopping environments on consumers' purchases^[8]. The study concluded that different online store atmospheres will produce different effects on the internal state of consumers, which will result in different shopping results.

In the context of e-commerce livestreaming, the only subjects that consumers can see are e-commerce livestreaming hosts. Therefore, e-commerce livestreaming hosts have become the only source of stimulus, which affects the perceived trust of consumers, and further affects the purchase intention of consumers.

2.2 Perceived trust

Regarding the definition of trust, Morgan and Hunt pointed out in 1994 that trust means that one party has enough confidence in the reliability and honesty of the other party in the cooperation^[9]. In the business context, Das and Ten defined trust as the buyer's trust in the reliability of the seller in the transaction, which is the approval of buyers toward the seller in a risky transaction^[10].

This nature of e-commerce livestreaming relative to the traditional commerce context gives rise to information asymmetry and transaction risks: identity uncertainty of partners, fear of their opportunism and product quality uncertainty^[11]. Especially in e-commerce industry, trust is one of the most important factors that affect the purchase intention^[12].

2.3 E-Commerce livestreaming hosts

Since e-commerce livestreaming is an emerging economic form. It is until June 2020 that the authority confirmed the “live salesman” as an official profession. That is the reason why most of the existing literature do not treat e-commerce livestreaming hosts as a real profession, and confuse them with opinion leaders.

Hosts with powerful influences can indeed be regarded as opinion leaders, but the detailed definitions of them are profoundly different. The earliest study on opinion leaders originated from Lazarsfeld et al, which

believes that information always flows from traditional media to opinion leaders^[13]. The opinion leaders got the information, stepped into re-dissemination, and then the information flowed to the general public. As Goldsmit stated, opinion leaders can directly influence other people's search and purchase through various methods of recommendations^[14]. However, e-commerce livestreaming hosts and opinion leaders are different. According to the requirements of the new profession as “live salesman” from the Ministry of Human Resources and Social Security in China, the task of this occupation includes not only the duties of opinion leaders, namely the promotion of products to the general public, but also includes the review of product information such as corporate qualifications and product quality. Besides, livestreaming hosts are supposed to participate in the post-sales service. If there is a quality problem with the goods purchased in the livestreaming room, consumers can request the hosts for return or compensation. Therefore, opinion leaders and e-commerce livestreaming hosts should not be confused as the same.

At present, there are very few papers that deliver substantial study on e-commerce livestreaming hosts. During the exploration on the attributes of e-commerce livestreaming hosts, professionalism is often related to appearance attractiveness, charm attributes, and recommended attributes. But these attributes are not the essence of livestreaming hosts. Therefore, this paper will study the impact of the livestreaming hosts' professionalism, interactivity and popularity on the perceived trust of consumers based on the government's definition of this new profession.

2.4 Purchase intention

Most of the previously cited documents involve the purchase intention of consumers. Regarding the definition of purchase intention, Schiffma believes that purchase intention can measure the possibility of consumers buying a product^[15]. The higher the purchase intention is, the more likely it is for consumers to eventually buy products.

Specifically in the e-commerce livestreaming context, the purchase intention may either be a deliberate decision or impulse buying. Both purchase intentions are worth noting. Due to the short duration of the livestreaming, the goods will be sold out in a few seconds, impulsive consumption accounts for a large proportion in online shopping. For example, perceived pleasure and perceived arousal can affect impulsive purchase intentions of consumers^[16].

3. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

Based on the discussion about the background and theoretical model, the research model of this paper is as follow:

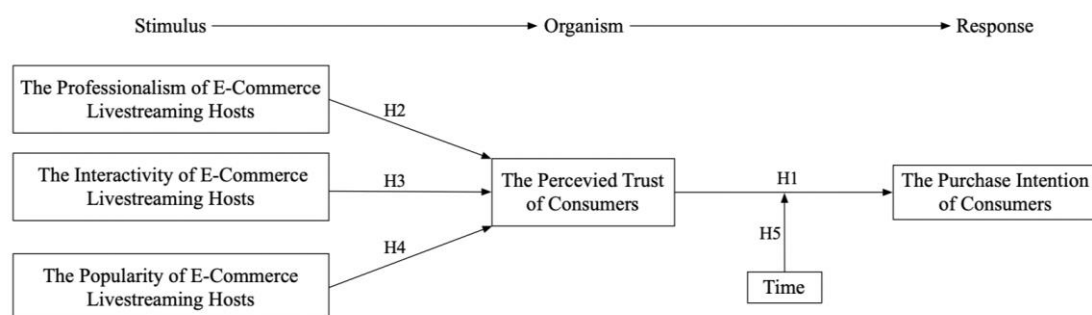


Figure 1. Research model

Yongsheng Zhou and Shihua Tang lately applied SOR model in the field of e-commerce livestreaming based on the perspective of social presence^[17], they pointed out that emotional social presence will affect the purchase intention of consumers through the mediating variable of perceived trust. According to SOR model, the

stimulus first affects the body and then produces a response. Therefore, emotion changes have an important impact on actions. In e-commerce, trust is one of the most important factors that affect the purchase intention. The stronger consumers' trust in livestreaming hosts is, the easier it is to purchase products through recommendations. The following hypothesis is proposed:

H1: The perceived trust will positively affect the purchase intention of consumers.

With the rapid development of e-commerce livestreaming, more and more e-commerce livestreaming hosts have emerged. Ying Xie and Chunqing Li defined e-commerce livestreaming hosts as a new type of group that provides consumers with products display through product trials and experience sharing on livestreaming platforms, thereby promoting consumers' purchase^[18]. Jiaqi Li, the leading e-commerce livestreaming hosts in China, builds up his reputation as a host with fair evaluation through real feedback and criticism of products, so as to gain the trust of consumers.

But the task of e-commerce livestreaming hosts is not only to introduce in front of the camera, but also requires numerous work before and after the livestreaming. Therefore, based on the regulations of "live salesman", this paper innovatively divides the measurement items of "the professionalism of e-commerce livestreaming hosts" into three aspects, namely, products selection planning before livestreaming, products recommend during livestreaming and related services after livestreaming. Because a truly professional livestreaming hosts will not only concentrate on the product introduction during the livestreaming, but also strictly control the product selection process before the livestreaming. Participating in after-sales service is also part of the duties for e-commerce livestreaming hosts. Such a comprehensive service will arouse the perceived trust of consumers.

H2: The professionalism of e-commerce livestreaming hosts will positively affect the perceived trust of consumers.

Compared with offline commerce where consumers can actually experience storefronts, products, and service personnel, the only subject that consumers can see in e-commerce livestreaming room is the livestreaming hosts, which means that all consumers' sources of trust come from the livestreaming hosts, so the livestreaming hosts needs to maintain real-time interactions to generate a sense of intimacy and closeness with the consumers^[19]. Yingxin Chen indicates that there is a significant positive correlation between the interaction of sellers and consumers and the establishment of trust^[20], which means that the more interaction produced between sellers and consumers, the higher the level of customer trust establishment will be.

For example, the well-known e-commerce livestreaming hosts Ya Wei builds an Internet celebrity brand by cultivating stickily loyal fans. The development of modern technology allows the live commenting to be displayed in real-time on the pages of the hosts and the consumers. Consumers can ask questions through internet, the livestreaming hosts can answer and chat in the livestreaming room. Even though the livestreaming hosts and consumers are in different spaces, they can still achieve full interaction. It greatly reduces consumers' uncertainty about the product and increases their trust.

H3: The interactivity of e-commerce livestreaming hosts will positively affect the perceived trust of consumers.

In modern society, "attention" is a scarce resource. When multiple livestreaming hosts are live at the same time, consumers often choose the most popular livestreaming hosts. Because of the herd effect, consumers will follow the choices of most people, believing that the more popular the hosts are, the better their reputation might be.

Some small hosts with limited fame have not established their reputation among the public. Consumers do not know the actual situation of these small hosts and cannot be sure of the quality of the products they introduce, so consumers will not trust the hosts without reputation. Consumers usually choose to trust the well-known livestreaming hosts in comparison.

H4: The popularity of e-commerce livestreaming hosts will positively affect the perceived trust of consumers.

It should be noted that even if consumers have perceived trust on livestreaming hosts, their purchase intentions do not remain unchanged. Consumers are often busy with work during the day and do not have enough time to watch e-commerce livestreaming. As time changes, at night, consumers are more likely to relax when they return to the comfortable environment at home, and it is easier for them to reward themselves. Guopeng Chen used a psychological perspective to explore that day and night preferences can predict impulsive shopping tendencies. Therefore, in the night dominated by perceptual thinking, the possibility of impulsive consumption is greatly increased, and the purchase intention is also higher than that during the day. Time changes play a great moderating role in this process.

Although there is no previous research about the moderating role of time in this topic, there are precedents in other aspects about time as moderating role. For example, Viswanath Venkatesh regard time as a moderating variable. As time changes, the impact of the health consultation kiosks on women' health in rural India also change^[21]. The introduction of time as a moderating variable into the topic is also one of the innovative thinking of this paper.

H5: Time plays a moderating role in the process of perceived trust affecting purchase intention of consumers.

4. METHODOLOGY

This paper will conduct empirical research through survey. The questions in the questionnaire will be developed around the research model. The questionnaire design is mainly based on the previous studies and focus group discussions. Each measurement item is denoted by Likert Scale, which contains five types of responses: "strongly agree", "agree", "not necessarily", "disagree", and "strongly disagree".

This paper will distribute the questionnaires through the Internet. Firstly, a small part of the questionnaires will be distributed for the exploratory factor analysis. If the initial result is reasonable, the scope of the distribution will be expanded. After collecting the questionnaire data, this paper will use SPSS to analyze the reliability and validity of the questionnaire. Then the measurement items and factors in the questionnaire will be matched in Structural Equation Model through LISREL. Factor loading and path coefficients are tested to analyze the degree of fitness between the questionnaire data and the model in this paper. The test of moderating effect will be carried out based on the suggestions of Zhonglin Wen and Zhen Zhang^[22].

5. IMPLICATIONS AND FURTHER WORK

It is easy to ignore the interesting phenomena happening around us, such as why "Double 11" starts in the middle of the night? Why is it easier to eat snacks at night? It is because this special time has a moderating effect on consumers' purchasing intentions in the evening. As mentioned before, most of the previous studies focus on the impact of the virtual context constructed by the livestreaming hosts on the consumer's purchase intention, such as drawing the beautiful application scenario of lipstick to attract consumers to buy, but there is little discussion about the physical environment of the consumer. The academic value of this article is to innovatively propose the moderating effect of time in e-commerce livestreaming. This paper discusses the

factors that affect perceived trust in the context of e-commerce livestreaming. It also gives a clearer view on the characteristics of e-commerce livestreaming hosts according to the Ministry of Human Resources and Social Security in China.

In real life, many practitioners try to market through livestreaming, but the number of their audience is so few that results in minimal sales. This article will use empirical analysis to draw conclusions and provide practical suggestions for e-commerce practitioners to improve the situation.

The further work is to design the questionnaire based on the review and thinking of the previous studies, and then determine the measurement items in the questionnaire through focus group discussion, then distribute the questionnaire through Internet. After collecting the questionnaire data, this paper will use SPSS to analyze the reliability and validity of the questionnaire. Then the data will be analyzed using Structural Equation Model through LISREL. At the final step, this paper will draw conclusions and put forward practical suggestions.

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