Doctor of Philosophy

Essays in Repurchase Intention，Impulse Buying Intention and Brand Marketing Strategy in the Context of Live Streaming

The Graduate School of the University of Ulsan

Department of Economics

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When I was 36, it took a lot of courage to start a new study abroad. With the encouragement of my family, I embarked on a new journey. Studying for a doctorate is not only a major challenge in life, but also a choice without regret. I want to thank all the people who have given me great support and help over the past few years.

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All remaining errors in this PhD thesis are, of course mine.

Abstract in Korea

라이브 스트리밍에서의 재구매 의사, 충동구매 의사, 브랜드 마케팅 전략

이 논문에서는 라이브 스트리밍에서의 재구매 의사, 충동구매 의사, 브랜드 마케팅 전략을 연구한다. 첫 번째 논문에서는 재구매 의사의 결정요인을 보여주는 모형을 제시하고, 상호작용, 프로모션, 가치, 고품질의 콘텐츠, 고객만족도, 고객신뢰와 온라인쇼핑 습관이 재구매의사에 미치는 영향을 분석한다. 또한, 성별, 연령, 교육수준, 가처분 소득, 직업, 라이브 스트리밍 시청 이력 등 다양한 인구 통계적 요인이 재구매 의사에 미치는 영향을 고려하였다. 분석 결과 고객 만족도가 라이브 스트리밍 중 재구매 의사에 영향을 미치는 가장 중요한 요소 중 하나로 나타났다. 또한 재구매 의사는 인터액션작용를 통하여, 라이브 스트리밍에 영향을 미치는 것으로 나타났다.

두 번째 논문은 라이브 스트리밍의 측면에서 충동구매 의사에 영향을 미치는 주요 요인들을 분석했다. 라이브 스트리밍에서 소비자들은 오프라인 쇼핑에 비해 더 높은 불확실성에 직면하게 된다. 충동구매는 사전에 계획되지 않았고 충분한 정보 검색 절차가 부족하기 때문에 더 높은 위험에 가지고 있다. 따라서 고객의 신뢰는 라이브 스트리밍 환경에서 소비자의 충동구매에 영향을 주는 중요한 요소가 된다. 이 논문에서는 주로 모바일 마케팅이 소비자 신뢰와 충동구매 의사에 미치는 영향, 다른 종류의 모바일 마케팅의 영향, 그리고 다른 변수들의 인터액션 작용에 대하여 연구했다. 분석 결과, 마케팅 시한이나 판매 인센티브는 소비자의 충동적인 구매 의사를 높이지는 못하였다. 중요 결정요인은 소비자의 라이브 스트리밍 방송 플랫폼에 대한 신뢰로 나타났다.

세 번째 논문에서 covid-19 의 갑작스러운 확산은 지난 몇 년간 발전해 온 개인용 컴퓨터 라이브 스트리밍을 새로운 시대로 진입시켰고, 모바일 라이브 스트리밍의 급속한 발전을 가져왔다. 라이브 스트리밍 시장의 확장뿐만 아니라 전국적인 라이브 스트리밍 트렌드가 나타났다. 또한 모바일 라이브 스트리밍을 점점 더 브랜드 마케팅에서 중시하게 되어, 브랜드 전파와 제품 확산의 중요한 도구가 되고 있다. 이는 판매량과 브랜드 인지도를 높이는 데 도움이 되었다. 모바일 라이브 스트리밍 플랫폼을 통한 마케팅 소통은 인기 있는 브랜드 마케팅 방식으로 정립되었다. 이 논문은 주로 모바일 중심의 라이브 스트리밍 플랫폼을 이용하여 브랜드 마케팅 활동의 현황, 방법, 문제점과 발전전략을 연구한다. 티몰 라이브 플랫폼을 분석하고, 마케팅의 관련 이론을 이용하여 브랜드 마케팅 방식과 라이브 스트리밍 마케팅의 일반적인 특징을 분석했다. 또한 라이브 스트리밍 브랜드 마케팅에 존재하는 문제점에 대하여 개선사항을 제시하였다.

키워드: 라이브 스트리밍, 고객 만족도, 재구매 의사, 프로모션 시간제한, 판매 인센티브, 라이브 플랫폼에 대한 신뢰, 라이브 스트리밍에 대한 신뢰, 충동구매 의사, 브랜드 마케팅, 마케팅 전략

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Chapter 1: General Introduction

Scholars are interested in many issues in the field of economic management, such as consumers' repurchase intention, impulse buying intention and brand marketing. This doctoral dissertation addresses some new aspects of these problems by focusing on three independent studies. These studies represent our three consecutive chapters.

In Chapter 2, "*Research on the influencing factors of consumers' repurchase intention in the context of live streaming*", We put forward a theoretical model manifesting the determinants of repurchase intention that is mainly explored how perceived interactivity, promotional activities, perceived value, high quality content, customer satisfaction, customer trust and online shopping habits affect the intention of repurchase in the context of live streaming. We have further attempted to investigate the influence of repurchase intention among different demographic elements (i.e. gender, age, education, disposable monthly income, occupation and history of watching livestreaming). Results reveal that customer satisfaction is one of the most important factors affecting repurchase intention in the process of live streaming. The analysis results of the multi-group reveal that the influence path of repurchase intention are corresponding moderating effect are more evident for particular demographic variables in the process of live streaming.

In Chapter 3, "*Research on the internal mechanism of consumers' impulsive buying intention in the context of mobile live commerce",* we figure out an important question: what factors affect impulse buying intention while consumers are watching live streaming. In this study, we put more emphasis on the multi group analysis, namely the impact on impulse

buying intention among different demographic elements. Compared with physical shop shopping, consumers face higher uncertainty. Because impulse buying has no plan beforehand and lacks sufficient information search process, it faces higher risk. Therefore, customer trust is an important factor affecting consumers' impulse buying in the live streaming environment. This paper focuses on how mobile terminal marketing stimulus affect consumer trust and impulse buying intention, how different mobile terminal marketing stimulus affect the effect, and which variables have moderating effects according to multiple groups. We found that neither promotion time restriction nor material incentives can arouse the impulse purchase intention of all consumers. Compared with material incentive, promotion time restriction can only bring consumers' impulse purchase intention in a few groups. Our results further reveal that Chinese consumers' trust in the live streaming platform is the key determinant of impulse buying intention against the backdrop of live streaming.

In Chapter 4, "*Brand marketing strategy of live streaming in mobile era—a case study of Tmall platform"***,** a sudden outbreak of the COVID-19 makes the PC end live streaming which has been developed for many years enter a new era, giving birth to the rapid development of mobile end live streaming. Not only because of the expansion of the live streaming industry market, the rise of the trend of the national live streaming, but also because the mobile live streaming is more and more valued by the brand, becoming an important tool for brand communication and product promotion. It is because of its unique communication characteristics that some scholars believe that the era of precision marketing has been opened by live network. Mobile live from the initial fans to reward and promote the brand, to now in the form of live marketing, consumers can "buy while watching". The time period from the

understanding of the goods to the final completion of the purchase behavior has been greatly shortened. It is conducive to improving sales volume and brand awareness. Marketing communication through mobile live platform has become a popular way of brand marketing. This paper mainly studies the current situation, methods, problems and development strategies of brand marketing activities with the help of live streaming platform under the background of mobile internet. Taking Tmall live streaming platform as an example, this paper analyzes several ways of brand marketing with the help of live streaming and some universal characteristics of live streaming marketing by using the relevant theories of marketing. In view of the problems existing in live streaming brand marketing, it puts forward relevant improvement measures.

Each chapter comprises an introduction, an analysis presenting a selective literature review and/or a methodology, and a brief conclusion.

Chapter 2: research on the influencing factors of consumers' repurchase intention in the context of live streaming

2.1 Introduction

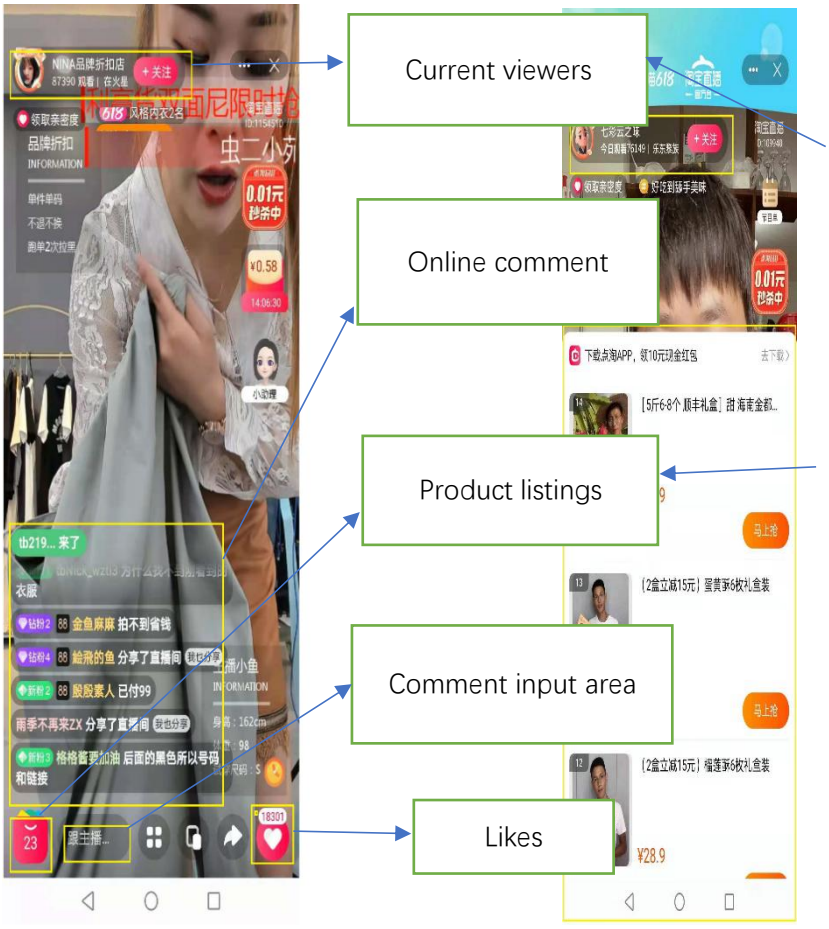
As a worldwide disaster, the global economy has been heavily influenced by the COVID-19 pandemic. In response to the pandemic outbreak, the leaders of many countries decided to save lives before saving the economy, declaring sudden or phased lockdowns of their countries. Policies like “social distancing” and “stay-at-home” were implemented overnight, which had caused incalculable damage to plenty of enterprises (Donthu& Gustafsson, 2020; Leite, Hodgkinson, & Gruber, 2020). The COVID-19 pandemic was the point at which “social distancing” entered consumers’ popular icons. The ways in which companies operate have been shifted by social distancing and forced lockdowns that necessitate radical changes to operations and set-ups.

The physical distancing necessitated by the pandemic had stimulated consumer use of mediating technologies in an effort to maintain social connectedness and adjust to a new reality and way of life, which has resulted in fundamental changes in the business models and purchasing patterns. The live streaming as a fresh way that shows a product’s capability comprehensively in real time and has the “contactless” characteristic. It can be fully adapted to the policy of home quarantine and makes it more convenient of consumers to obtain access to the products and services what they need. Consumers have become a mania for shopping through live streaming services, which is dubbed live commerce in China.

To date, there are few existing studies to investigate the phenomenon of livestreaming. Meanwhile， With the highflying development of network technology， shopping websites using simple engines and advertisements for product promotion can no longer draw consumers very well that must seek new marketing methods. The emergence of live commerce has undoubtedly brought new hope for shopping website enterprises, and has

become a booster for the development of enterprises in a time of global pandemic. With the boom of internet, live streaming is used to demonstrate how products are created and used, to illustrate different perspectives of products, to communicate with customers actively and respond in real time, and to organize live activities that amuse and urge customers to purchase on the spot (Lu, Xia, Heo, &Wigdor, 2018;). Live commerce is being used to market and monetize an ever-widening range of cultural, commercial and personal items, in what some have likened to the lifeline of Chinese small retailers during the pandemic， a model that has underpinned periods of explosive growth in China. An example is explicated in Fig. 2-1.

Figure 2-1 Examples of live streaming as applied in live commerce



Importantly，when shopping websites regard live commerce as a booster of sales growth，when an enterprise carries out product promotion and brand promotion adopting the method of live streaming, it should consider which factors of live commerce will affect consumers' repurchase intention, and what is the intrinsic influence mechanism. Based on this, it is necessary to study the influence of consumers' repeated purchase intentions in the context of

live streaming.

According to Gartner (2015), online consumers' expectations are continuing to increase in the last past years. These heightened consumer expectations have increased the complexity of online systems that businesses need to operate. Compared with physical stores, it is not easy to establish customers' repurchase intention in the online and mobile environment. Research has demonstrated that cultivating loyal consumers in online markets is challenging and considered more important than in offline markets (Harris and Goode, 2004). Based on past studies, Manuela Aparicio et al,. (2021) focus the impact of gamification and reputation on the intention of repurchase in ecommerce. Although the research on consumers' repurchase intention has received extensive attention, the researches on consumers' repurchase intention and its influencing factors in the context of live commerce are still insufficiency. Through the study of consumers' repurchase intention against the backdrop of live commerce, we can provide the references for live streaming merchants to retain more customers, which is conducive to formulating tailor-made marketing strategies based on customers and their own development to maximize customer retention. This brings about the booming in sales, it plays a huge guiding significance for the future development of online shopping simultaneously.

2.2 The theoretical background

2.2.1 Consumers' repurchase intention

Theoretically speaking, repurchase intention is a kind of behavioral intention, which belongs to attitudinal loyalty. It usually describes the tendency and probability that consumers are willing to continue a certain purchase behavior. Adrian (2000) believes that repurchase intention is the inclination and intention of customers to purchase the brand product or service again after being influenced by the purchased product or service. Khalifa and Liu (2007) further stressed that online repurchase intention refers to customers' future repurchase project for a specific seller in the future. Widely used in studies regarding repurchase intention, it is viewed as critical for retailer because it is cheaper to retain existing customers than to look for and serve new customers (Spreng et al., 1995).

Furthermore, by specifically focusing on the service context, Lu Chena et al. (2019) found

out that airline service quality enhanced the positive effect of repurchase intention on airline company service because it associated positively with brand awareness and perceived value. This paper defines repurchase intention as the possibility that consumers are willing to continue to buy products by watching live streaming in the face of the same demand after they first buy products by watching live streaming.

2.2.2 Trust

The concept of trust is one of the fundamental factors to predict consumer behavior in the theoretical models. Trust is defined as “confidence in the reliability and integrity of exchange partners” (Morgan & Hunt, 1994). Based on this definition, in this study, trust in the context of mobile shopping refers to consumers' perceptions about integrity and honesty related to online commerce. In this paper, consumer trust is defined as: consumers' positive expectation and trust on the integrity and reliability of the service provided by live streaming sellers, and will generate repurchase intention in the context of mobile live shopping.

Like traditional markets, lack of trust tends to prevent consumers from purchasing online and leads them to surrender their shopping cart during an online transaction (e.g., Awad and Ragowsky, 2008). In addition, unlike conventional e-commerce where trust is formed via transaction experiences, in the online and mobile environment, on account of customers’ experiences, trust is referred to deliver marketing information for subscribed fans in the interactive environment (D.J.Kim 2005).In the process of building trust, it consists of two components, namely, cognition based trust and emotion based trust(N. Hajli et al,.2017).It depended upon emotional attachment and ties between the customers and businesses.

2.2.3 Perceived value

Hult, Sharma, Morgeson III, & Zhang（2019) have noted that perceived value is customers’ assessments of the quality of the product (and service) being pursued relative to its price and is observed to have a positive influence on their satisfaction levels. Another scholar, Lovelock (2000) defined perceived value that perceived benefits need to be balanced against perceived costs. Similarly, Bettman et al. (1998), confirmed customer perceived value as “value customers

perceive they obtain or experience through the use of services".

In other words, perceived value refers to the subjective evaluation of consumers after purchasing products and comparing their own income with the actual cost on the basis of using the products. Past studies and surveys have indicated that perceived value is considered as a fundamental factor in marketing and for marketers (Keshavarz and Jamshidi, 2018). Widely used in studies regarding customer's buying behavior, especially some scholars find customer perceived value as an essential element to predict customer's buying behavior (Sabiote-Ortiz et al.,2016; Joung et al.,2016).

2.2.4 Customer satisfaction

Satisfaction is according to Kotler (2000) "compare the perceived performance (or result) of the product with his or her expectations, engendering a person's sense of pleasure or disappointment"; "Customer satisfaction is a delight that customers feel when evaluating a particular product or service which they have made use of." is discussed in the previous studies (Solimun& Fernandes 2018). That is, the customer has some expectations about the product at the time of purchasing. The customer is satisfied when the product delivers the desired benefits and fulfills the expectations. Highly satisfied customers will take the same brand / company as the first choice for subsequent purchase. (Eroğlu, E. 2005).

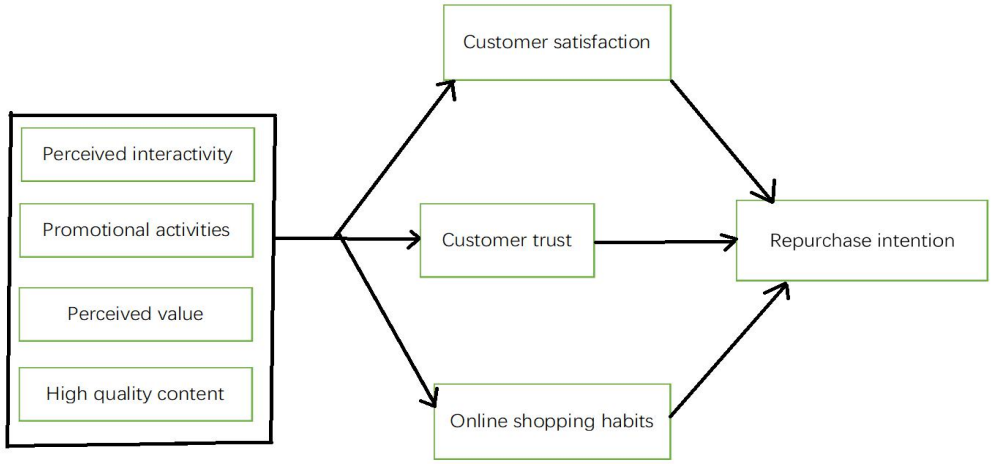
As a yardstick, customer satisfaction affects customers' satisfaction with their consumer products or services. As a matter of fact, it refers to the gulf of customers' emotional response to their initial expectations and the real values they have gained during the purchasing and consumption periods. Past studies and surveys have indicated that satisfaction is a trade-off of pre- and post-consumption or usage of a product (Shamsudin et al., 2018a). Given that customer satisfaction is thus essential to meeting the various needs of customers and firms. As mentioned earlier, the pursuit of customer satisfaction has become more and more important as a strategic imperative for most firms that need to sustain and maintain competitive (Yi and Nataraajan, 2018).

2.3 Research model and hypotheses

Based on prior marketing studies, Fig. 2-2 depicts a picture of the research model. We refer to

it as “Determination model for repurchase intention in the context of live commerce.” This research model is well grounded on an overall theoretical basis. The definition and interrelationship of the constructs in this research model are addressed as follows.

Figure 2-2 Conceptual model



2.3.1 Perceived interactivity and repurchase intention

Perceived interactivity in this paper refers to the high-intensity interaction between live streamers and consumers, and between consumers and consumers to communicate, inquire, evaluate, etc. during the live streaming. Live streaming can be considered as a platform for effective communication in the process of live commerce.

Consumers and live streamers, as well as between consumers and consumers, can interact through this platform. Consumers will consult and interact with customer service staff on the information they are interested in to learn more about product-related information, express delivery services and other information. Or you can let the customer service staff recommend high-quality products to themselves, so that consumers can make faster decisions. When consumers watch the live streaming, they can not only ask the live streamer the questions

immediately they are interested in, but also get the corresponding answers; they can also learn about the purchase experience of other consumers at once, which will affect their own purchase decisions. Through the live chat session, consumers will be able to obtain first-hand information to enable them to solve the problem. Therefore, “perceived interactive” is also used as one of the predictors. Yao Jie (2017) started from a B2C cross-border e-commerce platform and pointed out that interactive experience significantly affects repurchase intentions. Taotao Wang (2015) believes that user interaction on the Internet has a significant impact on the value of consumer experience.

Above all, in the context of live streaming, online interactive communication is the emotional bond between live streaming merchants and customers, and between customers. The more one-to-one interactions between live streamer and customers on the live broadcast, the more useful information the customers can obtain, the better the shopping experience that customers feel, and the easier it is to generate repurchase intentions. Therefore, repurchase intention may change according to the characteristics of perceived interactivity, suggesting the following hypothesis.

H1： In the context of live commerce, the characteristics of perceived interactivity can positively increase repurchase intention.

2.3.2 Promotional activities and repurchase intention

Promotion activities refer to a series of activities carried out by businesses in order to expand their popularity and increase their sales volume. The main purpose is to draw the customers to purchase goods or services in a given time period. The effect of promotion on consumers’ perceptions and purchasing intentions is a common issue in marketing research as proposed by (Lynne lee, Vincent Charles,2021). Marketers can use different types of promotional tools to have

a wide range of influence on consumer buying behavior. Han Rui and Tian Zhilong (2005) explored the influence of these three promotion methods on consumers' repurchase intention by taking gifts, coupons and discounts as the objects. Through empirical research, they found that the three promotion methods had a positive effect on consumers' repurchase intention.

Prior research (Holbrook 1996) has shown that it was only when consumers are interested in the business promotion activities, the promotion activities make consumers develop active consumption experiences. Furthermore, (Hsin-Hsien Liu, Hsuan-Yi Chou 2014) has explored how consumers' prior price assignments influence perceived price increases and repurchase intentions. The lower the price consumers allocate to goods, the higher the perceived price rise, and the lower their willingness to repurchase. As indicated in their study, the price bundle promotion sets off more consumers to decide to repurchase the product. When live streaming merchants conduct promotional activities in the process of live streaming, they can distinguish between new and old customers according to the preferential activities provided to new and old customers based on consumer transactions, provide different consumption experiences for new and old customers, and establish emotional connections with them, which in turn stimulates consumers' willingness to repeat purchases. This leads to the following hypothesis:

H2: In the context of live commerce, promotional activities have a positive effect on repurchase intention.

2.3.3 Perceived value and repurchase intention

As noted earlier, consumer's perceived value in an online shopping environment consists of not only more benefits (e.g., quality and a friendly shopping interface), but also less sacrifice (e.g., time gaining, competitive price) (Wu et al., 2014). Furthermore, (Yulia W. Sullivana, Dan J. Kim. 2018) integrate the consumers' product evaluations model and technology adoption model in

e-commerce environments, showing that assessing the relationships between perceived quality, perceived value elements, and trust may contribute to the better understanding of repurchase intention in the context of e-commerce, Wang and Teo (2020) confirmed that perceived value and sustained willingness are significantly positively correlated with mobile government services among Chinese users.

For a long time, one of the hot issues of scholars is what the behavioral consequences of perceived value can bring. Perceived value is a crucial and sustainable predictor of customer loyalty and, as stated above, can have an immediate and positive impact on customers' repurchase intention. This has been extensively ground by a large number of studies (I.C. Chang, et al.,2005 M. Fassnacht, I. Köse 2007). In this paper, the division of customer value dimensions is based on (Ramaseshan 2013), combined with the characteristics of live streaming, and divides customer value into four dimensions: express service, perceived fairness, perceived sacrifice, and perceived price. This method of classification focuses on the process of online shopping, and focuses on the emotional (perceived equity), cost (perceived sacrifice) and quality (perceived price) aspects of live commerce. As well as is consistent with the definition of customer value in the context of live streaming. To empirically validate the above assumption the next hypothesis is posited:

H3: In the context of live commerce, perceived value has a positive effect on repurchase intention.

2.3.4 High quality content and repurchase intention

High-quality content means that in the process of live streaming, the live streamer not only has a comprehensive and detailed display of the products, but also meets the individual needs of consumers. On the one hand, the live streamer can show and explain the products in a more intuitive, three-dimensional and all-round way during the live streaming, so that consumers can understand the products displayed as comprehensively as possible. The live streamer will display products according to the wishes of the consumers watching the live streaming concurrently at that time. On the other hand, the live streamer will give professional answers or meet other personalized needs through online and offline according to the questions raised by different consumers. It can provide the same visceral feedback as a face-to-face conversation.

Tang yuhai's (2018) work on e-retailer's private brand has demonstrated that personalized demand has a significant positive impact on repurchase intention. Conversely, the more attractive the user's perception of diverse needs and alternatives during the purchase and use of online knowledge-paid products and the stronger the attractiveness of substitutes, the weaker the user's willingness to repeat purchases (Xiao lu 2019).IResearch, a professional market research institution in China in the era of network economy, found that an anchor on an e-commerce live streaming platform has 180,000 fans which a live streaming conducted by her has about 2500 viewers, and only a few dozen orders were sold in the end. The commercial conversion rate was extremely low. Some online stores have a conversion rate of as high as 20% for live streaming, while others have a conversion rate of zero. In this regard, Wu Yongyi (2017) believes that an important reason for the large conversion rate gap is the professionalism of the live content. Huang Hongya (2018) believes that if a live streamer is very familiar with the products being broadcasted, the stronger his professional ability, the more able he can persuade consumers, make consumers more trust in merchants, and have a more positive attitude towards online stores. The attraction is also stronger. In addition to the professional ability of the live streamer, the more accurate and clear the live streamer describes the product information in the process of live streaming, the more uncertainty of consumers can be reduced, the easier it is to arouse consumers' emotions and make consumers attracted by live merchants. In conclusion, we propose that:

H4: In the context of live commerce, high quality content has a positive effect on repurchase intention.

2.3.5 Customer trust and repurchase intention

Base on previous literature, we acknowledge that the purchase from an e-vendor is decided by customer trust in the e-vendor (Gefen, Karahanna, & Straub,2003a).In line with Nick Hajli et al.'s (2017) investigations on trust and purchase intentions indicates that trust in a SNS could ascend customers' purchase intentions by contacting with e-vendors, SNSs as social commerce platforms. In accordance with Manuela Aparicio et al,. (2021), a significant direct effect of trust on the intention to use of e-commerce and on repurchase intention can be generated in e-commerce context.

Yulia W. Sullivana, Dan J. Kim.（2018) adopted the model of product evaluation, online trust is positively associated with repurchase intention in e-commerce environments. Furthermore, a large number of researches examine that customer trust has notable influence on customer repurchase intention. The higher the trust degree of the customer to the social platform, the more likely the customer has been willing to shop on the social platform. Hence, with decades of China's burgeoning economic growth, the role of trust in influencing the choice of consumer goods and purchasing decisions seems to be increasingly important today. As construed by Elisa Giampietriet al,. (2018), the more convenient it is for consumers to shop on short food chains, the higher their trust and the purchase intention to purchase.

To date, since the study is examined in the context of social commerce, there are several studies have been conducted on consumer trust with regard to other concepts that are vital to the social presence of interaction with the sellers and information support (Lai-Ying Leong et al,. 2020). In the consumer's shopping decision-making process, merchants provide high-quality information to help consumers refrain from information asymmetry and uncertainty, to some extent, which also conduces to enhance trust. Moreover, ApiradeeWongkitrungrueng, Nuttapol Assarutwere (2020) further stressed the indirect effect of utilitarian and hedonic values on customer engagement through customer trust in products and then trust in sellers. Yang Zhao et al,. (2020) explore the influence of information quality on trust and purchase intention that trust in electronic word-of-mouth contribute consumers to make purchase decisions.

Based on the majority of the previous studies that have demonstrated the direct influence of online trust on repurchasing intention, the following hypothesis is suggested in this study:

H5: In the context of live commerce, customer trust has a positive effect on repurchase intention.

2.3.6 Customer satisfaction and repurchase intention

Extant studies have discussed the importance of customer satisfaction for a positive cognition of online shopping. In a study for online group buying, it indicates that owing to an evaluation for confirmation, satisfaction has a positive impact on repurchase intention, and the powerful predictor of repurchase intention (Hsu, Chang, & Chuang, 2015). Moreover, Omar

Boubker,Khadija Douayri (2020) adopt the Partial Least Squares approach to analysis dairy products consumers within the Laayoune-Sakia El Hamra region in Morocco, it turns out that consumer satisfaction is conducive to the interpretation of brand attitude, brand preference and purchase intentions to a great extent.

In addition, Paulo Rita et al. (2019) examined the effect of service quality and satisfaction on repurchase intention in the context of internet shopping. These authors used the four-dimensions of e-service quality model that allows more reasonable prediction in customer behavior. It showed that e-service quality had a positive effect on satisfaction, while it also influenced the customer behavioral intentions through satisfaction directly and indirectly, namely repeat purchase. According to the expectation-confirmation theory discussed in the model was proposed by L.G. Pee et al. (2018), showing after-sale service quality significantly affects online shoppers' repurchase intention through satisfaction, accordingly improve the usability of website. More specifically, previous evidence (Chechen Liao et al. 2017) has also highlighted that confirmation has an influence on satisfaction, which in turn determines repurchase intention.

As discussed before, the issue of consumers' satisfaction for online repurchase has been a subject of numerous studies. Customer Satisfaction (CS hereafter) is considered as a crucial factor which can affect the firm sales. In other words, CS exerts an influence on the foundation of any successful businesses including beauty and cosmetics in the extreme competitive market. This is possibly because of the fact that higher CS level plays an indispensable role in encouraging customers to repurchase their products or reuse services. This is consistent with the study of (Park et al., 2019). In this regard, remarkable information quality of products and services will enhance customer's loyalty (Zhou and Li, 2020). Accordingly, it will improve customer satisfaction. Conversely, lack of information may affect consumers' willingness to buy goods from the website (Ghasemaghaei and Hassanein, 2016).

Researchers of late have started to employ the specific frameworks in illustrating and interpreting mobile consumer satisfaction. Based on a combination of structural equation modeling (SEM) and artificial neural network (ANN) analyses, the impact of satisfaction in the mobile commerce was investigated and confirmed by Zoran Kalini´cet al. (2021). In line with a sample of 420 mobile shopping app users in India, the study confirmed that perceived value

favorably affects the satisfying experience and repurchase intention of m-shoppers (Prasanta Kr Chopdar,Janarthanan Balakrishnan 2020).As depicted by Sook Fern Yeo et al. (2021),their research has important implications for Foodpanda to continuously improve its food delivery apps service platform and achieve customer satisfaction, leading to repurchase intention.

As mentioned above, we advocate when customers are satisfied with the products or services they have bought, they often buy again in the context of live commerce. After reviewing the previous literature, in light of the significant effect of consumer satisfaction in the context of live commerce, the hypothesis proposed is as follows:

H6: In the context of live commerce, consumer satisfaction is positively associated with customer repurchase intention.

2.3.7 Online shopping habit and repurchase intention

With the booming of the online shopping, More and more consumers regard online shopping as a conventional shopping mode. Regular online shopping will make them form the inertia of online shopping. Therefore, it is of great significance to explore the role of customers' online shopping habits in the influence model of repeat purchase intention. In the early stage of the live streaming platform, businesses are frantically subsidizing customers, whose purpose is to cultivate consumers' consumption habits. In the early stage, the merchants greatly benefited consumers, which helped to alleviate some customers' sense of rejection of the emerging thing of live streaming, and through continuous subsidies to cultivate customers' consumption habits of watching live streaming to purchase products. With the rise and rapid development of the live streaming industry, some consumers have taken live commerce as a daily habit.

Habit is the particular type of automaticity that involves responses directly driven by contexts such as location, words, devices, and situations that are consistent with past performance. Consumer behavior is habitual at times, which means iterating past consumer behavior automatically. Habits are kind of responses that can be soon obtained from memory, which is faster than the memorization process of slowly obtaining and changing in memory (Wood and Neal, 2009). In practice, in order to better match the products of their websites, mobile applications and online retailers, consumers' online shopping priorities, it is increasingly highly

concerned about habits and trends accordingly in the work of (Shahid Kalim Khan et al.,2020).

Habits have been discussed broadly in marketing, as noted by (Amit Bhatnagar,Purushottam Papatla. 2019) their habits and social capital of owning and using different types of electronic devices are related to the types of information that the type of information consumers search. In light of the recognized importance of online shopping habits, several scholars investigated the role of habits in consumers' behaviors. Previous studies have established that Xuebing Wu (2018) studied the willingness of online car-hailing users to continue to use habit as one of the contributing factors to users' sustainable use, and through empirical analysis confirmed that habit has a positive impact on users' sustainable use. Prior research has explored the moderating role of habit that focused on online stores. Chao-Min Chiu et al. (2012) applied the concept extensively, arguing that the habit has a negative moderating effect on the relationship between trust and repeat purchase intention. Subsequent work brought about the development of habits to research repeat purchase intention. Basis (Hsu, Chang, & Chuang, 2015) framework, trust and a moderator of habit can ascertain the elements holding up repurchase intention in online group-buying.

We are interested in examining the role of online shopping habits in consumers' repurchase intention in the context of live commerce. This study believes that if customers form an online consumption habit of buying goods while watching live streaming, consumers will automatically choose to watch live streaming when they want to buy goods. Accordingly, the following hypotheses are proposed：

H7: In the context of live commerce, online shopping habit is positively associated with customer repurchase intention.

2.4 Research method

2.4.1 Measurement development

In order to comprehend and assess the relationship between crucial structures, we exerted a survey method to verify the proposed research model. All the measurement items we selected were quoted from the literature. All constructed items were concerning live streaming to correspond to the setting of the research, which were translated in Chinese, back-translated into English, and then carefully inspected by the authors. Basically, owing to too many restrictions in

regard to 5-point Likert scales, we adopted 7-point Likert scales that may minimize inaccuracy and provide more options for respondents with less skewed distribution (Burns & Bush,2000).All variables were manipulated using 7-point Likert scales that ranged from 1 (strongly disagree) to 7 (strongly agree).

2.4.2 Survey administration

Initially, live streaming platforms in China were selected as the target of the research. Data were collected among mobile internet users in China. We collected data that created the online questionnaire on Wenjuanxing, which is one of the most influential online survey platform in China(www.wjx.cn). Participants were asked to look back upon their most recent repurchase buying activity when they were watching live streaming. Accordingly, to assure that each respondent submitted only one response, we carefully selected the demographic information and Internet Protocol (IP) address of each participant. Since that, this online survey was conducted for a period of March and April, 2021. Ultimately, all participants were voluntary for this survey and 502 responses were received in the aggregate. Among them, 50 were deleted due to lack of repurchase buying experience while watching live streaming, 452 valid responses were obtained for the final data analysis. Tab. 2-1 shows the demographic profile of the respondents.

Table 2-1 Demographic profile of the Respondents

Demographic	Frequency	Percentage (%)
Gender		
Male	256	51%
Female	246	49%
Age range		
Below 20	120	23.9%
21-30	146	29.08%
31-40	121	24.1%
Above 40	115	22.91%
Educational level		
High school or below	130	25.9%
Junior college	132	26.29%
University	111	22.11%
Master's degree or higher	129	25.7%
Disposable monthly income in RMB		
Below 5000	167	33.27%
5000-10000	169	33.67%

Above 10000	166	33.07%
Occupation		
Student	76	15.14%
Government	78	15.54%
Manufacturing	92	18.33%
Enterprise staff	76	15.14%
Freelance	81	16.14%
Others	99	19.72%
How often do you watch live streaming in a week		
1-2	130	25.9%
3-6	136	27.09%
7-10	112	22.31%
Above 11	124	24.7%
Live streaming experience		
Below 3 months	109	21.71%
3-6 months	127	25.3%
6-12 months	137	27.29%
Above 1 year	126	25.7%
The total number of times you have purchased products while watching live streaming		
Once or not	50	9.96%
2 times or more	452	90.04%

There are 256 male respondents, accounting for 51% of the total; There are 246 female respondents, accounting for 49% of the total respondents; From the survey results, the number of male respondents is slightly larger than that of females, indicating that there is no significant gender bias in the behavior of consumers watching live streaming. Both male and female consumers are their obvious audiences. The respondents under the age of 40 accounted for 77.08%, indicating that at this stage, the largest audience of the “live streaming” model is still young people, which is in line with the reality and they have a high degree of curiosity and acceptance of new things. From the results of occupational statistics, the overall occupational structure is relatively reasonable. It can be seen that most of the survey groups have stable jobs and guaranteed income, and they have strong purchasing power, so they constitute the basis for watching live streaming and the main force of consumption. From the historical situation of watching live streaming, 78.29% of the respondents have watched live streaming for more than three months. Therefore, most of the respondents in this survey started to watch the live streaming earlier and knew more about the live commerce. And 74.1% of the people watch e-commerce

shopping live streaming more than three times a week, which shows that the e-commerce shopping live streaming mode has gradually become an important part of Chinese consumers' choice to buy.

From these demographic respondents, we believe that our sample represents the mobile shopper population who go online shopping while watching live streaming in China.

2.5 Data analysis and results

2.5.1 Testing the measurement model

We selected STATA to analyze the data. Because it did not conduct normal distribution, partial least squares (PLS) as the best-recommended approach in exploratory studies, following the guidelines of Hair et al. (2017), which is employed to assess the measurement and structural models was performed separately.

In the light of the science-led two-step approach by Anderson and Gerbing (1988), we first examined a reliability test in order to verify the reliability and consistency of the questionnaire data, and then performed confirmatory factor analysis on the structural model by analyzing internal consistency reliability, convergent validity and discriminant validity.

Following the results from tab. 2-2 and 2-3, composite reliability (CR) and the Cronbach's alpha (a) coefficients of all variables exceed the criterial value of 0.7, indicating that the measurement model exhibited an adequate level of reliability. As tab. 2-2 reports, AVE ranges from 0.682 to 0.824, inferring that the square root of AVE for a construct is more than its correlations which correspond to the correlation between factors. It can be achieved on the basis of the above findings that the discriminant validity of each factor is sufficient at the level of compliance. Due to the acceptable validity and adequate reliability, we can make further efforts to inspect the research hypothesis by fitting the structural model we have proposed the model in the process of live streaming.

Table 2-2 Results of Reliability and Validity Analysis

Constructs	Indicators	Factor loadings	Composite reliability (CR)	Average variance extracted (AVE)	Cronbach's alpha (a)
Perceived interactivity (PI)	PI1	0.836	0.768	0.682	0.739
	PI2	0.783			
	PI3	0.783			
	PI4	0.836			
	PI5	0.686			
Promotional activities (PA)	PA1	0.847	0.793	0.729	0.711
	PA2	0.775			
	PA3	0.745			
	PA4	0.844			
	PA5	0.831			
Perceived value (PV)	PV1	0.759	0.811	0.792	0.722
	PV2	0.799			
	PV3	0.816			
	PV4	0.829			
	PV5	0.794			
	PV6	0.844			
	PV7	0.866			
High quality content (HQC)	HQC 1	0.764	0.701	0.692	0.751
	HQC 2	0.787			
	HQC 3	0.851			
Customer trust (CT)	CT 1	0.786	0.792	0.782	0.729
	CT 2	0.86			
	CT 3	0.744			
	CT 4	0.753			
	CT 5	0.796			
	CT 6	0.793			
Online shopping habits (OSH)	OSH 1	0.786	0.701	0.763	0.702
	OSH 2	0.909			
	OSH 3	0.867			
	OSH 4	0.734			
Customer satisfaction (CS)	CS 1	0.833	0.723	0.721	0.791
	CS 2	0.84			
	CS 3	0.777			
	CS 4	0.715			
Repurchase intention (RI)	RI 1	0.846	0.713	0.824	0.793
	RI 2	0.835			
	RI 3	0.701			
	RI 4	0.649			

Table 2-3 Result of discriminant validity measures

Latent Variable	PI	PA	PV	HQC	CT	OSH	CS	RI
PI	0.826							
PA	0.151	0.854						
PV	0.171	0.119	0.890					
HQC	0.122	0.206	0.233	0.832				
CT	0.210	0.199	0.103	0.190	0.884			
OSH	0.110	0.299	0.103	0.109	0.100	0.873		
CS	0.226	0.111	0.111	0.204	0.141	0.241	0.849	
RI	0.244	0.172	0.205	0.195	0.201	0.101	0.209	0.908

Table 2-4 Results of the structural equation model and hypothesis Testing

Hypothesis	Path	Coefficient	t	P	Test restlts
H1	PI ->RI	-0. 0439681	-0.87	0.382	NO
H2	PA -> RI	0.0778637	1.57	0.117	NO
H3	PV -> RI	-0.0045007	-0.07	0.941	NO
H4	HQC ->RI	0.0792077	2.06	0.040	YES
H5	CT ->RI	0.0247484	0.45	0.652	NO
H6	CS -> RI	0.1004835	2.31	0.021	YES
H7	OSH -> RI	0.0190643	0.40	0.691	NO

2.5.2 The structural model

Table 2-4 presents the results of the structural model testing such as path coefficients, std.err, T-value and p-value. The test results of H1-H7 are consistent with the hypotheses, which reveals that repurchase intention is dependent on many factors including customer satisfaction (β=0.100;$p < 0.05$) and high quality content (β=0.079;$p < 0.05$). By comparison, the relationships between perceived interactivity, promotional activities, perceived value, customer trust, online shopping habits and repurchase intention are proved to be insignificant, thus H1,H2,H3,H5 and H7 are rejected.

2.5.3 Multi-group analysis

Therefore, we have further attempted to explore the influence path of repurchase intention among different demographic elements (i.e. gender, age, education, disposable monthly income，occupation, and history of watching live streaming. The following tablesdemonstrate that the results with the significance of the investigated variables and multi-group analysis. On account of our analysis of previous studies and the characteristics of Chinese consumers, 452 valid samples in this study were divided into different related groups according to gender, age, educational level, disposable monthly income occupation, frequency of watching live streaming and history of watching live streaming.

2.5.3.1 Effects of gender on repurchase intention

It is divided into male group and female group according to gender.

Table 2-5 Structural model analysis in groups with different gender on repurchase intention

	Model 1 (Male)	Model 2 (Female)	Model 3 (Female)
PI->RI	-0.173**	0.069	0.089
	(-2.3)	(1.02)	(036.)
PA->RI	0.111*	0.005	-0.090
	(1.69)	(0.08)	(-0.30)
PV->RI	0.073	-0.078	0.136
	(0.82)	(-0.92)	(0.45)
HQC->RI	0.047	0.116**	-0.192
	(0.88)	(2.13)	(-0.30)
CT->RI	0.054	0.013	-0.179
	(0.71)	(0.17)	(-0.06)
OSH->RI	-0.037	0.046	-0.068
	(-0.55)	(0.67)	(-0.27)
CS->RI	0.124**	0.073	-0.272
	(1.98)	(1.23)	(-1.27)
HQC*PI->RI			-0.006
			(-0.11)
HQC*PA->RI			0.022
			(0.32)
HQC*PV->RI			-0.048
			(-0.67)
HQC*CT->RI			0.005
			(0.08)

HQC*OSH->RI			0.025
			(0.42)
HQC*CS->RI			0.081*
			(1.65)
Observations	231	221	221
R^2	0.064	0.038	0.056

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction.
Notes:$^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

(1) Male group

As shown in tab. 2-5, perceived interactivity has a negative impact on repurchase intention in male group (β= −0.173; p < 0.05). Promotion (β= 0.111; p < 0.1) and customer satisfaction (β= 0.124; p < 0.05) have a positive impact on repurchase intention in male group. In the process of live streaming, the more interaction between the live streamer and male consumers, it will reduce the repeated purchase intention of male consumers. If male consumers can perceive more promotional activities and customer satisfaction, it can improve male consumers' willingness to repurchase.

（2）Female group

Figure 2-3 The partial effect of high quality content

Tab. 2-5 demonstrates high quality content has a positive impact on repurchase intention in female group (β= 0.116; p < 0.05). The variable of high quality content may rely on other variables. We select high quality content as a moderator in female group.

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8HQC*PI+\beta_9HQC*PA+\beta_{10}HQC*PV+\beta_{11}HQC*CT+\beta_{12}HQC*OSH+\beta_{13}HQC*CS \quad (2.1)$$

$$\text{The partial effect of } HQC=\beta_4+\beta_{13}CS=-0.192+0.081 \text{ customer satisfaction} \quad (2.2)$$

From the perspective of mathematics, the slope of customer satisfaction ×high quality content is calculated by formulas (2.1) and (2.2). Fig. 2-3 illustrates the partial effect of high quality content. When the level of customer satisfaction is low, the impact of customer satisfaction×high quality content on repurchase intention is negative. When the level of customer satisfaction is high, ranging from 3 points to 7 points, the impact of customer satisfaction ×high quality content on repurchase intention is positive in female group.

From the perspective of marketing, the interaction effect between high quality content and satisfaction on repurchase intention is almost significantly positive (β= 0.081; $p < 0.1$) in tab. 2-5, indicating that the relationship between satisfaction and repurchase intention is significantly stronger when content is high in comparison to when it is low in female group. The moderator high quality content can significantly strengthen the relationship between satisfaction and repurchase intention, and has a significant positive moderating effect in female group.

Compared with male consumers and female consumers, promotional activities and customer satisfaction can bring male consumers' repurchase intention in the process of live streaming, but too much interaction will not make male consumers have more repurchase intention. In the process of live streaming, the higher the quality of live streaming content, the more it can bring repurchase intention to female consumers, Meanwhile, high quality content plays a positive moderating role between customer satisfaction and repurchase intention.

2.5.3.2 Effects of age on repurchase intention

The age is divided into under 20 years old, 21-30 years old, 31-40 years old and over 40 years old. All the relationships are not significant in under 20 years old group and 21-30 years old group.

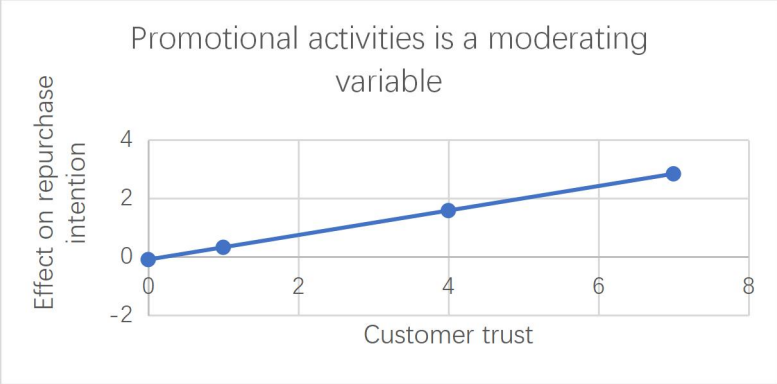
Table 2-6 Structural model analysis in groups with different age on repurchase intention

	Model 1 (31-40 years old)	Model 2 (31-40 years old)	Model 3 (Over 40 years old)	Model 4 (Over 40 years old)
PI->RI	-0.094	-0.095	-0.075	0.365
	(-0.83)	(-0.18)	(-0.67)	(0.83)
PA->RI	0.301***	-0.094	-0.099	-0.747**
	(2.75)	(-0.08)	(-0.94)	(-2.00)
PV->RI	-0.007	0.522	0.138	0.311
	(-0.06)	(0.85)	(1.11)	(0.71)
HQC->RI	-0.028	0.108	0.099	-0.852***
	(-0.37)	(0.26)	(1.24)	(-2.76)
CT->RI	-0.092	-1.736**	-0.0577	-0.145
	(-0.83)	(-2.51)	(-0.48)	(-0.30)
OSH->RI	0.131	0.244	-0.034	-0.285
	(1.25)	(0.51)	(-0.34)	(-0.74)
CS->RI	-0.002	0.483	0.181*	-1.246
	(-0.02)	(1.04)	(1.97)	(-1.31)
PA*PI->RI		-0.006		
		(-0.05)		
PA*PV->RI		-0.122		
		(-0.79)		
PA*HQC->RI		-0.038		
		(-0.38)		
PA*CT->RI		0.418**		
		(2.40)		
PA*OSH->RI		-0.021		
		(-0.18)		
PA*CS->RI		-0.119		0.169*
		(-1.04)		(1.94)
CS*PI->RI				-0.124
				(-1.18)
CS *HQC->RI				0.257***
				(3.30)
CS *CT->RI				0.002
				(0.02)
CS *PV->RI				-0.028
				(-0.27)
CS *OSH->RI				0.074
				(0.81)
Observations	111	111	108	108
R^2	0.089	0.153	0.077	0.228

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 2-4 The partial effect of promotional activities I



(1) 31-40 years old group

Tab. 2-6 demonstrates promotional activities has a positive impact on repurchase intention in 31-40 years old group (β= 0.301; $p < 0.05$). The variable of promotional activities may rely on other variables. We select promotional activities as a moderator in 31-40 years old group.

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8PA*PI+\beta_9PA*PV+\beta_{10}PA*HQC+\beta_{11}PA*CT+\beta_{12}PA*OSH+\beta_{13}PA*CS \quad (2.3)$$

$$\text{The partial effect of } PA=\beta_2+\beta_{11}CT=-0.094+0.418\text{customer trust} \quad (2.4)$$

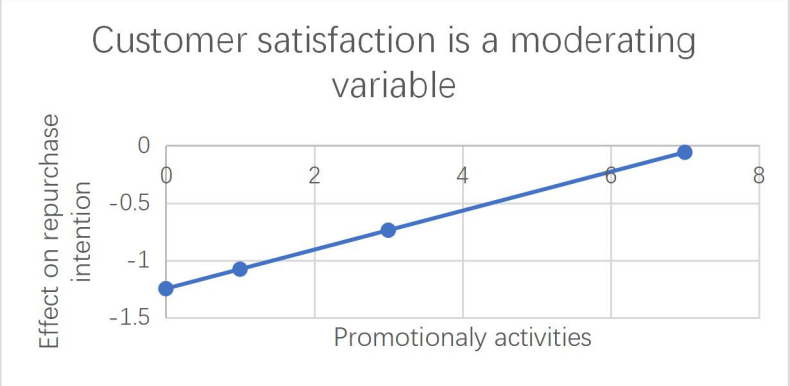
From the perspective of mathematics, the slope of promotional activities×customer trust is calculated by formulas (2.3) and (2.4). Fig. 2-4 illustrates the partial effect of promotional activities. When the level of customer trust is low, the impact of promotional activities×customer trust on repurchase intention is negative. When the level of customer trust is high, ranging from 1 point to 7 points, the impact of promotional activities×customer trust on repurchase intention is positive in 31-40 years old group.

From the perspective of marketing, after adding the corresponding interaction terms, trust has a negative impact on repurchase intention in 31-40 years old group (β= -1.736; $p < 0.05$). The interaction effect between promotion and trust on repurchase intention is significantly positive (β= 0.418; $p < 0.05$) in tab. 2-6, indicating that promotion weakens the negative impact of trust on repurchase intention. The moderator promotion can significantly weaken the relationship between trust and repurchase intention, and has a significant positive moderating effect in 31-40 years old group. When the level of promotional activities is high, it will inhibit the negative impact of customer trust on repurchase intention, and this significant negative impact relationship will decrease with the increase of the level of promotional activities.

(2)over 40 years old

Figure 2-5 The partial effect of customer satisfaction I

Figure 2-6 Figure The partial effect of customer satisfaction II



Tab. 2-6 demonstrates customer satisfaction has a positive impact on repurchase intention in over 40 years old group (β= 0.181; $p < 0.1$). We select customer satisfaction as a moderator in over 40 years old group.

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8CS*PI+\beta_9CS*PA+\beta_{10}CS*HQC+\beta_{11}CS*CT+\beta_{12}CS*PV+\beta_{13}CS*OSH \quad (2.5)$$

The partial effect of CS

$$=\beta_7+\beta_{10}HQC+\beta_9PA=-1.246+0.257\text{high quality content}+0.169\text{ promotional activities} \quad (2.6)$$

From the perspective of mathematics, the slope of high qualitycontent×customer satisfaction is calculated by formulas (2.5) and (2.6). Fig. 2-5 and 2-6 illustrate the partial effect of customer satisfaction. After adding the corresponding interaction terms, when the level of high quality content is very low, the impact of interaction term, that is, high quality content×customer satisfaction on repurchase intention is negative. When the level of high quality content is high ranging from 4 points to 7 points, the impact of interaction term, that is, high quality content and high quality content×customer satisfaction on repurchase intention is positive. With the level of

promotional activities ranging from 1 point to 7 points, the impact of interaction term, that is, high quality content and promotional activities×customer satisfaction on repurchase intention is negative.

As shown in tab. 2-6, the variable of high quality content has a negative impact on repurchase intention in over 40 years old group (β= -0.852; $p < 0.01$). Whether the live streaming content is of high quality will not cause consumers over the age of 40 to generate more repurchase intention. The interaction effect between high quality content and customer satisfaction on repurchase intention is significantly positive (β= 0.257; $p < 0.01$) in tab. 2-6, indicating that satisfaction weakens the negative impact of high quality content on repurchase intention. The moderator customer satisfaction can significantly weaken the negative relationship between high quality content and repurchase intention, and has a significant positive moderating effect in over 40 years old group. When the customer satisfaction level is high, it will inhibit the negative impact of high quality content on repurchase intention, and this significant negative impact relationship will decrease with the increase of customer satisfaction level. The interaction effect between promotional activities and customer satisfaction on repurchase intention is significantly positive (β= 0.169; $p < 0.1$) in tab. 2-6, indicating that customer satisfaction weakens the negative impact of promotional activities on repurchase intention. The moderator customer satisfaction can significantly weaken the negative relationship between promotional activities and repurchase intention, and has a significant positive moderating effect in over 40 years old group. When the satisfaction level is high, it will inhibit the negative impact of promotional activities on repurchase intention, and this significant negative impact relationship will decrease with the increase of satisfaction level.

Consumers are divided according to different ages. Promotional activities can bring repurchase intention to consumers aged 30-41 in the process of live streaming. Meanwhile, promotional activities play a positive moderating role between customer trust and repurchase intention. In the live streaming scenario， the higher the customer satisfaction perceived by consumers, the more likely it will bring repurchase intention to consumers over 40. Meanwhile, customer satisfaction plays a positive moderating role between high quality content and repurchase intention.

2.5.3.3 Effects of education on repurchase intention

According to the degree of education of consumers, they are divided into low education group and high education group. Those with beneath the bachelor-degree level are the low education group, and those with a bachelor's degree or above are the high education group.

Table 2-7 Structural model analysis in groups with different education on repurchase intention

	Model 1 (Low-education)	Model 2 (Low-education)	Model 3 (High-education)	Model 4 (High-education)
PI->RI	-0.115*	-0.675	0.076	0.017
	(-2.76)	(-0.94)	(1.04)	(0.07)
PA->RI	0.062	-0.106	0.066	-0.007
	(0.95)	(-0.35)	(0.93)	(-0.03)
PV->RI	0.011	0.263	-0.016	-0.041
	(0.14)	(0.64)	(-0.19)	(-0.14)
HQC->RI	0.022	-0.155	0.136**	-1.009
	(0.43)	(-0.65)	(2.47)	(-1.52)
CT->RI	0.064	-0.450	-0.031	-0.208
	(0.88)	(-1.41)	(-0.39)	(-0.75)
OSH->RI	0.034	-0.352	0.026	-0.399
	(0.56)	(-1.27)	(0.36)	(-1.50)
CS->RI	0.123**	0.577	0.073	-0.328
	(2.16)	(2.16)	(1.14)	(-1.51)
PI*PA->RI		0.042		
		(0.56)		
PI *PV->RI		-0.061		
		(-0.62)		
PI *HQC->RI		0.044		0.009
		(0.76)		(0.16)
PI *CT->RI		0.129*		
		(1.67)		
PI *OSH->RI		0.095		
		(1.38)		
PI *CS->RI		-0.112*		
		(-1.70)		
HQC *PA->RI				0.016
				(0.26)
HQC *PV->RI				0.013
				(0.18)
HQC *CT->RI				0.040
				(0.60)
HQC *OHS->RI				0.104
				(1.63)

HQC *CS->RI				0.099*
				(1.91)
Observations	238	238	214	214
R^2	0.049	0.075	0.046	0.076

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 2-7 The partial effect of perceived interactivity I

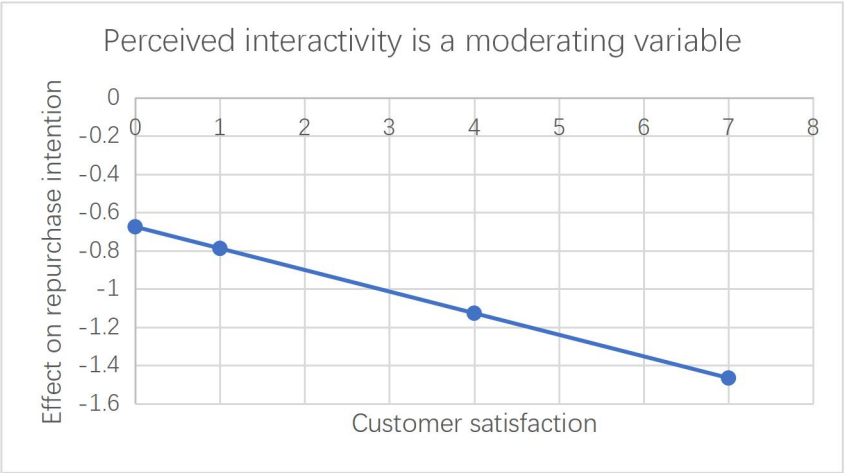
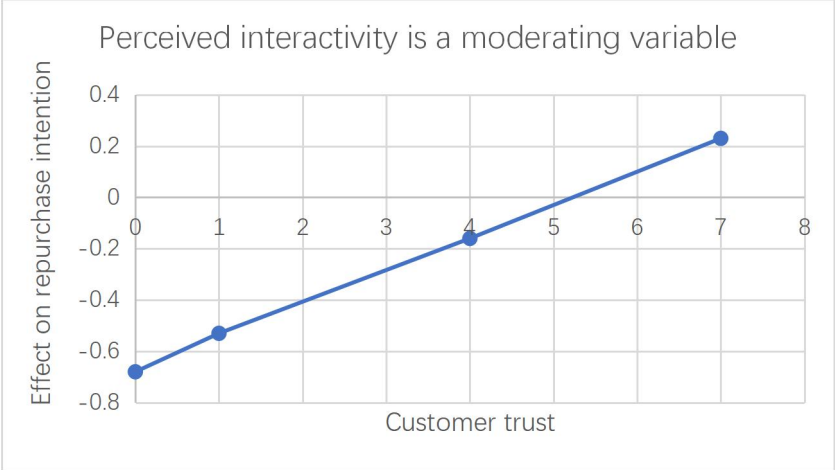


Figure 2-8 The partial effect of perceived interactivity II



(1) The low education group.

Tab. 2-7 demonstrates perceived interactivity has a negative impact on repurchase intention in the low education group ($\beta= 0.123$; $p < 0.05$). Although customer satisfaction has a positive impact on repurchase intention in the low education group ($\beta= 0.115$; $p < 0.05$), all the interaction terms are insignificant. We select perceived interactivity as a moderator in the low education group.

$$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 PI*PA+\beta_9 PI*PV+\beta_{10} PI*HQC+\beta_{11} PI$$

*CT+β_{12}PI*OSH+β_{13}PI*CS (2.7)

The partial effect of PI I

=β_1+β_{13}CS=-0.675+(-0.112)customer satisfaction (2.8)

The partial effect of PI II

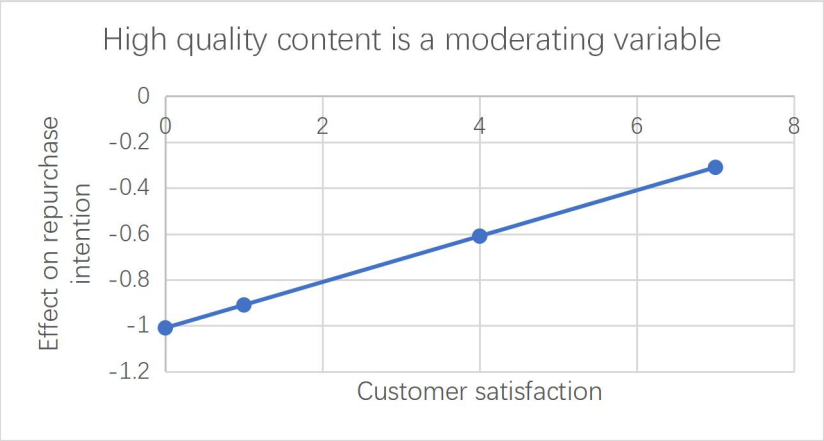
=β_1+β_{11}CT=-0.675+0.129customer trust (2.9)

From the perspective of mathematics, the slope of perceived interactivity×customer satisfaction is calculated by formulas (2.7) and (2.8). The slope of perceived interactivity×customer trust is calculated by formula (2.7) and (2.8). Fig. 2-7 and Fig. 2-8 illustrate the partial effect of customer satisfaction. After adding the corresponding interaction terms, with customer satisfaction ranging from 1 to 7, the impact of interaction term, that is, perceived interactivity×customer satisfaction on repurchase intention is negative. when the level of customer trust is very low, the impact of interaction term, that is, interactivity×customer satisfaction on repurchase intention is negative. When the level of customer trust is high ranging from 4 points to 7 points, the impact of interaction term, that is, perceived interactivity and customer trust on repurchase intention is positive.

After adding the corresponding interaction terms in the low education group, the regression coefficient of the interaction term “perceived interactivity×customer trust” is positively significant (β= 0.129; $p < 0.1$) in tab. 2-7, which indicates that perceived interactivity plays a moderating role between customer trust and repurchase intention. Satisfaction has a positive impact on repurchase intention in the low education group (β= 0.577; $p < 0.05$). Consumers with low education value customer satisfaction. The higher the level of customer satisfaction, the more repurchase intention they can produce. The interaction effect between perceived interactivity and customer satisfaction on repurchase intention is significantly negative (β=-0.112; $p < 0.1$), indicating that interactivity weakens the positive impact of satisfaction on repurchase intention. The moderator interactivity can significantly weaken the positive relationship between satisfaction and repurchase intention, and has a significant negative moderating effect in the low education group. When the interactivity level is high, it will weaken the positive impact of customer satisfaction on repurchase intention, and this significant positive impact relationship will increase with the decrease of interactivity level.

(2) The high education group

Figure 2-9 The partial effect of high quality content



Tab. 2-7 demonstrates high quality content has a positive impact on repurchase intention in the high education group (β= 0.136; $p < 0.05$). We select high quality content as a moderator in the high education group.

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8HQC*PI+\beta_9HQC*PA+\beta_{10}HQC*PV+\beta_{11}HQC*CT+\beta_{12}HQC*OSH+\beta_{13}HQC*CS \quad (2.10)$$

The partial effect of HQC

$$=\beta_4+\beta_{13}CS=-1.009+0.099\text{customer satisfaction} \quad (2.11)$$

From the perspective of mathematics, the slope of high quality content×customer satisfaction is calculated by formulas (2.10)-(2.11). Fig. 2-9 illustrates the partial effect of high quality content. After adding the corresponding interaction terms, with customer satisfaction ranging from 1 to 7, the impact of interaction term, that is, high quality content×customer satisfaction on repurchase intention is negative.

The interaction effect between content and customer satisfaction on repurchase intention is significantly positive in tab. 2-7 (β=0.099; $p < 0.1$), indicating that the relationship between customer satisfaction and repurchase intention is significantly stronger when high quality content is high in comparison to when it is low in the high education group. The moderator online quality content can significantly strengthen the relationship between customer satisfaction and repurchase intention, and has a significant positive moderating effect in the high education group.

Consumers are divided according to their level of education. Customer satisfaction can bring low educated consumers more intention to repurchase. In the process of live streaming, but too

much interaction will not make low educated consumers have more intention to repeat purchase. In the process of live streaming, the higher the quality of live streaming content, the more repurchase intention can be brought to highly educated consumers.

2.5.3.4 Effects of the monthly income on repurchase intention

According to the different monthly income levels of consumers, they are divided into groups with a monthly income of less than 5000 yuan ($780), groups with a monthly income of 5000-10000 yuan($780-$1560) and groups with a monthly income of more than 10000 yuan.

Table 2-8 Structural model analysis in groups with different monthly income on repurchase intention

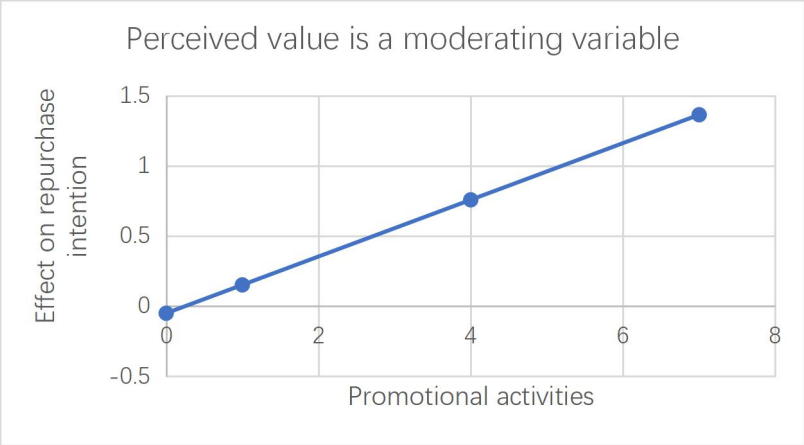
	Model 1 (< $780)	Model 2 (< $780)	Model 3 ($780-$1560)	Model 4 ($780-$1560)	Model 5 ($780-$1560)
PI->RI	0.081	0.846*	-0.144*	-0.910	0.402
	(0.89)	(1.70)	(-1.66)	(-0.79)	(1.18)
PA->RI	0.177**	-0.588	0.072	-0.857*	0.809*
	(2.16)	(-1.27)	(0.74)	(-1.84)	(1.76)
PV->RI	-0.167*	-0.049	0.021	-0.716	-0.385
	(-1.65)	(-0.04)	(0.18)	(-1.33)	(-0.81)
HQC->RI	0.028	0.039	0.130*	0.480	0.631
	(0.45)	(0.12)	(1.86)	(1.39)	(0.63)
CT->RI	0.179*	0.103	-0.076	0.051	0.061
	(1.87)	(0.20)	(-0.82)	(0.13)	(0.17)
OSH->RI	0.034	0.462	-0.001	-0.119	-0.275
	(0.44)	(1.14)	(-0.01)	(-0.30)	(-0.84)
CS->RI	0.135*	-0.181	0.049	0.526	-0.103
	(1.89)	(-0.42)	(0.65)	(1.54)	(-0.36)
PV*PI->RI		-0.197		0.168	
		(-1.59)		(1.34)	
PV*PA->RI		0.202*			
		(1.75)			
PV*HQC->RI		-0.005			0.096
		(-0.07)			(0.80)
PV*CT->RI		0.007			
		(0.006)			
PV*CS->RI		0.084			
		(0.77)			
PV*OHS->RI		-0.115			
		(-1.14)			
PI*PA->RI				0.235**	
				(2.00)	
PI*HQC->RI				-0.088	-0.138*
				(-1.06)	(-1.67)

PI*CT->RI				-0.027	
				(-0.28)	
PI*OSH->RI				0.029	
				(0.30)	
PI*CS->RI				-0.113	
				(-1.32)	
HQC*PA->RI					-0.168
					(-1.61)
HQC*CT->RI					-0.028
					(-0.35)
HQC*OSH->RI					0.070
					(0.88)
HQC*CS->RI					0.034
					(0.53)
Observations	155	155	148	148	148
R^2	0.097	0.135	0.053	0.136	0.098

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 2-10 The partial effect of perceived value



(1) The group with a monthly income of less than 5000 yuan ($780)

Tab. 2-8 demonstrates perceived value almost has a negative impact on repurchase intention in the group with a monthly income of less than 5000 yuan (β=-0.167). Although promotional activities (β= 0.177; p < 0.05), customer trust (β= 0.179; p < 0.1) and customer satisfaction (β= 0.135; p < 0.1) have positive impacts on repurchase intention in the group with a monthly income of less than 5000 yuan, all the interaction terms are insignificant. We select perceived value as a moderator in the group with a monthly income of less than 5000 yuan.

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8PV*PI+\beta_9PV*PA+\beta_{10}PV*HQC+\beta_{11}PV*CT+\beta_{12}PV*OSH+\beta_{13}PV*CS \quad (2.12)$$

The partial effect of PV

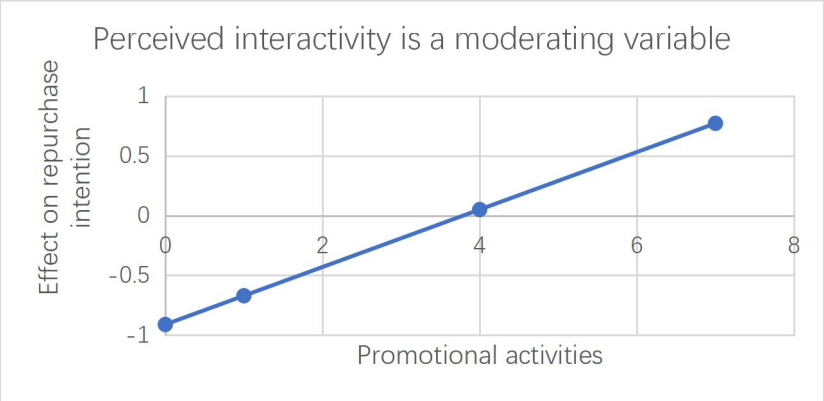
$=\beta_3+\beta_9 PA=-0.049+0.202$ promotional activities (2.13)

From the perspective of mathematics, the slope of perceived value×promotional activities is calculated by formulas (2.12)-(2.13). Fig. 2-10 illustrates the partial effect of perceived value. After adding the corresponding interaction terms, with promotional activities ranging from 1 to 7, the impact of interaction term, that is, perceived value×promotional activities on repurchase intention is positive.

Promotion as the main effect has a positive impact on repurchase intention in the group with a monthly income of less than 5000 yuan ($\beta= 0.177$; $p < 0.05$), indicating that low-income consumers prefer promotional activities in the live streaming process, which can generate repurchase intention. As shown in Tab. 2-8, the interaction effect between promotion and value on repurchase intention is significantly positive ($\beta= 0.202$; $p < 0.1$), indicating that interactivity reinforces the positive impact of value on repurchase intention. The moderator value can significantly reinforce the positive relationship between promotion and repurchase intention, and has a significant positive moderating effect in the group with a monthly income of less than 5000 yuan. When the perceived value level is high, it will strengthen the positive impact of promotion on repeat purchase intention, and this significant positive impact relationship will increase with the increase of perceived value level in the group with a monthly income of less than 5000 yuan.

(2) The group with a monthly income of 5000-10000 yuan ($780-$1560)

Figure 2-11 The partial effect of perceived interactivity



Tab. 2-8 demonstrates perceived interactivity almost has a negative impact on repurchase intention in the group with a monthly income of 5000-10000 yuan ($\beta= -0.144$). High quality content has a negative impact on repurchase intention in the group with a monthly income of

5000-10000 yuan (β=0.130; p < 0.1). We select customer satisfaction and high quality content as moderators in the group with a monthly income of 5000-10000 yuan.

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8PI*PA+\beta_9PI*PV+\beta_{10}PI*HQC+\beta_{11}PI*CT+\beta_{12}PI*OSH+\beta_{13}PI*CS \quad (2.14)$$

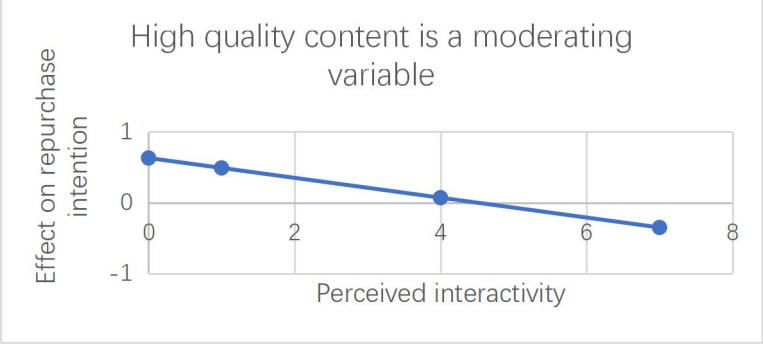
The partial effect of PI

$$=\beta_1+\beta_8PA=-0.910+0.235\text{promotional activities} \quad (2.15)$$

From the perspective of mathematics, the slope of perceived value×promotional activitiesis calculated by formulas (2.14) and (2.15). Fig. 2-11 illustrates the partial effect of perceived interactivity. After adding the corresponding interaction terms, when the level of promotional activities is very low, the impact of interaction term, that is, perceived interactivity×promotional activities on repurchase intention is negative. When the level of promotional activities is high, ranging from the average of 4 points to 7 points, the impact of interaction term, that is, perceived interactivity×promotional activities on repurchase intention is positive.

As shown in Tab. 2-8, promotion has a negative impact on repurchase intention in the group with a monthly income of 5000-10000 yuan (β= -0.857; p < 0.1). For middle-income consumers, promotion activities will not bring them repurchase intention in the process of live streaming. The interaction effect between interactivity and promotion on repurchase intention is significantly positive (β= 0.235; p < 0.05), indicating that interactivity weakens the negative impact of promotion on repurchase intention. The moderator interactivity can significantly weaken the negative relationship between promotion and repurchase intention, and has a significant positive moderating effect in the group with a monthly income of 5000-10000 yuan. When the interactivity level is high, it will weaken the negative impact of promotion on repeat purchase intention, and this significant negative impact relationship will decrease with the increase of interactivity level.

Figure 2-12 The partial effect of high quality content



$$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 HQC*PI+\beta_9 HQC*PA+\beta_{10} HQC*PV+\beta_{11} HQC*CT+\beta_{12} HQC*OSH+\beta_{13} HQC*CS \quad (2.16)$$

The partial effect of HQC

$$=\beta_4+\beta_8 PI=0.631+(-0.183) \text{ perceived interactivity} \quad (2.17)$$

From the perspective of mathematics, the slope of high quality content×perceived interactivity is calculated by formulas (2.16)-(2.17). Fig. 2-11 illustrates the partial effect of perceived value. After adding the corresponding interaction terms. When the level of perceived interactivity is very low, the impact of interaction term, that is, high quality content×perceived interactivity on repurchase intention is positive. When the level of perceived interactivity is high, the impact of interaction term, that is, high quality content×perceived interactivity on repurchase intention is negative.

Perceived interactivity has a negative impact on repurchase intention in 5000-10000yuan group in Tab. 2-8(β= -0.144; $p < 0.1$). For middle-income consumers, interaction will not bring them repurchase intention in the process of live streaming. As shown in tab. 2-8, the interaction effect between interactivity and content on repurchase intention is significantly negative (β=-0.138; $p < 0.1$), indicating that content reinforces the negative impact of interactivity on repurchase intention. The moderator content can significantly reinforce the negative relationship between interactivity and repurchase intention, and has a significant negative moderating effect in the group with a monthly income of $780-$1560. When the content level is high, it will strengthen the negative impact of interaction on repeat purchase intention, and this significant negative impact relationship will increase with the improvement of content level.

In the process of live streaming, promotional activities, perceived value, consumer trust, and consumer satisfaction can make low-income consumers have the intention of repurchase. The higher the quality of live streaming content, the more it can bring more repeated purchase intention to middle-income consumers. Too much interaction will not make middle-income consumers have repurchase intention.

2.5.3.5 Effects of the occupation on repurchase intention

According to the different occupations of consumers, they are divided into students, employees of government and public institutions, workers, enterprises, self-employed and others.

Table 2-9 Structural model analysis in groups with different occupations on repurchase intention

	Model 1 (Employees of gov)	Model 2 (Employees of gov)	Model 3 (Employees of gov)	Model4 (Employs of gov)	Model 5 (Workers)	Mode6 (Workers)	Model7 (White collar)	Model8 (White collar)
PI->RI	-0.143**	-0.697	-0.330	0.351	-0.238**	-1.736	-0.038	0.978
	(-2.10)	(-0.92)	(-1.01)	(1.20)	(-2.05)	(-1.32)	(-0.26)	(1.55)
PA->RI	0.131*	-0.064	-0.618	0.145	0.140	-0.414	0.110	0.538
	(1.88)	(-0.19)	(-0.71)	(0.50)	(1.29)	(-0.82)	(0.75)	(0.85)
PV->RI	-0.160*	0.215	-0.168	0.173	-0.190	-0.332	-0.169	0.881
	(-1.87)	(0.57)	(-0.43)	(0.50)	(-1.28)	(-0.44)	(-0.96)	(1.01)
HQC->RI	0.032	-0.171	0.037	-0.146	0.029	0.292	0.094	-0.498
	(0.65)	(-0.73)	(0.16)	(-0.73)	(0.31)	(0.61)	(0.95)	(-1.20)
CT->RI	0.043	-0.656**	-0.685*	-0.058	0.111	-0.957*	-0.272	-1.559**
	(0.56)	(-1.98)	(-1.69)	(-0.19)	(0.93)	(-1.85)	(-1.48)	(-2.28)
OSH->RI	-.0.012	-0.353	0.200	0.128	-0.124	-0.615	0.092	-0.070
	(-0.19)	(-1.15)	(0.71)	(0.49)	(-1.17)	(-1.32)	(0.64)	(-0.12)
CS->RI	0.157**	0.654**	0.135	0.864	0.206*	0.701	0.249*	0.450
	(2.58)	(2.37)	(0.48)	(1.09)	(1.96)	(1.40)	(1.96)	(0.27)
PI*PA->RI		0.047	0.051			0.137		
		(0.57)	(0.61)			(1.15)		
PI*PV->RI		-0.088				0.026		
		(-0.97)				(0.14)		
PI*HQC->RI		0,047				-0.083		
		(0.84)				(-0.70)		
PI*CT->RI		0.178**				0.287**		
		(2.23)				(2.22)		
PI*OSH->RI		0.085				0.135		
		(1.14)				(1.15)		
PI*CS->RI		-0.125*		-0.120*		-0.120		-0.234
		(-1.88)		(-1.74)		(-1.00)		(-1.63)
PA*PV->RI			0.000					
			(0.00)					
PA*HQC->RI			-0.002					
			(-0.04)					
PA*CT->RI			0.183*					
			(1.83)					
PA*OSH->RI			-0.053					
			(-0.76)					
PA*CS->RI			0.004	-0.005				-0.085
			(0.06)	(-0.07)				(-0.60)
CS*PV->RI				-0.080				-0.233
				(-0.97)				(-1.18)
CS*HQC->RI				0.043				0.145

				(0.90)				(1.47)
CS*CT->RI				0.027				0.323*
				(0.37)				(1.96)
CS*OSH->RI				-0.038				0.032
				(-0.60)				(0.25)
Obs	65	65	65	65	85	85	67	67
R^2	0.239	0.266	0.294	0.297	0.162	0.252	0.125	0.267

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction.

Notes:$^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

（1）The employees of government and public institutions group

Tab. 2-9 demonstrates perceived interactivity (β=-0.143; p < 0.05) and perceived value (β=-0.160; p <0.1) have a negative impact on repurchase intention in the employees of government and public institutions group. Promotional activities (β=0.131; p <0.1) and customer satisfaction (β=0.157; p <0.05) have a positive impact on repurchase intention in the employees of government and public institutions group. We select perceived interactivity, promotional activities and customer satisfaction as moderators in the employees of government and public institutions group.

Figure 2-13 The partial effect of perceived interactivity I

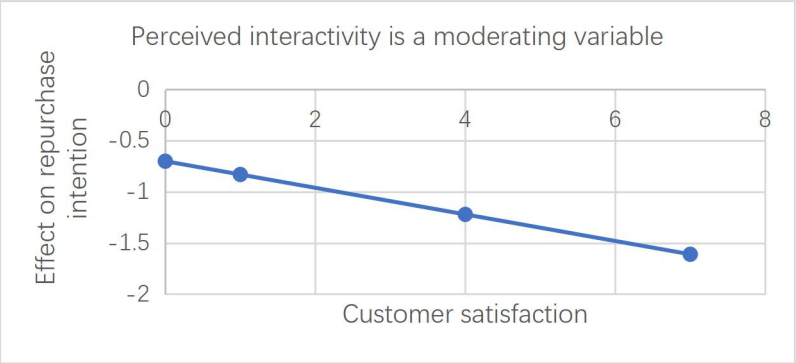
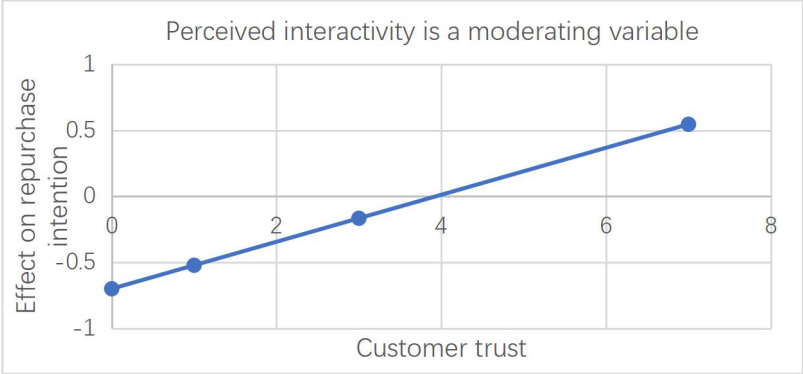


Figure 2-14 The partial effect of perceived interactivity II



$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 PI*PA+\beta_9 PI*PV+\beta_{10} PI*HQC+\beta_{11} PI$

*CT+β_{12}PI*OSH+β_{13}PI*CS (2.18)

The partial effect of PI Ⅰ

=β_1+β_{13}CS=-0.697+(-0.125) customer satisfaction (2.19)

The partial effect of PI Ⅱ

=β_1+β_{11}CT=-0.697 +0.178customer trust (2.20)

From the perspective of mathematics, the slopes of PI×CS and PI×CT are calculated by formulas (2.18) and (2.20). Fig. 2-13 illustrates the partial effect of perceived interactivity. After adding the corresponding interaction terms, with the level of customer satisfaction ranging from 1 point to 7 points, the impact of perceived interactivity×customer satisfaction on repurchase intention is negative. Fig. 2-14 illustrates the partial effect of perceived interactivity. After adding the corresponding interaction terms. When the level of customer trust is low, the impact of perceived interactivity×customer trust on repurchase intention is negative. When the level of customer trust is high 4 points to 7 points, the impact of perceived interactivity×customer trust on repurchase intention is positive.

As shown in Tab. 2-9, customer satisfaction has a positive impact on repurchase intention in the employees of government and public institutions group (β= 0.654; $p < 0.05$). For civil servants with fixed income, the improvement of customer satisfaction can bring them repurchase intention. The interaction effect between perceived interactivity and customer satisfaction on repurchase intention is significantly negative (β=-0.125; $p < 0.1$), indicating that perceived interactivity weakens the negative impact of satisfaction on repurchase intention. The moderator perceived interactivity can significantly weaken the negative relationship between customer satisfaction and repurchase intention, and has a significant positive moderating effect in employees of government and public institutions group. When the perceived interactivity level is high, it will weaken the positive impact of customer satisfaction on repurchase intention, and this significant positive impact relationship will decrease with the improvement of perceived interaction level. When the interactivity level is low, the positive impact of customer satisfaction on repurchase intention is enhanced in employees of government and public institutions group.

The interaction effect between perceived interactivity and customer trust on repurchase intention is significantly positive (β=0.088; $p< 0.05$), indicating that perceived interactivity

weakens the negative impact of satisfaction on repurchase intention. The moderator perceived interactivity can significantly weaken the negative relationship between customer trust and repurchase intention, and has a significant positive moderating effect in employees of government and public institutions group. When the perceived interactivity level is high, it will weaken the positive impact of customer trust on repurchase intention, and this significant negative impact relationship will decrease with the improvement of perceived interaction level. When the interactivity level is low, the positive impact of customer trust on repurchase intention is enhanced in employees of government and public institutions group.

Figure 2-15 The partial effect of promotional activities

$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8PA*PI+\beta_9PA*PV+\beta_{10}PA*HQC+\beta_{11}PA*CT+\beta_{12}PA*OSH+\beta_{13}PA*CS \quad (2.21)$$

The partial effect of PA

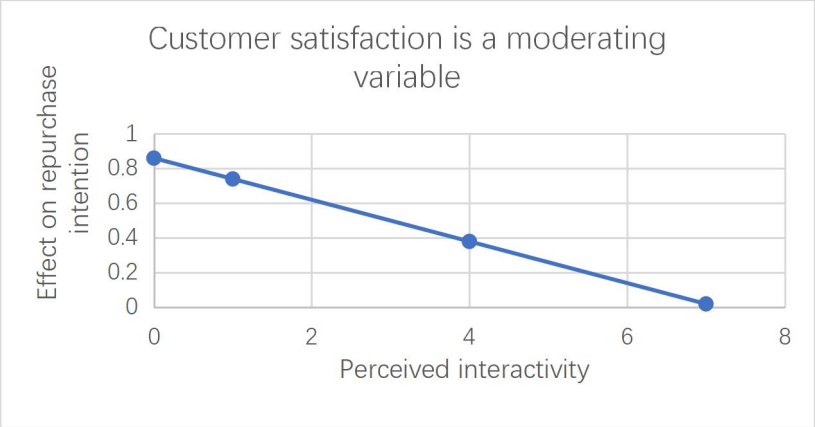
$$=\beta_2+\beta_{11}CT=-0.618+0.183\text{customer trust} \quad (2.22)$$

From the perspective of mathematics, the slope of perceived value×promotional activitiesis calculated by formulas (2.21) and (2.22). Fig. 2-15 illustrates the partial effect of perceived interactivity. When the level of customer trust is very low, the impact of interaction term, that is, customer trust×promotional activities on repurchase intention is negative. When the level of customer trust is high, ranging from 4 points to 7 points, the impact of interaction term, that is, customer trust×promotional activities on repurchase intention is positive.

As shown in Tab. 2-9, customer trust has a negative impact on repurchase intention in employees of government and public institutions group (β= -0.685; $p < 0.1$). For civil servants with fixed income, the improvement of customer trust can not bring them repurchase intention. The interaction effect between promotional activities and customer trust on repurchase intention is significantly positive (β= 0.183; $p < 0.1$), indicating that promotional activities weaken the

negative impact of customer trust on repurchase intention. The moderator promotional activities can significantly weaken the negative relationship between customer trust and repurchase intention, and has a significant positive moderating effect in the employees of government and public institutions group. When the level of promotional activities is high, it will weaken the negative impact of customer trust on repurchase intention, and this significant negative impact relationship will decrease with the improvement of promotional activities level.

Figure 2-16 The partial effect of customer satisfaction



$$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 CS*PI+\beta_9 CS*PA+\beta_{10} CS*PV+\beta_{11} CS*HQC+\beta_{12} CS*CT+\beta_{13} CS*OSH \quad (2.23)$$

The partial effect of CS

$$=\beta_7+\beta_8 PI=0.864+(-0.120) \text{ perceived interactivity} \quad (2.24)$$

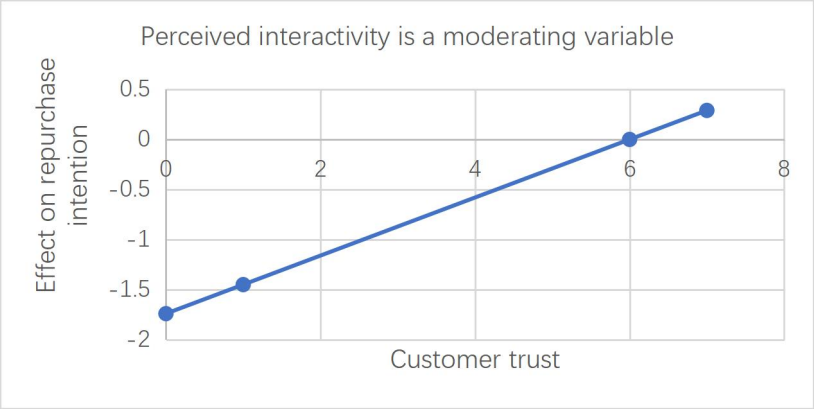
From the perspective of mathematics, the slope of perceived interactivity×customer satisfaction is calculated by formulas (2.23) and (2.24). Fig. 2-16 illustrates the partial effect of customer satisfaction. After adding the corresponding interaction terms, with the level of perceived interactivity ranging from 1 to 7, the impact of perceived interactivity×customer satisfaction on repurchase is positive.

As shown in Tab. 2-9, the interaction effect between perceived interactivity and customer satisfaction on repurchase intention is significantly negative (β=-0.120; $p < 0.1$), indicating that customer satisfaction weakens the negative impact of perceived interactivity on repurchase intention. The moderator customer satisfaction can significantly inhibit the negative relationship between perceived interactivity and repurchase intention, and has a significant negative moderating effect in the employees of government and public institutions group. When the level of

customer satisfaction is high, it will inhibit the negative impact of perceived interaction on repurchase intention, and this significant negative impact relationship will decrease with the improvement of customer satisfaction level.

（2）The workers group

Figure 2-17 The partial effect of perceived interactivity



Tab. 2-9 demonstrates perceived interactivity has a negative impact on repurchase intention in the workers group (β=-0.238; $p < 0.05$). Although customer satisfaction has a positive impact on repurchase intention in the workers group (β=0.206; $p<0.1$), all the interaction terms are insignificant. We select perceived interactivity as a moderator in the low education group.

$$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 PA*PI+\beta_9 PI*PV+\beta_{10} PI*HQC+\beta_{11} PI*CT+\beta_{12} PI*OSH+\beta_{13} PI*CS \quad (2.25)$$

The partial effect of PI

$$=\beta_1+\beta_{11} CT=-1.736+0.287\text{customer trust} \quad (2.26)$$

From the perspective of mathematics, the slope of customer trust×perceived interactivity is calculated by formulas (2.25) and (2.26). Fig. 2-17 illustrates the partial effect of perceived interactivity. After adding the corresponding interaction terms, when the level of customer trust is very low, the impact of interaction term, that is, perceived interactivity×customer trust on repurchase intention is negative. When the level of customer trust is very high, the impact of interaction term, that is, perceived interactivity×customer trust on repurchase intention is positive.

As shown in Tab. 2-9, customer trust has a negative impact on repurchase intention in workers group (β= -0.957; $p < 0.1$). For company employees, the improvement of customer trust can not bring them more repurchase intention. The interaction effect between perceived interactivity and customer trust on repurchase intention is significantly positive (β=0.287; $p<0.05$),

indicating that interaction weakens the negative impact of customer trust on repurchase intention. The moderator perceived interactivity can significantly weaken the negative relationship between customer trust and repurchase intention, and has a significant positive moderating effect in workers group. When the level of perceived interactivity is high, it will weaken the negative impact of customer trust on repurchase intention, and this significant negative impact relationship will decrease with the increase of perceived interactivity level. When the interactivity level is low, it can enhance the negative impact of customer trust on repurchase intention in workers group.

(3) The enterprises group

Figure 2-18 The partial effect of customer satisfaction

Tab. 2-9 demonstrates customer satisfaction (β=0.249; p <0.1) has a positive impact on repurchase intention in the enterprises group. We select customer satisfaction as moderators in the enterprises group.

$$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 CS*PI+\beta_9 CS*PA+\beta_{10} CS*PV+\beta_{11} CS*HQC+\beta_{12} CS*OSH+\beta_{13} CS*CT \quad (2.27)$$

The partial effect of CS

$$=\beta_7+\beta_{13}\, CT=0.450+0.323 \text{customer trust} \quad (2.28)$$

From the perspective of mathematics, the slope of customer trust×customer satisfaction is calculated by formulas (2.27) and (2.28). Tab. 2-18 illustrates the partial effect of customer satisfaction.After adding the corresponding interaction terms, with the level of customer trust ranging from 1 point to 7 points, the impact of customer trust×customer satisfaction on repurchase intention is positive.

As shown in Tab. 2-9, customer trust has a negative impact on repurchase intention in the enterprises group (β= -1.559; p < 0.05). For company employees, the improvement of customer trust can not bring them more repurchase intention. The interaction effect between customer

satisfaction and customer trust on repurchase intention is significantly positive (β=0.323; p<0.1), indicating that customer satisfaction weakens the negative impact of customer trust on repurchase intention. The moderator customer satisfaction can significantly weaken the negative relationship between customer trust and repurchase intention, and has a significant positive moderating effect in the enterprises group. When the customer satisfaction level is high, it will weaken the negative impact of customer trust on repeat purchase intention, and this significant negative impact relationship will decrease with the increase of customer satisfaction level in the enterprises group.

2.5.3.6 Effects of history of watching live streaming on repurchase intention

According to the shopping history of watching the live streaming, it is divided into 3 months and below, 3 months - 6 months, 6 months - 1 year, 1 year and above.

Table 2-10 Structural model analysis in groups with different shopping history on repurchase intention

	Model 1 (<3 months)	Model 2 (<3 months)	Model 3 (>1 year)	Model 4 (>1 year)
PI->RI	-0.070	0.361	-0.048	0.177
	(-0.76)	(0.77)	(-0.47)	(0.32)
PA->RI	-0.034	-0.352	0.275***	-0.066
	(-0.37)	(-0.86)	(2.74)	(-0.05)
PV->RI	-0.185	-0.734	0.003	0.438
	(-1.39)	(-1.40)	(0.03)	(0.79)
HQC->RI	0.195***	-0.165	0.065	-0.261
	(2.69)	(-0.55)	(0.87)	(-0.71)
CT->RI	-0.011	1.403***	-0.116	-1.317
	(-0.11)	(3.10)	(-1.10)	(-2.13)
OSH->RI	0.074	-0.372	-0.127	0.134
	(0.88)	(-1.02)	(-1.37)	(0.31)
CS->RI	0.270***	0.408	0.097	0.401
	(3.12)	(0.36)	(1.13)	(1.00)
CS*PI->RI		-0.086		
		(-0.83)		
CS*PA->RI		0.062		-0.711
		(0.63)		(-0.75)
CS*HQC->RI		0.082		
		(1.10)		
CS*CT->RI		-0.324***		
		(-3.11)		
CS*PV->RI		0.131		
		(0.98)		
CS*OSH->RI		0.099		

(1.16)

PA*PI->RI				-0.050
				(-0.38)
PA*PV->RI				-0.094
				(-0.75)
PA*HQC->RI				0.074
				(0.86)
PA*CT->RI				0.290*
				(1.94)
PA*OSH->RI				-0.060
				(-0.58)
Observations	98	98	113	113
R^2	0.152	0.277	0.108	0.159

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction.
Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 2-19 The partial effect of customer satisfaction

$$RI=\alpha+\beta_1 PI+\beta_2 PA+\beta_3 PV\beta_4 HQC+\beta_5 CT+\beta_6 OSH+\beta_7 CS+\beta_8 CS*PI+\beta_9 CS*PA+\beta_{10} CS*PV+\beta_{11} CS*CT+\beta_{12} CS*OSH+\beta_{13} CS*HQC \quad (2.29)$$

The partial effect of CS

$$=\beta_7+\beta_{11}\ CT=0.408+(-0.324)\ \text{customer trust} \quad (2.30)$$

(1) The group under three months

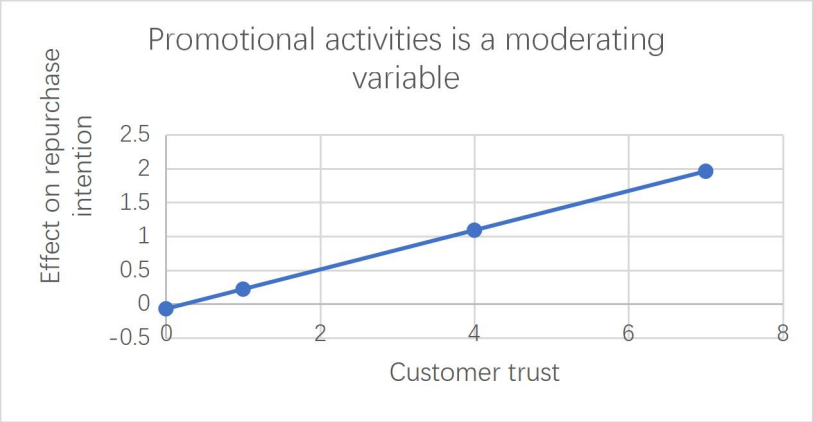
Tab. 2-10 demonstrates customer satisfaction (β=0.270; p <0.01) has a positive impact on repurchase intention in the group under three months. Although high quality content has a positive impact on repurchase intention (β= 0. 195; p<0.1), all the interaction terms are insignificant. We select customer satisfaction as a moderator in the group with watching live streaming under three months.

From the perspective of mathematics, the slope of customer trust×customer satisfaction is calculated by formulas (2.29) and (2.30). Fig. 2-19 illustrates the partial effect of customer satisfaction. After adding the corresponding interaction terms, when the level of customer trust is very low, the impact of customer trust×customer satisfaction on repurchase intention is positive. When the level of customer trust is high, ranging from 2 points to 7 points, the impact of customer trust×customer satisfaction on repurchase intention is negative.

As shown in Tab. 2-10, customer trust has a positive impact on repurchase intention (β= 1.403; $p < 0.01$) in the group that has watched the live streaming for less than three months. For consumers who have watched the live streaming for less than three months, the improvement of customer trust can bring them more repurchase intention. The interaction effect between customer satisfaction and trust on repurchase intention is significantly negative (β=-0.324; $p<0.01$), indicating that customer satisfaction weakens the positive impact of customer trust on repurchase intention. The moderator customer satisfaction can significantly weaken the positive relationship between trust and repurchase intention, and has a significant positive moderating effect in the group that has watched the live streaming for less than three months. When the level of customer satisfaction is high, it will weaken the positive impact of customer trust on repeat purchase intention, and this significant positive impact relationship will decrease with the increase of the level of customer satisfaction in the group with watching live streaming under three months.

(2) The group that have watched live streaming for more than one year

Figure 2-20 The partial effect of promotional activities



$$RI=\alpha+\beta_1PI+\beta_2PA+\beta_3PV\beta_4HQC+\beta_5CT+\beta_6OSH+\beta_7CS+\beta_8PA*PI+\beta_9PA*PV+\beta_{10}PA*HQC+\beta_{11}PA*CT+\beta_{12}PA*OSH+\beta_{13}PA*CS \quad (2.31)$$

The partial effect of PA

$=\beta_2+\beta_{11}$customer trust=-0.066+0.290customer trust (2.32)

Tab. 2-10 demonstrates promotional activities (β=0.275; p <0.01) has a positive impact on repurchase intention in the group that have watched live streaming for more than one year. We select promotional activities as a moderator in the group more than one year.

From the perspective of mathematics, the slope of perceived value×promotional activitiesis calculated by formulas (2.31) and (2.32). Fig. 2-20 illustrates the partial effect of perceived interactivity. After adding the corresponding interaction terms, with the level of customer trust ranging from 1 point to 7 points, the impact of promotional activities×customer trust on repurchase intention is positive.

As shown in Tab. 2-10, customer trust has a negative impact on repurchase intention (β= -1.317; $p < 0.05$) in the group that has watched the live streaming for more than one year. For consumers who have watched the live broadcast for more than one year, the improvement of customer trust can not bring them more repurchase intention. The interaction effect between promotional activities and customer trust on repurchase intention is significantly negative (β=0. 290; $p < 0.1$), indicating that promotional activities weaken the negative impact of customer trust on repurchase intention. The moderator promotional activities can significantly weaken the negative relationship between customer trust and repurchase intention, and has a significant positive moderating effect in the group that has watched the live streaming for more than one year. When the level of promotional activities is high, it will weaken the negative impact of customer trust on repeat purchase intention, and this significant negative impact relationship will decrease with the improvement of the level of promotional activities.

2.6 Discussion

The proposed conceptual model aims to expand knowledge and add value both theory and practice on how to influence repurchase intention in the context of live streaming. Furthermore, on account of our analysis of previous studies and the characteristics of Chinese consumers in the context of live streaming, we propose the following six demographic variables: gender, age, education, monthly income, occupation, history of watching live streaming. The analysis results of the multi-group reveal that the influence path of repurchase intention are corresponding

moderating effect are more evident for particular demographic variables in the process of live streaming.

2.6.1 Implications for theory and research

In terms of negative impact of perceived interactivity on repurchase intention, the effects are significant in the male group (β= -0.174; $p < 0.05$), the group with a low level of education (β=-0.115; $p < 0.1$), the middle income group(β=-0.145; $p < 0.1$), the group with employees of government and public institutions （β=-0.143; $p < 0.05$）and the group with workers (β=-0.239; $p < 0.05$). While the other groups are not significant.The more interactivity, the less it can cause the repurchase intention of these groups. In the process of live streaming, if it is not effective interaction, it may be a waste of time for consumers. Everyone has to wait for the ineffective interaction to enter the introduction of products they are interested in.

According to the assumption, the more timely and accurate the interaction between businesses and consumers on the live streaming platform, the easier consumers will have a good impression on the live broadcasting platform, the better consumers' overall consumption perception and evaluation of the live streaming platform, and the easier consumers will have repeated purchase intention.

In the context of live streaming, perceived interactivity has no significant impact on customer trust and consumers' repurchase intentions. There are two main reasons. On the one hand, the measurement of perceived interactivity in this paper is the intensity of perceptual interactivity, which does not distinguish the good from the bad. If online vendors want to make consumers satisfied, it should be that the stronger the good interaction is, the easier it is to generate repeated purchase intention. On the other hand, there are at least tens of thousands of people watching a live streaming in the same live streaming room. When consumers interact with the live streamer, if there are a lot of online viewers and questions, it is possible that the live streamer will not take care of every consumer watching the live streaming, resulting in many consumer problems can not be answered and solved on the spot, which makes consumers question the perceived interactivity. Therefore, when this paper does not make a distinction, consumers' perceived interactivity has no significant impact on customer trust and consumers' repeated purchase intention. This paper

argues that the data results do not support the explanation that interactivity has a positive effect on repurchase intention. However, it does not mean that interactivity has no effect on repurchase intention in the live streaming scenario. The future research should increase the sample data to cover more types of users, and further verify the relationship between perceived interactivity and repurchase intention.

In terms of positive impact of promotional activities on repurchase intention, the effects are significant in the male group (β=0.112; $p < 0.1$), the 31-40 years old group (β=0.302; $p < 0.01$), the low income group(β=0.178; $p < 0.05$), the group with employees of government and public institutions（β=0.131; $p < 0.1$）and the group with watching live streaming more than a year（β=0.275; $p < 0.01$）. While the other groups are not significant. The empirical result did match with the findings of Lynne Lee,Vincent Charles(2021).The results show that the greater the promotion efforts of the merchants on the live streaming platform, the better the overall trust of the consumers on the live streaming platform, which in turn stimulates customers' willingness to repeat purchases. Although the repurchase intention of promotional activities in live streaming is significant in some groups, the experimental data is particularly small. The main reason is that live streaming is different from traditional promotional activities. Consumers themselves know that there will be various promotional activities during the live streaming. It is cheaper to buy goods in the live streaming than usual. It just depends on whether the intensity of the promotion can meet the psychological expectations of consumers. Therefore, it is very necessary to carry out promotional activities that can attract consumers in the process of live streaming.

In terms of negative impact of perceived value on repurchase intention, the effects are significant in low-income group (β= -0.168; $p < 0.1$), and the group with employees of government and public institutions (β=-0.16; $p < 0.1$). While the other groups are not significant. When perceived value combines with promotional activities in low-income group, Promotional activities are easier for consumers to generate repurchase intention, accompanied by the improvement of perceived value.

Compared with quality, perceived value has the characteristics of individualism and personalization, so it is a higher-level concept than quality. Perceived value includes different dimensions (express service, perceived fairness, perceived sacrifice and perceived price) in the

process of live streaming. Thus, perceived value can be dubbed the consumers' assessment of the utility of a product, on that basis, they can receive and give up. For customers who purchase goods by watching live streaming, the minimum standard to meet their demands is that consumers have a stronger sense of acquisition through live streaming than traditional channels, otherwise they will think that it is not worthwhile to spend the cost of time, energy and money to switch channels.

The way consumers buy goods by watching live streaming is different from traditional shopping. Customer might want to have more detailed information and demonstration to help them to make repurchase decision during the live streaming. When the live streamer is in the process of live streaming, the more detailed and specific the introduction of the products to be displayed, and the real-time display and explanation can be carried out according to the requirements of consumers, high quality content has been known to influence repurchase intention positively. When the live streamer presents the product in the form of content marketing while live streaming, which not only fully displays the product but also gives consumers a richer viewing experience. Through mobile live shopping, it gives viewers a more realistic and higher sense of shopping. The provision of a wealth of consumption scenarios improves the sense of participation and satisfaction of consumers, which can make a good impression on customers, thereby increasing consumers' willingness to repeat purchases.

In terms of positive impact of high quality content on repurchase intention, the effects are significant in the female group ($\beta=0.117$; $p < 0.05$), the group with a high level of education ($\beta=0.136$; $p < 0.05$), the middle income group($\beta=0.131$; $p < 0.1$), and the group with watching live streaming less than 3 months（$\beta=0.131$; $p < 0.1$）. While the other groups are not significant.

Although one of the main purposes of the live streaming is to introduce goods， more and more fragmented information makes us browse information faster and faster, and unconsciously changes our attitude to obtain information. If there are no new ideas and highlights in the live streaming content, consumers may change the live streaming in 5 seconds. Through live streaming, live streamers can create content relevant to their own interests or a diversity of contents of live streaming, such as game, sport, news, performance and celebrity shows. This can also explain why Li Jiaqi, the first male live streaming of Taobao, continues to invite all kinds of celebrities to live together. Only in this way can we attract consumers' attention and will not be tired of the same live

content.

In terms of positive impact of perceived trust on repurchase intention, the effect is significant in low-income group (β=0.179; $p < 0.1$). While the other groups are not significant.

Lack of trust tends to hinder consumers from purchasing and leads them to abandon their shopping cart during trading online in the process of live streaming. Businesses often send a signal to consumers in the process of live streaming. The only purpose of live streaming is to serve their own interests, not to care about consumer satisfaction. Such negative signals are likely to reduce consumers' trust. It will even make consumers distrust live streaming. This can explain why consumer trust can positively affect repeat purchase intention only in low-income groups.

In terms of impact of online shopping habits on repurchase intention, all the effects are insignificant. Online shopping habits have become increasingly widespread in China. Businesses do not need to spend money, time and energy to cultivate customers' online shopping habits, which has become a normalcy in the Chinese market.

In terms of positive impact of high quality content on repurchase intention, the effects are significant in the male group (β=0.124; $p < 0.05$), the over 40 years old group (β=0.181; $p < 0.05$),the group with a low level of education (β=0.124; $p < 0.05$), the low income group(β=0.136; $p < 0.1$), the group with employees of government and public institutions(β=0.157; $p < 0.05$), workers(β=0.206; $p < 0.1$), enterprises(β=0.25; $p < 0.1$), and the group with watching live streaming less than 3 months（β=0.27; $p < 0.01$）. While the other groups are not significant.

From the results, we find that customer satisfaction is one of the most important factors affecting repurchase intention in the process of live streaming.

When we apply this mechanism to the context of live streaming shopping. The research results of this paper can prove that this mechanism is also applicable in the context of new live streaming shopping. This also reminds the majority of enterprises and merchants to pay minute attention to consumer satisfaction to continue to attract consumers to purchase regardless of the economic environment. Therefore, various factors that affect consumer satisfaction cannot be ignored in different situations.

2.6.2 Implications for practice

From a practical perspective, the results of this study are prominent that can help e-commerce companies to formulate targeted marketing strategies in the context of live streaming. According to the empirical results, there are several situation elements can be taken to better promote repurchase intention.

First, in the process of live streaming, merchants should lay emphasis on real-time interactive communication with consumers, lay stress on consumers' questions, communicate with them in a timely manner, and meet consumers' effective social needs. The higher the level of effective and benign interaction between businesses and consumers during the live streaming, the more they can gain the love and loyalty of consumers. While seeking more varied and extensive promotion methods to increase store traffic and promote repurchase, live streaming merchants should fully publicize the promotion activities before live streaming shopping, so that consumers can understand the promotion activities of live streaming, so as to attract consumers to watch live steaming to a certain extent.

Second, in order to improve the perceived value of consumers, we can start from four aspects, which are: perceived equity, perceived sacrifice, perceived price and express service. Live merchants should help consumers better perceive value by providing additional value and excellent service before, during and after the live streaming. For example, delivering effectively more outstanding customer experience than expected, providing specific information that may be helpful to customers, furnishing personalized special offers in order to exceed the expectation, and purveying timely and safe express delivery services, so as to enhance customers' repeat purchase. Live streaming merchants must attach great importance to the elaboration of live streaming content, and do not product it at will, stop crude make. As consumers become more mature and rational, future online vendors can no longer rely on some celebrated stars and internet celebrities to chat and can easily obtain revenue. The live streaming content will have to be carefully planned in advance. Therefore, through careful analysis of consumers' needs, live streaming merchants require to plan creative live broadcast content in the minutest detail. By providing a wealth of consumption scenes to carefully create the live well-scenes experience. Through high-quality content to improve customer participation and immersion, so as to realize consumer repeat

purchase.

With the development of the live streaming platform, the live streaming merchants draw consumers' additional attention by rolling out product, interacting positively with consumers, promoting preferential activities and creating high-quality live content， so live streaming marketing information surrounds consumers all the time which is being applied almost everywhere. Live commerce may have a profound influence to Chinese life, which makes Chinese customers trust the live streaming platform and products, leads to consumers' loyalty to the products and the live streaming platform, and makes consumers feel that only in this channel can I buy the products I am satisfied with, this further affects the willingness to repeat purchases. Therefore, in order to strengthen consumers' repurchase intention in the context of live streaming, we can process with enhancing consumer trust, that is, the trust of the live streaming platform and the trust of the product. Furthermore, it should be noted that the improvement of consumer trust is not only to strengthen the repurchase intention of existing consumers, but also to ensure the steady and continuous growth of new customers driven by existing customers. In the aspect of trust of live streaming platform, maintaining stable trust can maintain existing customers and develop new customers on this basis; in terms of product trust, only trustworthy products can maintain stable customers and develop new markets.

Through empirical research, this paper found that customer satisfaction is one of the most important factors affecting repurchase intention in the process of live streaming, so live streaming merchants can promote the occurrence of customer repeat purchase intention by improving customer satisfaction. The more satisfied consumers are with the goods and services they purchase by watching the live streaming, the more they can bring the repurchase rate of live streaming e-commerce companies. Consequently, live streaming merchants should lay emphasis on the improvement of satisfaction. Enterprises can drive loyalty by strengthening the virtuous circle of two-way satisfaction between employees and customers. The high-quality products recommended by the live streamers and favorable shopping experiences are the keys to improving consumer satisfaction. Online shopping habit is another factor which has been affirmed to have moderating effect on customers' repurchase intention by empirical research.

With the continuous strengthening of the dominant position of the mobile Internet and the

improvement of the contact-free phone payments, many Chinese consumers have cultivated the consumption habit of shopping on the mobile phone. The formation of the online shopping habit of these customers has a close relation to the marketing efforts of live streaming platform. Live streaming shopping platforms helps consumers make purchase decisions through interaction in real-time 。 Live merchants can make full use of resources to encourage consumers to use frequently and participate actively in this platform. Live streaming businesses do not need to spend money, time and energy to cultivate Chinese customer online shopping habits, which has become a normalcy in the Chinses market.

2.6.3 Limitations and suggestions for future research

There are some limitations interpreting the proposed research. First, the respondents were Chinese experienced online shoppers. Although this random sample is the appropriate representative of mobile users, it may not completely represent the characteristic of the whole population. Be discreet must be conducted when summarizing the results. Therefore, future studies can be collected data from different areas and countries so that we can make a more in-depth and detailed comparative analysis of the results and the current research.

Second, in the context of live commerce, the factors that affect consumers' repeat purchase behavior are not only complex but also extensive. This paper selects several influencing factors to conduct research which is somewhat one-sided. The impact of consumer repeat purchase behavior not only involves product attributes, brand attributes and seller attributes, but also involves the attributes of consumers themselves and the characteristics of live streaming platform, which are not considered in this paper. Therefore, the later research can further explore the influence of brand attributes, different product categories and live streaming attributes on consumers' repeat purchase behavior. For example, in the future research, we can consider the willingness to repeat purchase under a certain product category, and the difference between different product categories, or measure the impact of commodity categories on the willingness to repeat purchase by regulation effect.

Third, as we all know, the ultimate goal of enterprise marketing is to stimulate consumers' purchase behavior, but there is not an inevitable relationship between consumer' repurchase

intention and repeat purchase behavior. After the consumer' repurchase intention is formed, it is still unpredictable whether consumers will further adopt the final repeated purchase behavior, because the repeated purchase behavior is mainly affected by many potential factors. This study did not clearly indicate repurchase intention and actual purchase behavior. The transformation mechanism between the two is a major flaw in this study, and it is also a topic worthy of further study.

2.7 Conclusions

The COVID-19 pandemic has forced Chinese consumers to embrace significant changes in their shopping behaviors. It is believed that booming live streaming business will keep on going even in the post-pandemic era. Enterprises should also adjust their marketing strategies based on the current actual market conditions. Following the COVID-19 lockdown, it caused a large number of shops to close. Thanks to the flourishing live streaming business, many companies have avoided a worse slump amid the pandemic in 2020.

Fueled by the recent progresses of social networks and mobile technology, live commerce has gathered momentum for years, it has escalated for years, especially in the post pandemic era. How to improve the marketing of live streaming platform is increasingly a requirement and a focus of attention for online retailers. This study surveys the relationships between factors that prompt customer repurchase intention in live commerce within the context of China. Therefore, this study concludes that consumers' repurchase intention does not simply depend on such factors as promotional activities, perceived value and high-quality content. According to different classifications, the factors affecting consumers' repeated purchase intention are different among different groups. As expected, the effect of online shopping habits became insignificant. whereas promotional activities, perceived value, high quality content perceived trust and customer satisfaction are considered the major determinants of repurchase intention. Different groups have different emphasis of promotional activities, perceived value, high quality content perceived trust and customer satisfaction in the process of live streaming. When enterprises face different consumers in the process of live streaming, they need to select the best scheme and formulate corresponding marketing strategy. In sum, this study sheds light on how the relationship between

online buyer-seller and consumer decision-making can be enhanced that is conducive to help the social business platform to carry out better operation and marketing activities.

Chapter 3: Research on the internal mechanism of consumers' impulsive buying intention in the context of mobile live commerce

3.1 Introduction

3.1.1 Research background

3.1.1.1 Universalization in the era of Mobile Live Streaming

According to the 45th "Statistical Report on China's Internet Development Status"(short for SRCIDS) issued by China Internet Network Information Center (CNNIC) on April 28, 2020, the number of Internet users in China is 904 million, and the Internet penetration rate is 64.5%. The number of online shopping users reached 710 million. According to the SRCIDS, the transaction volume reached 10.63 trillion yuan in 2019 that rose by 16.5% per cent year-on-year. Among them, the number of users who make purchases through mobile client terminal reaches more than 600 million. That is, three out of every four Chinese who use mobile phones make online shopping through mobile client terminals. The huge number of Chinese netizens constitutes a huge and booming consumer market in China, and then has further established a solid and large enough user base for enhancing the viability and development of the digital economy.

An unexpected Covid-19 has brought the development of PC live streaming for many years to enter a new era, which spawned the thriving of mobile terminal live streaming. As people's consumption of content has transitioned from text to pictures and then to video, consumer terminals have also shifted from PC to mobile. In China, with the maturity of cloud computing, 5G, artificial intelligence and other technologies and the decrease of cost, since February 2020, more than 100 offline occupations have found new possibilities on live streaming. Alibaba’s “Taobao Economic Warm Report” data released on February 17, 2020. It shows that more than 30,000 people open new stores every day, and more than 100 offline occupations have livestreaming on Taobao since February. More than 500 real estate agencies sell houses through live streaming, 23 auto brands sell cars through livebroadcast, Xiaomi, Adidas and other brands have launched live marketing campaigns, stars hold live concerts... the mode of "Cloud Work" is becoming everyday tasks among Chinese young people. Millions of Chinese young people,

cooped up at home who watch the live streaming of “cloud jumping” to express their emotions in the short video platform like Tik Tok. Under adversity, tourist agencies launch “cloud tourism” through live streaming. Shopping malls have commenced in the live streaming mode of “cloud shopping”, In addition, real estate, automobile and other fields have been sold house and cars through livestreaming (Ali 2020). Under the influence of epidemic prevention and control and home isolation, mobile live streaming mode is rapidly applied in all walks of life in 2020.Regardless of age, background, gender and region, each of them has been popularized in different scenarios during this period. Mobile live streaming has become a new force sweeping the whole Chinese people.

In 2020, as the first year of nationwide outbreak streaming, it is of great significance of Chinese mobile e-commerce market. Taobao live launched market activities in T-mall on double eleven, 2020, which drew throngs of consumers in thrall to live streaming. The total transaction volume of Tmall double 11 global carnival season reached $78 billion yuan, more than 300 million consumers have watched live streaming on Taobao. Among them, the turnover of more than 30 Taobao live streaming rooms exceeded $15 million. Through years of sustained development, live commerce has gradually evolved from the original “elite live streaming” into universal live streaming. Live commerce is becoming a new growth point that will become a “standard configuration” for e-commerce, brands, and businesses.

3.1.1.2 Impulse consumption becomes a normalcy under mobile live streaming

According to the data of China Consumer Association, nearly 60% of users buy goods by watching live streaming because of cost effective. In other words, Users are often not demanding consumption, but impulsive consumption greedy for cheap. (Zongpo 2020)Impulse buying is an unplanned purchase behavior of consumers, but it is a consumer behavior expected by manufacturers and sellers. In the increasingly competitive market environment, stimulating consumers' impulse buying behavior has become an effective marketing strategy. Especially for retailers and e-commerce companies, impulse buying is the most important determinant of their sales revenue (S.H. Xiao and M. Nicholson, 2013). It shows that the impulse buying behavior of consumers is an essential business opportunity for sellers.

Since the realization of the first online transaction in March 1998, China has continued rapid

growth for nearly two decades. According to monitoring data from the China E-commerce Research Center, Chinese online sales reached $1.12 trillion in 2017, a growth compared with 2016. China has 533 million users who choose to shop online, an increase of 14.3% from 2016 and accounting for 69.1% of the total netizens. The transaction scale of China's mobile online shopping reached $797.3 billion, up 14.1% year on year compared with $698.8 billion in 2016. With the continuous upgrading of mobile payment technology and security, more and more Chinese consumers are inclined to mobile shopping. Chinese consumers who were accustomed to using computers for online shopping have transferred to mobile phones, tablets and other mobile terminals for online shopping. So far, more than 70% of urban consumers are using smartphones and 60% also using tablets for shopping online in China (Wu et al., 2014).

In the environment of mobile live streaming, consumers can leverage the fragmented time to watch live streaming anytime and anywhere which stimulate impulsive purchase intentions, and then impulsive purchase behaviors, making impulsive consumption become a normal state. Therefore, with the development and maturity of online shopping market, Consumers consume more and more through mobile shopping, and spend more and more, and impulse purchase behaviors account for an increasing proportion of online consumption. The exploration of impulsive buying behavior has become the main emphasis of research.

3.1.1.3 Mobile marketing incentives continue to enrich

Stimulus plays a crucial role in the impulse buying behavior of consumers. Consumers' shopping desires can often be stimulated and satisfied by events or mood changes at a certain moment. With the continuous development of mobile technology, online marketing stimuli increasingly reflects the characteristics of diversity and complexity. Communication, interaction and sharing in the mobile live streaming environment can provide consumers with richer marketing incentives. In addition to the traditional online marketing incentives, there are also social incentives. Such as social interaction and user-generated content (Li-Ting H 2016) can also boost consumers' impulse purchase. (Olbrich R, Holsing C.2011)

Traditional marketing stimuli consists of internal stimuli and external stimuli. The most common promotional incentives are direct product discounts, seasonal offers, clearance sale, everything must go, flash sale, free shipping, coupons, give vouchers, give gifts, return of goods

without reasons within 7 days and so on. Take the well-known Chinese Double Eleven shopping carnival as an example. In 2016, 2017, 2018 and 2019, T-mall Double Eleven had respectively 120.7 billion, 168.2 billion, 213.5 billion, and 268.4 billion transactions in the whole day of T-mall's double eleven. Among them, the transaction volume of mobile terminal is 62.6 billion, 98.8 billion, 151.3 billion and 182.5 billion respectively. It can confirm that promotion and stimulus have the profound impact on consumers' online shopping, and there are also an enormous number of impulsive buying behaviors in the increasing transaction volume. In addition, the promotional activities, video displays, and various interactions between the live streaming hosts and the consumers displayed on the page in the mobile live streaming will also stimulate the consumer's impulsive purchase intention, which will further lead to impulsive purchase behavior. Even some online reviews increase the two-way communication and multi-directional information dissemination channels between consumers through videos and instant conversations, which reduce the perceived risk of consumers' online shopping, generate super word-of-mouth marketing, what's more, trigger the occurrence of impulsive buying behavior.

3.1.2 Research purpose and significance

3.1.2.1 Research purpose

Through the analysis of the previous research background, it can be found that the impulsive behavior of consumers online shopping has become increasingly common in the context of mobile live streaming. It needs to bring to the certain amount of attention and worth mobile e-commerce merchants seizing market opportunities to boost sales in a time of global pandemic. To date, through many scholars' research on impulse purchase behavior of consumers, it is confirmed that there have been corresponding progress and remarkable achievements made from offline entity retail to online retail. However, there are still many gaps in the research on the relationship between consumers' impulsive buying behavior and the stimulating factors existing in the mobile terminal under the live streaming of mobile situation. On the basis of previous studies, this paper is devoted to analyzing the internal mechanism of consumer impulsive buying behavior in the context of mobile live commerce, and verifying it through empirical methods. Based on this, the research purpose of this paper mainly has the following two points:

（1）How does online promotion stimulation affect consumers' impulsive buying intention in the context of mobile live commerce

（2）How do customer trust affect impulsive buying intention in the context of mobile live commerce

3.1.2.2 Research significance

Based on the theoretical background and practical background, this paper mainly studies the online impulse buying behavior in the context of mobile live commerce. In China, the rapid development and popularization of mobile live commerce provide new channels for consumers to make online impulse purchases. According to the manifestation of consumers' impulse buying on the mobile live streaming platform, this paper studies the response of consumers to the marketing stimuli within the mobile terminal environment (e.g., discounts, coupons, flash sale and all kinds of incentives). The research in this paper is of great significance to the theoretical development of online impulse buying research. The conclusion of this paper can also help these enterprises better understand consumers' purchasing behavior within the new media environment, and take targeted measures to promote consumers' impulse buying, so as to improve the sales volume of enterprises and cope with the challenges of the pandemic. Specifically, the significance of this paper is mainly reflected in the following two aspects.

（1）Theoretical significance

To explore the influencing factors of mobile shopping consumers' impulsive buying behavior under the background of mobile live commerce, which makes the existing consumer impulsive buying theory more perfect. Starting from the mobile shopping environment, this paper will analyze the influencing factors of consumer mobile shopping on the basis of the analysis of existing traditional stores and online retail impulsive purchases, and will discuss based on various marketing stimulus factors on the mobile terminal, and selects and refines the representative influencing factors, and studies their impact on consumers of mobile live shopping. The impact of dynamic purchase is conducive to a better understanding of the impact of mobile live streaming situation. This paper studies and verifies the theoretical model of consumer impulse buying in the context of mobile live streaming, which expands the applicability of impulse buying theory, and provides a positive reference value for the effective development of online and offline marketing

activities of enterprises.

（2）Practical significance

Facing with more and more furious market competition, as the micro main body, the enterprises whether can make good use of the advantages of mobile sales channels by paying attention to the live streaming economy and the application of mobile Internet technology, motivate consumers' impulsive purchasing behavior through the cooperation of various relevant factors, so as to quickly expand the scope of the sales market, increase the sales performance of enterprises, and ultimately achieve the purpose of improving enterprise performance. This is very critical and has very important practical significance.

In the online environment, e-commerce companies stimulate consumers' perceived trust and impulsive purchase intentions through online promotion. It is also moderated by other variables, such as consumer trust, including trust in the live streaming platform and trust in the live streamer.

3.1.3 Research method

This paper is an empirical study of consumer behavior theory. In the context of mobile internet, taking the online shopping consumers watching live streaming as the research object. Taking different online promotion methods of e-commerce companies is the breakthrough point to study the impact on consumer trust and impulse buying intention. Thus, in the selection of specific research methods, through the preliminary exploratory research and combined with the analysis of existing literature to get the research variables, put forward the theoretical model of this study, and the final questionnaire is formed according to the existing more mature scale. The empirical data are obtained through online and offline approaches, and the multidisciplinary theories and methods such as management, marketing, statistics and consumer behavior are used for analysis. The methods involved in the research mainly include:

（1）Literature research

On the one hand, this paper summarizes and comments on the research status of consumer impulse buying behavior, perceived risk and promotion methods combed through the relevant literature. By that, the specific ideas, research hypotheses and theoretical models of this study are ascertained. On the other hand, the measurement tools, data processing procedures and methods of

this study are defined by combing the existing methods and tools of variable measurement.

（2）Questionnaire survey method

In marketing and consumer behavior research, the questionnaire method has always been the most common and mature research method, and it is also one of the most effective methods of quantitative analysis in various empirical studies. For the collection of empirical data, this study is mainly obtained through questionnaire surveys, which specifically include online questionnaires and offline questionnaires. In this thesis, quantitative data processing and analysis of the obtained data are carried out, quantitative data are collected for analysis, and the relationship between variables is explained to support the hypothetical model of this article. In specific operations, this study will carefully design questionnaire items, use scales reasonably, carefully select subjects, and strictly implement the normative requirements of the questionnaire survey method.

（3）Interview survey method

The research object of this study is online shopping consumers in the context of mobile live broadcast. In order to find out which factors play a key role and decisive role when online shopping consumers implement impulse buying behavior or generate impulse buying intention, how consumers react to the promotion activities of e-commerce enterprises, and how consumers view and deal with the possible risks and other issues. In order to obtain useful first-hand information, it is necessary to conduct in-depth interviews with consumers, to provide help for the design of research framework and experimental questionnaire, and to find new influencing factors or new variable relationships. When using the interview investigation method, the researcher will follow the rules of qualitative research, carefully prepare an interview outline, carefully select interview subjects, and make a profound summary of the interview results.

（4）Statistical analysis method

Stata data processing software is used in this study. After obtaining the data, the software is used to test and analyze the reliability, validity and consistency of the data, and the regression analysis of the relationship between variables is carried out according to the hypothesis to verify the model.

3.1.4 Innovation of research

This paper has been conducted a comparatively comprehensive and systematic research on the impulse buying intention of consumers in the mobile live commerce. The innovation of the research is mainly reflected in the following aspects:

（1）Research perspective innovation

As an emerging offspring and a new marketing mode of mobile network retailers, live commerce in the context of mobile shopping has become the normalcy that its development potential is inestimable, especially in the post pandemic era. Impulsiveness behavior has been investigated broadly in the past literature in both offline and online contexts，But empirical studies about the impact of impulse intention on mobile shopping (m-shopping) have just begun and are limited. There is less research on impulsive buying intention in the context of mobile live commerce.

（2）Innovation of research viewpoint

Based on the literature review and the S-O-R theory in consumer behavior, this paper constructs a mechanism model of “stimulus-response-willingness”. This paper deeply investigates and analyzes the behavior of consumers' impulsive purchase in the context of mobile live commerce, which abstracts the main dimensions of marketing stimulation factors that affect consumers' impulsive buying behavior in the context of mobile live broadcasting, namely time pressure and material stimulation. It better explains the mechanism of consumers' impulsive buying intention in the process of mobile live broadcasting which has a fairly good theoretical value and practical innovation both for academia and industry.

（3）Research on the innovation value of local innovation

First, on the basis of literature research and interviews, a model that affects consumers' impulsive buying behavior in the mobile live commerce scenario is constructed, and the corresponding variables are refined. Secondly, the relevant data is processed through STATA through analysis methods such as variable correlation analysis and regression analysis, and the analysis results are discussed and summarized. It can better explain the formation mechanism of consumer impulsive buying behavior in the mobile live commerce scenario.

3.2 literature review and theoretical basis

3.2.1 Research on mobile live commerce

3.2.1.1 Definition and development of live streaming and mobile live commerce

Early live streaming mainly refers to radio and television, which is defined by radio and television dictionary as a way of broadcasting in which radio and television simultaneously carry out later synthesis and broadcasting programs. Later, with the rapid popularization about the development of internet technology, webcasting has been gradually into public life. As a new form of communication. Webcast combines the advantages of mass communication and interpersonal communication. Mass communication has a wide audience, but one-way; interpersonal communication is two-way, but the audience is limited. The network live broadcasting integrates the advantages of the two kinds of communication, and forms a kind of communication which is oriented to the broad audience and interacts with the audience. Every change in the media will bring about a revolution, there is always a new civilization coming along. From traditional media such as newspapers to the rise of the internet, from the development of computer terminals to mobile terminals, and now to the emergence of live webcasts, a change in media will trigger a revolution in marketing.

Especially in 2016, Inke and Huajiao are China's earliest mobile phone live streaming apps' social media software. The "mobile live broadcast" represented by them is no longer limited to the need to have a computer for live streaming, but as long as there is a mobile phone and the network can watch the live streaming at anytime and anywhere. At present, the online media itself has not accurately summarized the definition of a unified webcast. In the "China Pan-entertainment Live Broadcasting Platform Development Report" released by iResearch in March 2017, the definition of online video live streaming is that users can make or watch live videos on the live streaming platform through the Internet, and create interactive services between viewers and live streaming parties. This definition mainly highlights the interactive characteristics of the live streaming. The mobile live streaming puts more emphasis on web live streaming on mobile terminals via the mobile Internet. Of course, unlike live TV broadcasts, mobile live streaming is beyond the boundaries of time, space, and professionalism. As long as they have a mobile phone, internet, and

time, anyone can live streaming it anytime, anywhere.

China Internet Network Information Center (CNNIC) released the 45th "Statistical Report on China's Internet Development Status". The data indicated that, the number of Chinese internet users was 904 million, the Internet penetration rate reached 64.5%, and the number of online shopping users in China reached 710 million ending March 2020. In 2019, the transaction volume reached 10.63 trillion yuan, a year-on-year increase of 16.5%. At the beginning of 2020, due to the impact of the coronavirus pandemic, the user scale of most network applications has increased significantly. As of March 2020, the number of mobile Internet users in China reached 897 million, an increase of 79.92 million from the end of 2018. The proportion of Chinese internet users using mobile phones to access the Internet reached 99.3%, an increase of 0.7 percentage points from the end of 2018. Mobile phones have become the main devices for people to access the Internet. Mobile live streaming is popular with people for its low threshold and strong interaction, and has a profound impact on people's life, work and study in China.

With the development of 4G and the arrival of 5G, mobile live streaming has come from scratch, and the form of live streaming content is not limited to indoor，along with rapid expansion during the pandemic. The substantial growth of mobile live streaming users further promotes the growth of mobile live streaming market scale. With the popularity of smart devices and mobile networks, the number of people surfing the Internet on mobile devices has also been on the rise. Online transactions have started to shift from personal computers to mobile devices, and as the number of mobile-commerce users gradually exceeds that of e-commerce users, mobile-commerce becomes mainstream. This has created a large number of mobile-commerce markets.

3.2.1.2 Characteristics of mobile live streaming

The rapid development of China's Internet has driven the development of social platforms, resulting in the emergence of many new jobs. For example, the Internet celebrity, the Internet writer, the WeChat's official account operator. There is no exception in the mobile live streaming industry. As mobile live streaming become more and more popular, live streamers who conduct live streaming on mobile live platforms have also emerged as the industry develops. The live streamer mainly attracts users of mobile live streaming and increases their popularity, so as to obtain more user rewards. As the most direct users of mobile live streaming, audiences have

different feelings and preferences for mobile live streaming. Audience and the live streamer are the two most important roles in mobile live streaming, and the relationship between them will also directly affect the development of the live streaming industry. Due to the diverse content of mobile live streaming, the types of live streamers present the characteristics of the diversification, then, which attract more and more move stars and Internet celebrities to join the industry, who interact with fans through live streaming to further broaden their appeals.

E-commerce, education, healthcare, finance, government and other industries can be well integrated with live streaming to obtain 1+1>2 effects. Nowadays, companies can use the live streaming platform as a carrier to carry out marketing activities and make depth interactions and communication with target consumers to enhance brand influence and bring profit increase.（Qian zhitong 2016） stated that since the introduction of live streaming on Taobao platform, the “live streaming + e-commerce” model has begun to develop rapidly in the field of e-commerce, which is called live commerce. Mobile live commerce is built on the basis of mobile terminals, which makes the terminal form more diversified. It has the characteristics of sharing information anytime and anywhere on the mobile terminal, and combines the three-dimensional display of audiovisual language.

3.2.1.3 Research overview of mobile live streaming

At present, the domestic and foreign researches related to live streaming mainly focus on the motive of watching live streaming, the behavior of rewarding live streaming and the willingness of continuous watching, but studies concentrated on mobile live streaming are comparatively insufficient.

（1）Research on live streaming

The rise of live streaming has been attracting extensive investigations on users' motivations for watching live streaming among scholars domestic and abroad, but each the current scholars' point of view is not entirely uniform. According to a study done by Friedlander and Mathilde(2017), the main motivations for users to watch live streaming are boredom, social interaction, contact with specific groups, need to communicate, entertainment and self-expression, etc. While Hamilton Ganetson and Keme(2014) believe that users’ motivations for participating in live streaming are mainly due to the uniqueness of the live streaming room and the interaction

with others. In addition, some scholars have studied the influencing factors of users' reward behavior in live streaming. Research by Li and Boying(2018) found that the main influencing factors that drive users to reward anchors are interaction, social existence, curiosity and social media dependence. He also found that gender can regulate the rewarding behavior. And Yu, Jun, Kim(2018) reported that audience integration, socialization motivation and rewarding behavior are positively related. Tu w, Yan C, and Yan Y(2018) analyzed the user portraits in the live streaming room. The study found that 20% of the viewers contributed 97% of the gifts, and 77% of the audience only watched the live streaming of the top three anchors. Most of the reward behaviors broke out in a short time after the number of bullet screens increased, and other people's reward behaviors also stimulated users to make reward behaviors. In this regard, he also proposed a prediction model based on a decision tree to infer future anchors' income. There are also some scholars who have studied the factors that influence the behavior of users who continue to watch live streaming. Hu (2017) uses a dual identity framework to explain the audience's continuous viewing intention. The dual identity framework includes the identity of the anchor and the group, and finds that the audience's identity of the anchor and the group is positively correlated with their continuous viewing intention. The anchor identity is driven by individual experience, and the individual experience includes quasi social interaction experience, actual and ideal self-consistency. Group identity is enhanced through common experience (including participation, cognitive communication and resonance infection)

（2）Research on e-commerce live streaming

At present, the research on e-commerce live streaming mainly focuses on consumers' motivation to watch e-commerce live streaming and their purchase and integration behavior. Cai J and wohn D y. Mittal A. et al.(2018) found that there are two main intentions for consumers to watch e-commerce live streaming: utilitarian intention (the intention to watch because of the product) and hedonic intention (the intention to watch because of the anchor). Brilndl, Simon and Christian(2017) have studied the impact of shared experience and perceived performance on consumer hedonic behaviors in e-commerce live streaming. The research found that shared experience has a significant effect on consumers' active hedonic behavior (chat) and passive hedonic behavior (watching). All have a strong positive effect, and the perceived efficacy only has

a positive effect on active hedonic behaviors, but the relationship with passive hedonic behaviors is not significant. Some scholars have studied consumer purchase and integration behavior in e-commerce live streaming. The research of Chen, Z et al. (2017) found that value compatibility, consumer experience delivery and good product display have a positive impact on improving consumers' purchase intentions. Guo Rong and Li Yan(2018) found that interactivity, entertainment, preference, subjective norms, behavior attitudes, and perceived behavior control have a positive impact on consumers' purchase intentions. Apiradee and Nuttapol(2018) proposed the relationship between perceived value and trust and consumer integration behavior. The study found that symbolic value affects consumer integration behavior through anchor trust, While utility value and hedonic value influence consumers' integration behavior through product trust. Jia Xiaofeng(2019) verified that consumer gender plays a moderating effect in the influence of trust, perceived entertainment value, and perceived utility value on purchase intention and integration intention in live broadcast of e-commerce.

3.2.2 The overview of consumer impulse buying theory

3.2.2.1 The definition of impulse buying

Scholars have begun to study consumer impulse buying since the 1950s, defining and classifying impulse buying from different perspectives. Although scholars have conducted a lot of research on consumer impulse buying, there are still controversies in the definition and content of impulse buying in this field, which leads to the lack of a unified understanding of the related concepts in the field of impulse buying.

In the early research on impulse buying, DuPont Co. puts forward for the first time that impulsive buying equals unplanned buying in its investigation of consumer buying behavior. The early literature on consumer behavior has been following DuPont's research results, and equated impulse buying with unplanned buying. (Dittmar H. 2005) That is, the consumer's plan before purchase is compared with the actual purchase, and the difference is regarded as an impulse purchase. Katona & Mueller (1955) records the information of consumers entering and exiting the store. When the consumer enters the store, it asks and records the product information that the consumer wants to buy. When the consumer leaves the store, they record the information of the

goods they actually buy again. The difference between the two comparisons is the goods that consumers buy impulsively.

In the field of marketing, scholars have done a lot of research on consumer impulse buying, and achieved a lot of constructive results. However, the research on impulse buying in e-commerce environment started relatively late, and scholars still have a lot of disputes on the definition, influencing factors and formation mechanism of online impulse buying and offline impulse buying.

Existing research shows that impulsive purchases account for a certain proportion of the commodities sold in physical stores. Therefore, in the early research on online impulse buying, scholars mainly explored whether consumers in the online shopping environment are as impulsive as the physical shopping environment. Some scholars believe that because consumers break the time and space constraints of physical store shopping in online shopping, it is easy for consumers to form impulsive purchases (Hausman A 2000). Donthu, N. & Garcia, A. (1999) found that online shopping also has impulsive buying behavior, and online shopping can make consumers more impulsive than physical store shopping. According to Li X, Hitt L M(2008),impulsivity is widespread in the e-commerce environment. Madhavaram (2004) proposed on the basis of previous studies that impulse buying is an immediate response behavior of consumers with an emotional tendency led by external environmental stimulation. In subsequent studies, many scholars also agreed with Madehavaram (2004), emphasizing the importance of “stimulus factors” in the definition of online impulse buying.

Combined with the previous research conclusions, this study attempts to define impulse buying as: consumers' internal shopping demand and emotional impulse are stimulated under the stimulation of the external environment, so as to make unplanned buying intention in a short time while watching live streaming. This study focuses on the impact of external stimuli on impulse purchase intention in the process of live streaming.

3.2.2.2 Influencing factors of impulse buying

The consumer environment faced by consumers is characterized by complexity, which also leads to the fact that many influencing factors of impulsive purchase cannot work independently, but collectively interact with individual consumer behavior. Although online shopping and

traditional physical shopping are completely different except for the shopping environment, but there are also some similarities between two completely different shopping environments. Therefore, certain impulsive purchases in traditional physical shopping also play a role in online shopping, and they are also used on the mobile terminal. many other influencing factors are at play in mobile live situation. Combined with the previous research on the influencing factors in the traditional environment and the online environment, this paper mainly summarizes the influencing factors of impulsive buying from three aspects: external factors, internal factors and the buying process.

The external causes of impulse buying include the characteristics and texture of the commodity itself, the atmosphere of the store, commodity prices and discounts, design and furnishing of the online shop, situational factors and use of social media, and store brands and commodity brands. In the research on the impact of commodity texture on impulse buying, the most representative one is the “Need for Touch” theory of Peck and Childers (2006). They pointed out that quite a few people have a tendency to “need to touch”. In other words, whether they can touch the commodity is very important for these consumers, which will directly and significantly affect their consumption decisions. Osman et al. (2013) showed that positive perception of the atmosphere can have a beneficial impact on mood, and then have a positive impact on in store behavior in terms of consumption amount and revisit intention. Similarly, the tense high smell in the store can have a significant positive impact on consumers' store evaluation, time spent in the store and sales through the mediating effect of emotion, it is especially effective for hasty consumers (Leenders et al., 2016). Previous studies have found that online consumers often trigger spontaneous and intuitive impulse purchase after being prompted by the stimulating prompts explicitly launched by online stores (such as price promotion, price limit advertising and attractive product appearance (Y. Liu et al.,2013). Rich and colorful layouts: Colors used on webpages can arouse consumers’ emotions, so consumer purchase desire can be stimulated by prominent color combinations based on a store’s theme (e.g., Loiacono, Watson, & Goodhue, 2007). Verhagen and Van Dolen (2011) emphasized information consideration in the process of impulse shopping, which might be acquired from contextual comments while viewing the celebrity posts. The Chen Yan (2008) study of consumer online purchasing behavior, shows that the brand of online stores

and the brand of goods have a significant impact on consumers' impulsive purchase, which can greatly improve consumers' impulsive purchase, and the cultural identity behind the brand is one of the causes of consumers' high purchase desire.

There are six internal factors that induce impulse buying. Consumer Personality, mood and emotion when shopping, cultural difference, consumer age difference, consumer knowledge and mental account effect. Joann Peck and Terry L. Childers (2006) argued that buying peaches or nectarines impulsively has lowest-cost for individuals. Because of this, impulse purchase may be driven by the pleasure of touch and the accessibility of benefits. Lee and Aaker (2004) conducted a joint study on cultural and impulsive buying among Americans and Koreans and found that Westerners are generally more impulsive to buy than Easterners, and they believe that this is directly related to cultural differences. Cultural differences will also bring freshness to consumers and trigger impulsive purchases. Li Zhifei (2007) has made a meaningful exploration in this regard. He pointed out that when consumers travel abroad, cultural differences will cause consumers feeling fresh, resulting in sudden and irresistible shopping impulse in a short time. Lee and Aaker (2004) conducted a comparative study of American and Korean cultures, and pointed out that Westerners are more likely to buy impulsively than Easterners. At the same time, they also found that young people in the East and West are usually more impulsive than the elderly. Wang Qingsen(2008) pointed out that consumer knowledge can make it easier for consumers to understand the product, simplify the purchase process, shorten the time of purchase and decision-making, easy to try and distinguish quality, etc., which can effectively induce impulse buying. After（Li Aimei 2004) and other scholars introduced this theory to China in 2004, the number of scholars studying mental accounts has gradually increased. The most representative one is Sun Daqiang (2008) on the psychological conflicts of consumers during impulsive purchases. He pointed out that consumers have a short period of thinking time during impulsive purchases. The trade-off between “gain” and “loss” is exactly the calculation process of the median function of mental accounts, but impulsivity will magnify “gain” in a short time. Therefore, such decisions are often limited rationality or ecological rationality.

In addition to the internal and external factors that induce impulsive purchases, the purchase process will also have a certain degree of impact on consumers' impulsive purchases. Among them,

the different channels adopted, the length and convenience of the shopping process, search buyer evaluation and self-control are several major aspects.（Dawson, Kim， 2010) and other scholars have explored convenience stores, Internet and other channels, and found that the convenience and relevance of purchasing goods are the reasons for impulse buying. In particular, the emergence of intelligent recommendation functions in Internet shopping has forced consumers to accept product recommendations with a strong correlation with preferences, which has a direct impact on inducing impulsive purchases. (Mccabe, Nowlis,2003) pointed out that in supermarkets and other environments, It is necessary to artificially create a super long shopping route, so that people feel "lost" in it, and thus unconsciously accept consumption inducements, consumption prompts and consumption associations, so as to trigger more impulsive purchases. The research of Rook, Fisher (1995), Dholakia (2000) revealed that the greatest energy in self-control comes from expected regret and perceived risk. In electronic shopping, whether it is using credit cards or Alipay, Consumers do not need to take out paper money, and they point out that the time when consumers are counting money, it is the most serious moment of their perceived risks and expected regrets, and they are the easiest to control their impulse buying behavior. Therefore, enterprises should adopt diversified and convenient payment methods to make consumers unable to find reasons for self-control, so as to further shorten the purchase time.

3.2.3 Mobile marketing stimulation theory

3.2.3.1 The influence of emotion on impulse buying

Impulsive buying has a series of characteristics that are unplanned, caused by external stimuli, and emotional responses, that is, stimuli cause emotional responses and make purchase behaviors. So emotions play a very important role in the middle, which is also an important feature that distinguishes impulse buying from rational buying decisions. In the traditional fields of economics and marketing, consumers are usually regarded as "rational", that is, people will choose the products that can bring them the most effect after carefully considering all their choices (Schiffman and Kanuk 2000). However, in real life, the time for many consumers to make a purchase decision while shopping is so fast that they can even be calculated in seconds. They usually have little patience to collect a large amount of information for processing (Engel, J.F.,

R.D. et al., 1986). Consumer Behavior. 5th ed., Hinsdale, Ill.: Dryden Press.), that is, impulse buying behavior. Therefore, the variable emotion is introduced in the study of impulse buying behavior.

The research of Rook and Hoch (1985) and Rook (1987) found that the complex emotional reaction process experienced by consumers in the process of impulsive purchase, including the strong impulse feeling before shopping, the excitement and pleasure brought by shopping, contentment and high emotions (Peter Weinberg and Wolfgang Gottwald,1982). When customers purchase impulsively, they will experience a strong buying drive, and this buying drive is full of emotions, accompanied by more emotional arousal (Youn, 2000). Suppressing negative emotions will exhaust a large quantity of cognitive resources and self-control capacity, leading to more irrational behaviors (Verplanken, et al., 2005). (Lin Jianhuang, et al.,2005) believe that the antecedents of impulsive buying affect impulsive buying behavior by influencing buying mood. The study of Jeon (1992) directly confirmed that the dimensions of emotional pleasure and arousal directly affect impulse buying. Emotion is the consumer's response to external environmental information. When the degree of emotional response surpasses rationality, impulse buying occurs. Therefore, impulse buying is a strong emotional response of consumers triggered by external stimuli, and this response prompts consumers to have the desire to buy immediately. In other words, impulse buying is the result of consumers' emotional response, and the emotion is triggered by the stimulation of consumers' shopping environment. Different shopping environments will stimulate consumers differently.

3.2.3.2 The impact of mobile marketing stimulus on impulse buying

According to the SOR theory, the formation of consumer impulsive buying behavior includes three stages, which are external stimulus, psychological activity and consumer response. In the context of live mobile shopping, firstly, in terms of external stimuli, consumers are affected by external factors such as promotional discounts and perceived interactive stimuli; Secondly, in terms of individual psychological activities, that is, the impact of external stimulation on individual impulse buying intention; finally, it causes an individual reaction, that is, impulsive buying behavior. At the same time, the characteristics of consumers' personality, consumption preferences, and purchasing experience will have an important impact on the results of consumers'

behavior. Under the combined action of these characteristic factors, consumers will induce or inhibit impulsive purchases. The SOR theory can better explain the impulsive buying behavior of consumers in the face of external environmental stimuli.

Marketing stimuli are also called controllable external stimuli. In the general marketing environment, there are many external stimulus factors, which can be generally divided into four categories: the first category, the sales staff's suggestions and reminders; the second category, the location of the merchandise shelves; the third category is the sales atmosphere in the store; the fourth category, the placement and promotion of goods. The research background of this thesis is a marketing environment that uses mobile devices such as mobile phones and PADs to interact with the mobile Internet environment in which it is located in a mobile terminal environment. Compared with the general marketing environment, there are both differences and connections. In the online shopping activities with the help of mobile terminals, when mobile shopping consumers are faced with various environmental factors, whether it is a personalized recommendation marketing stimulus, a pleasing picture display, or a good mobile website system usage, they will stimulate consumers to have a certain shopping commodity through the ups and downs of emotions, that is, the state of pleasure and wake-up Impulse, strengthen the impulse purchase will, help the occurrence of impulse purchase behavior.

Lo Y S, Lin S W, Hsu L Y (2016) pointed out that factors related to online store design and sales promotion stimulus will affect consumers' online impulse buying behavior during the entire consumer decision-making process. Further analysis shows that the personalized recommendation and marketing strategies of mobile retailers are more effective than traditional physical retail and online retail in arousing consumers' emotion and purchase intention. Zhou Xiang, Zhang Pengyi and Wang Jun (2018) collected and analyzed the browsing and purchasing records of mobile shopping consumers by mobile retailers, and then pushed the correct product promotion information and interactive information according to the needs of target customers or potential customers, thus influencing their shopping mood and generating shopping behavior.

At the same time, different from physical stores and general online store shopping, the specific marketing environment of the mobile live streaming platform has some typical characteristics of its own, such as shopping convenience and real-time, shopping experience

sharing, shopping entertainment and instant shopping Features such as interactivity, specifically, using the extensive coverage of mobile networks and mobile terminals (such as smart phones, PAD) that can be carried at any time, allowing consumers to use mobile phones and other mobile terminals to watch live streaming anytime and anywhere, so as to realize mobile online shopping, help consumers save a lot of shopping time and improve their shopping satisfaction. The service convenience of online stores will have an impact on consumer sentiment, which can then effectively influence consumers' repurchase intentions through consumer sentiment. This kind of influence also exists in the mobile live shopping environment. Moreover, with the help of the smart functions of mobile terminals such as mobile phones, such as timely information generation, convenient photography, complete audio and video recording, etc., consumers can share the shopping process in time, and further affect the various emotional changes of consumers. In addition, mobile shopping evaluation also has an impact on consumers' purchase intention. Chen Xiaohong and Zeng Ping (2016) found that when the number of reviews is large, the quality and number of reviews will affect consumers' purchase intention. According to the research of (Agrebi and jallais, 2014), it is found that consumers have entertainment perception in mobile shopping, that is, consumers can also be regarded as an entertainment behavior when they use their own mobile phones to shop. Therefore, the entertainment perception of mobile shopping will make consumers feel happy, and then affect their impulse buying.

3.2.4 Trust theory

3.2.4.1 Definition of trust

Trust is one of the most commonly used concepts in the field of social sciences. Deutsch (1958) was the first to define trust. Trust refers to expecting something to happen and acting accordingly, but the expectation may not happen, and when the expectation happens, its benefits may be less than the possible disadvantages. As early as before the emergence of Internet and e-commerce, they were defined and extensively studied in various fields, especially in the fields of psychology, sociology, philosophy, and marketing.

In the field of marketing. The research on trust was first distributed in the research on the relationship between distribution channels (producers and retailers) and buyers and sellers. An

important aspect of research focuses on how to maintain the medium and long-term relationship in the distribution channel under the condition of relatively high exchange costs. Linking the literature on trust and marketing, Nirmalya Kumar (1996) indicated that compared to the characteristics of other manufacturers or retailers, trust can bring more tangible benefits to them, and then can realize its long-term commitment. More attention to trust is from the aspect of marketing. (Lawrence A. Crosby et al. 1990) believed that trust is the positive expectation of consumers for the integrity of salespeople, which is related to the long-term interests of consumers. Trust plays an important role in building and maintaining a long-term relationship between sellers and buyers. Doney and Canon (1997) proposed that customers can trust suppliers, their salesmen, or both. (Sirdeshmukh et al. 2002) described trust as a reflection of consumers' perceived the credibility and ability of service providers to deliver promised product attributes which is reflected in the nascent markets of emerging economies.

Based on these, in this study, trust in the context of mobile shopping refers to consumers' perceptions about integrity and honesty related to online commerce. This paper defines online trust as： consumers have positive expectations and trust in the integrity and reliability of the services provided by live commerce sellers, and will generate purchase intentions in the context of mobile live streaming.

3.2.4.2 Research on the relationship between online shopping and trust

Gefen (2000) found in an empirical study that the familiarity and trust tendency of users to the website will affect whether users trust the website. Trust in a virtual community is mainly affected by the popularity of the community and the experience of its members. Lee (1998) proposed in the establishment of a consumer satisfaction model for online shopping, which factors affect consumers' trust in online shopping, namely the reputation of the supplier, third-party certification and customer satisfaction. Javenpaa and Tractinsky (2000) these scholars have all pointed out that trust is the core of online transactions. Without the trust of Internet users, shopping websites will never reach economic scale.

Research by (Y. Shi et al,.2013) suggested that once the trust level of a recognized individual or entity is transferred to another relatively unacknowledged individual or entity through their relationship, the transfer of trust occurs base on trust transference theory.Since the importance of

mobile-based online commerce to commercial activities and practices is rapidly growing and how trust is transferred and formed remains unknown especially in the context of mobile shopping, hence it is imperative to examine whether trust can be transferred with emotional and cognitive trust, and how to influence the impulse buying behavior.

3.2.4.3 Influencing factors of consumer online trust

In traditional e-commerce environment, most providers concentrate on selling products, while consumers can't see or touch the products before purchasing, and consumers' purchasing behavior is also severely handicapped. Thus, consumers usually perceive trust and make purchase decisions on the basis of provider reputation, which are essentially evaluated by rating scores and comments (E. Ert, A. Fleischer, N. Magen2016). Naturally, researchers primarily center at the influence of provider reputation on building consumer trust and reaching an agreement, where reputation plays a crucial role in building trust (A. Jøsang, R. Ismail, C. Boyd2007).In fact, in addition to reputation, many other factors can also influence customers' online trust. (Lai-Ying Leong et al,.2021) have showed that profile photo, reported experience, cognitive, and emotional trust are affected remarkably in mobile social commerce, and it has offered empirical evidence for scholars and practitioners to advocate the gender differences in determining the level of trust in commerce.

3.3 Interview Research

In order to better determine the relationship between variables in this study, put forward a clear theoretical framework, after reading and combing the literature, this study uses the way of interview to further collect data. Interview research and literature research are both important data collection methods in marketing research. Literature reading is more about collecting secondary data, while interviews focus on collecting primary research data. This research focuses on consumers' online shopping behaviors in the context of mobile live streaming. Due to the impact of the epidemic, it is very common for Chinese consumers to use mobile phones and PADs to watch live streaming. There are many interviewees to choose from, and most consumers can describe their behavior clearly, which can achieve better interview effect. In this era of accelerated growth in e-commerce, the expansion of mobile networks has been changing marketing patterns

and consumer behaviors. Scholars' research often lags behind the development of practice, and only relying on literature reading and sorting can not find all the variables that affect current consumer shopping psychology and behavior. Therefore, while conducting literature research, it is necessary to conduct exploratory research, conduct on-site interviews with consumers, understand the new trends of consumers' mobile terminal live shopping behavior, and discover new variables related to this research.

Therefore, on the basis of literature research, in order to deeply understand the internal mechanism of this impulse buying behavior, this paper further adopts the form of in-depth interview, through the inquiry of the respondents about the experience of mobile terminal live buying, to determine whether the theoretical model constructed by theoretical deduction is reasonable, so as to pave the way for the next large sample questionnaire research.

3.3.1 Purpose of interview

In order to research impulse buying behavior in the context of live commerce a qualitative approach was made based on semi structured in-depth interviews face-to-face. Based on the close relationship between emotion and impulsive purchase intention, the choice of in-depth interview provides a methodological tool for understanding consumers' emotion (Fontana and Prokos, 2016). The interviews were put into effect as semi structured conversations aiming at collecting knowledge about impulse shopping online, and narrowing it down to specific factors that affect impulse purchase against the backdrop of live streaming.

The fundamental purpose of the interview is to collect first-hand research data to support the proposed theoretical framework and research hypothesis. Understand and determine the marketing stimulus factors of consumer impulsive purchases in the mobile terminal live streaming situation, study which marketing stimulus factors affect consumers when making purchase decisions, and what are the motives and reasons for impulsive purchases.

3.3.2 Interview format

There are many forms of interview research. According to the actual situation and the characteristics of the topic, this research chooses to adopt the semi-structured interviews method.

The semi-structured interview method is an informal interview. The requirements for the interviewees are not too high, and the questions in the interview can be more random. The interviewer can deal with it more flexibly according to the interview outline and the respondent's response. Alternative, the interviewee can also express in a more relaxed environment without too many restrictions.

This paper belongs to the research of consumer perception and behavior, focusing on consumer shopping behavior in the context of live commerce. As long as consumers who frequently watch live commerce and participate in shopping, they meet the basic requirements of semi-structured interviews. The interviewees have a wide range of options and are easy to obtain. The variables involved in this research, such as perceived risk and impulsive purchase intention, are questions on the psychological level of consumers. Excessive intervention by interviewers will not help consumers to objectively describe their own experiences and feelings. Therefore, this research does not adopt structured interviews. Therefore, this paper does not take the form of structural interview, but develops a rough interview outline to guide the interviewees to easily state their views and feelings under the basic question framework. In addition, one of the purposes of the interview is to expect to discover some new variables related to this research. Semi-structured interviews are conducive to the freedom of the interviewees, and it is easier to discover new variables and new problems.

3.3.3 Outline of the interview

The interview time for this paper will be conducted from July 1, 2020 to July 20, 2020. The interviewees are consumers who have watched the live commerce and purchased goods on the live platform. The outline of the interview is shown in the table. Affected by the new crown epidemic, this paper adopts the method of individual interviews, most of which are completed through video and internet calls. The interviewee will be clearly informed before the start of the interview that he is participating in the marketing research on live shopping on mobile terminals. His answer will not have any impact on other people and can speak freely. Respondents do not have to stick to the questions raised by the interviewer, they can answer openly and say what they think. During the specific interview process, not all the 23 questions in the outline may be mentioned. The

interviewers will choose the specific formulation of each question according to the respondents' answers, and adjust the order of the questions appropriately, so that the interviewees can make a coherent statement in the conversation situation without any pressure. If in the previous question A, the interviewee has expressed in detail the content of the conversation that the latter question B wants to get, the interviewer will automatically skip question B. In addition, during the interview process, the interviewer will continue to encourage the interviewee to describe the incident and feelings, objectively state the specific case, and use as few guiding questions as possible. For example, question No. 17 in the outline is a guiding question, while question No. 18 is to ask the respondent to describe the type of risk they perceive. If the respondent can describe it clearly, it will not ask question 18. If the interviewees can't clearly describe the risk type in language, they will ask question 17 again. During the interview process, the interviewer will not terminate the interview early, even if the interviewee's conversation is of little value, he will insist on completing the entire interview. After the interview, the interviewer will register the basic information such as age, gender, education, and occupation with the consent of the interviewee.

3.3.4 Statistics of interviewees

In this study, a total of 20 interviewees were selected for in-depth interviews. The basic information of the interviewees, such as age, gender, education background, occupation, income and so on, showed certain differences and covered as many types of consumers as possible. The distribution of demographic information of the respondents is as follows:

Table 3-1 Demographic information of respondents

Gender	Male	Female
Distribution	7	13

Age	20-30 years old	30-40 years old	40-50 years old	Over 50 years old
Distribution	5	9	4	1
Occupation	Student	Enterprises	Public institutions or civil servants	Retirement
Distribution	5	6	8	1

Income	Under $500	500-700 dollars	700-1500 dollars	Over $1500
Distribution	3	4	9	4

Family	Unmarried	Married with one child	Married with two children

Distribution	6	8	6

3.3.5 Results of interview research

This study conducted in-depth interviews with 20 consumers who had purchased goods on live streaming, of which 4 respondents received face-to-face interviews, and 16 respondents received online video telephone interviews (mainly affected by the new crown epidemic). The average interview time is more than 30 minutes, and most interviews have achieved the desired effect. After the researcher sorted out the interview records, he came up with some valuable opinions, the statistics are as follows:

Table 3-2 Statistics of interview results on impulse buying issues

Number	Viewpoint	Statistics	Type description
Viewpoint 1	Watching live commerce has become a life habit	Sixteen interviewees mentioned that they often watch live commerce to bring goods, accounting for 80% of the respondents.	"When I'm bored, I watch my mobile phone, either scrolling wechat, movies or TV series, or live commerce with goods, almost every day." "Some of the things with live commerce are still cheap. Sometimes I don't want to buy anything. I just want to see if there are any suitable ones. I'll take a casual look."
Viewpoint 2	Respondents have a high percentage of impulse purchases when watching live streaming.	20 respondents mentioned that they had impulse buying intention, and 17 respondents mentioned that they had impulse buying experience, accounting for 85% of the respondents.	"I like to use all kinds of cosmetics, so I usually like to watch the live broadcast of Li Jiaqi and Weiya. When I see what I like, I will buy it." "I usually like to buy clothes. In the live studio, the effect of the anchor trying on clothes is more realistic than the static picture of the web page. When I see the clothes I like and the effect of the anchor is good, I will buy them."
Viewpoint 3	Promotions have an impact on respondents' impulse purchases.	Eighteen respondents admitted that impulse buying would increase during promotion, accounting for 90%	"Some things are originally available for purchase but not for purchase, but when you watch the live streaming, you will buy them if the discount is strong." "I was boring to spend the time watching live commerce. Buy two get one free for whole wheat tuna bread. Just during the

		of the respondents.	weight loss period, the same low-calorie food is better than discounted whole wheat tuna bread. Whole wheat tuna bread is more cost-effective, so I bought it.”

Table 3-3 Statistics of interview results on promotion issues

Number	Viewpoint	Statistics	Type description
Viewpoint 1	Respondents have a positive attitude towards promotional activities carried out during live commerce	20 respondents all welcomed the promotion carried out during the live commerce	“Originally, buying things online is cheaper. It would be better if there was a stronger discount when the live broadcast brought the goods.” “For the things I really like, I don't care about the price, but it's better to be cheaper.”
Viewpoint 2	Respondents’ promotional preferences are inconsistent	Nine respondents prefer price promotions, accounting for 45%, 5 respondents prefer non-price promotions, accounting for 20%, and 6 respondents can do both.	“I think it's best to make a direct discount. It's easy to see how much cheaper it is, and what you save has to be calculated.” “I like the gift-giving activity. I bought things from other homes because of the gifts given by the merchants.” “It doesn't matter. Anyway, there are promotions on live broadcast every day. We don't know whether it is really cheap or fake. It depends on the specific situation. If it feels really suitable, you can buy it if you really like it.”
Viewpoint 3	The limitation of promotion time has an impact on consumers' impulse purchase	Twelve interviewees said that they had bought products they didn’t plan to buy because of the limited-time purchases during live commerce, accounting for 60% of the respondents.。	“I was originally just to kill the time to watch the live commerce for a while, buy three steaks and get one free, and also give a frying pan. The event was only ten minutes. I thought it was very cost-effective and I paid quickly.” “I sometimes put the things I want to buy in the shopping cart and then think about it later. However, the time limit set by the merchant during the live broadcast prevents me from putting it in the shopping cart and considering it carefully.” “The cosmetics online store generally has a time limit when doing live promotions.

			Because the time can be accurate to the second with the mobile phone, sometimes I see the promotion time closer to the end of the promotion time, the more I want to buy.”

Certain perceptual materials have been obtained through interviews, and the conclusions of the interviews support the rationality of the theoretical framework and research hypothesis of this article to a certain extent. The relevant conclusions obtained from the interview are as follows.

（1）During the covid-19, when everyone is isolated at home and maintains social distancing, live commerce will indeed stimulate consumers to buy aggressively. They mentioned that various promotional activities with live streaming made people feel “low price and great value”, which aroused their interest.

（2）Interviewees all pointed out that before they decided to buy all kinds of goods in the live commerce, they would have all kinds of concerns and worries because they had an unpleasant shopping experience before. The longer they thought about it, the more they would even stop their impulse to buy goods.

（3） Under the influence of various factors, although a certain impulse purchase will be generated, it does not necessarily turn to impulse purchase behavior immediately, because the mobile terminal live broadcast even solves some of the problems that consumers worry about, such as product quality, store commitment, etc., as consumers, there is also a value judgment of the goods they are going to buy, that is, instant evaluation in their mind. If the evaluation is positive, they will immediately click to buy. Otherwise, you suddenly decide to abandon the purchase when you click to buy.

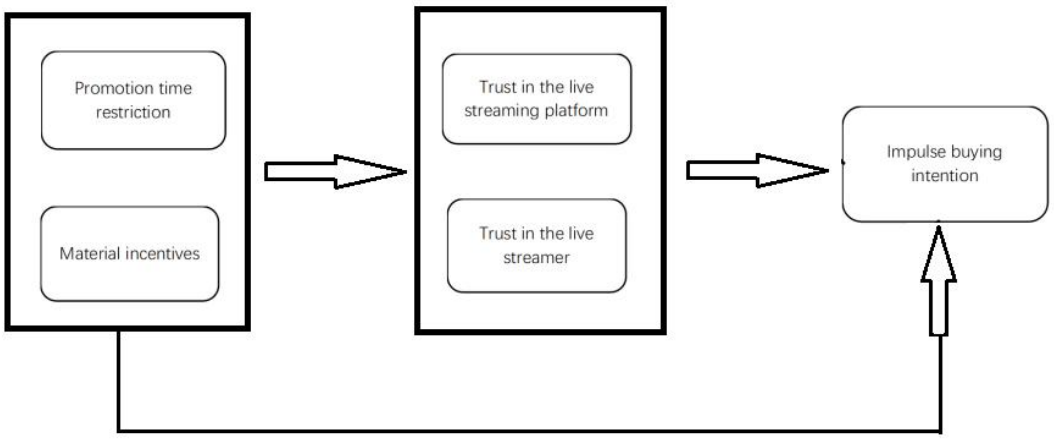
3.4 Theoretical Model and Research Hypothesis

3.4.1 Theoretical Model

Combining the results of the above literature reading and interview research, this research has determined the theoretical model. Using mobile terminal stimulus and impulsive purchase intention as independent variables, consumer perceived risk as an intermediary variable, and consumer impulse buying behavior as a dependent variable, this paper establishes a research

framework of “mobile terminal stimulus-customer trust-impulse purchase intention”. The specific theoretical model frame diagram is as follows Fig.3-1:

Figure 3-1 The theoretical model framework of this study



3.4.2 Research Hypothesis

3.4.2.1 The influence of mobile terminal marketing stimulus on impulsive purchase intention

From the perspective of the marketing stimulus of mobile terminals, many consumers choose online shopping because of cheap prices, abundant products and convenient purchase, which will trigger consumers' desire and impulse to buy. (Y. Liu, H. Li, F. Hu, 2013） believed that Online shopping environment is more able to generate impulse shopping than offline shopping environment, because restrictions in online market (such as remote store location and limited business hours) can be solved. Online consumers often make impulse purchases spontaneously and intuitively after receiving the stimulating tips from online stores, like price promotion, advertisement of limited offer, and attractive product appearance.

Zhao Li and Luo Ya (2008) conducted research on the promotion activities in the most popular shopping e-commerce platforms in China, such as Taobao, JD.com, and Dangdang. They found that the promotion methods adopted by e-commerce websites are similar. They summarized them into eight types. That is, price discounts, sweepstakes, limited-time purchases, large quantities of discounts, gift promotions, special sales, free shipping, and distribution of cash coupons. The research of other scholars is also similar. It can be said that these eight promotion methods basically cover all of the online promotion. If all the promotion methods are analyzed

individually, it will be more difficult. Therefore, in order to simplify the analysis and make it easier to draw conclusions, this study will select some of the eight methods for research. Of course, the selected method involves both price promotion and non-price Promotion is mainly analyzed from two aspects: promotion time restriction and material incentives.

（1）The impact of promotion time restriction on impulse buying

Most of the online or offline promotional activities are temporary and short-lived. Merchants usually make use of increasing consumers' sense of time urgency to induce impulsive purchases. "Limited time purchase" is the most representative online promotion method. It is most common especially in the context of live commerce. Consumers have to speed up their decision-making and thinking speed when choosing and purchasing goods due to the time constraints imposed by merchants. The early study showed that consumers will have a physiological response accompanied by a short-term purchase decision. This kind of physiological reaction is a subjective emotion, which is produced by an individual under time constraints, and is called "promotion time restriction." Svenson (1993) believes that promotion time restriction significantly affects impulsive buying. Lu Changbao (2013) believes that time pressure can be understood as a consumer's emotional experience, caused by the individual's perception of time compression and subjective opportunity cost. Ordonez et al. (1997) pointed out that time limit is a kind of time limit in the individual purchase process, and does not affect whether the individual can complete the task within this limit. promotion time restriction is the pressure caused by the time limit that the individual perceives. Corresponding decisions need to be made within this limit.

To sum up, it can be seen that there are two types of time pressure on sales promotion in academic research, one is generated by objective time constraints, and the other is generated by subjective opportunity cost perception. Since this article studies the general characteristics of promotional activities, only the promotional activities themselves are studied. Therefore, the promotion time limit involved in the research of this article is only considered from the promotion activity itself, specifically refers to the consumer's pressure perception caused by the time limit of the promotion activity itself. Purchase impulse may be affected by situational factors such as time availability and consumption ability (Jeffrey and Hodge, 2007). The more time a shopper spends in a shopping mall, the more chances he or she will have for impulse shopping. As a common

promotion method of live shopping platform, "limited time rush buying" compresses the time of consumers' purchase decision and requires them to make a quick decision whether to buy or not. Based on the perspective of psychology, time restriction will have a certain impact on the individual's emotion. In the case of time restriction, personal experience will produce anxiety, which will further affect their cognitive judgment.

（2）The impact of material incentives on impulse buying

Material incentives refer to the use of various material methods to make the motivated (individual or organization) obtain material satisfaction, so as to mobilize the creativity, initiative and enthusiasm of the motivated. The specific expression is in the live broadcast of the goods activity, “Buy "One get one free”, “discount promotion”, “free shipping”, “electronic coupons”, “gifts”, etc., are all material incentive behaviors. A report says that 60% of the online shoppers worldwide seek any digital coupons before their purchases (Clement, 2019).In the previous literature review, the research of many scholars at home and abroad has fully proved that promotional activities will change consumers' attitudes towards a certain product, and further affect consumers' willingness to buy. Zhou & Wong (2003), etc. have found that the lower the price of a product, the more it can stimulate consumers' impulse purchases. In fact, online promotion is also a popular marketing stimulus method adopted by online e-commerce companies to increase the willingness of online consumers to buy. Dholakia (2000) in his study found that marketing stimuli can positively prompt impulsive purchases. As we all know, impulsiveness can be induced by coupons. In fact, material incentives are also a popular marketing stimulus method used in live streaming to increase the willingness of online consumers to buy. Previousstudies have highlighted that online purchase leads to trigger more impulsive actions in comparison to offline purchases (Chan, Cheung, & Lee, 2017). And, personal characteristics and consumers' impulsivity are the main factors setting off impulsive behavior in the traditional environment, (Beatty & Ferrell, 1998), but the external stimuli are also selected to give scope to in online environment (Wells et al.,2011).

In the previous interviews of this research, almost all the interviewees said that “strong enough” promotional stimulus would make them “strong enough” to purchase intentions, and many interviewees mentioned that they would bring goods on live streaming. Seeing product price

reductions or impulse buying behaviors for gifts. Some interviewees said that they think they are more rational consumers, most of the time they will seriously consider the value and risk issues such as cost performance, functionality, authenticity, etc.But they will always make a few rash and impulsive decisions because they are stimulated by the host's promotion while watching the live commerce. They just “picking up the bargain” and buy without considering other factors. The results of these interviews are fully in line with the viewpoint of the “stimulus-response” theory.

According to the results of literature collation and interviews, this study believes that mobile terminal marketing stimuli can directly affect impulsive purchase intentions, and further assumes that promotion time restriction and material stimuli both have an impact on impulsive purchase intentions in the context of live streaming. Therefore, this research proposes hypotheses:

H1: In the context of live commerce on the mobile terminal, promotion time restriction has positive impact on consumers' impulsive purchase intentions.

H2: In the context of live commerce on the mobile terminal, material stimulus has positive impact on consumers' impulsive purchase intentions.

3.4.2.2 Customer trust and impulsive purchase intention

In live commerce, as compared to traditional shopping environment, consumers share information, resources and/or knowledge embedded within the social networks with each other to promote the same interests and trusts besides urging them for engagement and participation to enjoy the attractive incentives and price discounts.

In the online and mobile environment， due to the separation of time and space between buyers and sellers, there are more uncertainties and risks in transactions than in the traditional marketing environment. For online consumers, trust may be an important determinant of whether impulse buying occurs or not. Confronted with high risk and uncertainty, consumers often do not have a transaction relationship because they do not have enough trust in the live commerce. Therefore, this study adds trust as a variable to the online impulse buying integration model, and explores the role of trust in the online impulse buying process in the online and mobile environment. As Madhavaram et al. (2004) articulates, consumers' online shopping not only depends on their cognition of the ease of use, usefulness and entertainment of online shopping, but also is affected by some external variables. The higher the consumers' trust in online shopping, the

stronger the predictive power of consumers' online shopping attitude on shopping behavior. Trust plays an important role in the online and mobile buying environment

Relatedly, as （Sirdeshmukh, Singh, and Sabol， 2002) point out, salespeople reduce the perceived risk of purchasing by increasing the trust of purchasing agents. In previous research, Zhao Yuna (2010) showed that trust plays a major role in online shopping, and the higher the trust system, the more likely consumers are to make impulse purchases. In the context of mobile live commerce, serious information asymmetry problems exist between consumers and providers, and consumers have to encounter the risks of privacy information leakage, economic loss, and lack of after-sales service risk and so on. Thus, trust becomes an essential precondition for consumers to support their purchase decisions. Importantly, trust is a positive predictor for cooperation (Balliet & Van Lange, 2013).

Broadly speaking, trust not only depends on the individual, stable characteristics of the trusting person (e.g., Evans & Revelle, 2008) but also on the features of the specific trust situation, including, for instance, the trustworthiness of the trustee involved. As we all know,Airbnb, a peer-to-peer (P2P) accommodation sharing platform, is one of the most successful business operational models in the sharing economy, more than 200 million guests across 191 countries are delivered short-term rental services. (J. Kim, Y. Yoon, H. Zo, 2015) found that the verifications of a host can provide his personal identity and indicate that the host does exist, which can also contribute to build trust. The facial emotion and gender revealed in profile photos can also have a great influence on guests' trust and purchase intention. Thus, in this paper, we proposetrust in the streamers may influence impulse purchase intention.

As live commerce is becoming a growing trend in China during the pandemic, the mobile purchasing behavior needs to be further understood. More recently, it appeals to increasing research attention. As several studies have pinpointed, the key to long-term success for e-retailers is to establish consumer trust (Vos et al., 2014), but it is negatively influenced by the perceived risks. The online consumers are likely to purchase from e-vendors that they can trust and recognize the quality of the provided products in the context of live commerce, impulse buying looks more likely.

The formation of cognitive trust is founded on the substantial logic of being recognized and

believed by the trustor, whereas emotional trust is solely on the basis of consumers' feelings（H. Sun 2010. Consumers usually evaluate the trust behavior in the online environment. Once the level of emotional trust is high, they will enthusiastically show some behaviors（BenbasatKomiak 2017）. In the context of mobile live commerce, once consumers have emotional trust in the live streamer, they will trust the products recommended by the live streamer in the live streaming process. If the degree of emotional trust is very high, under the influence of mobile terminal marketing stimulation, the uncertainty will be reduced accordingly, and then impulse buying may occur. Therefore, this paper has established online trust as having two dimensions：trust in the live streamer and trust in the live streaming platform, is chosen as the theoretical foundation for this study.In line with these arguments, the hypotheses are as follows:

H3: In the context of live commerce on the mobile terminal, trust in the live streaming platform affects positively consumers' impulsive purchase intention.

H4: In the context of live commerce on the mobile terminal, trust in the live streamer affects positively consumers' impulsive purchase intention.

3.4.2.3 Customer trust and simulating mobile terminals

Since trust in a company is considered as an essential precondition to establishing long-term relationships (Chaudhuri and Holbrook, 2001), trust is a vital determining factor of customers willingness to enter into a long-term commercial exchange relationship with a company. Moreover, the majority of the existing literature has centered at consumer trust towards e-commerce (T. Oliveira et al.,2017) and with the rising popularity of live commerce, we should pay more attention to developing trust in the mobile shopping environment. We opine that there is indeed necessary to understand the role of trust in live commerce as a novel business model.

A study has shown that there is a linkage between cognitive and emotional trust in online product comparison sites (Radoslaw Maçik,2016). In accordance with (Kusuma et al.,2020), Customers' trust in the seller's website depends on the seller's website's ability to provide secure operations, including payment methods and transaction integrity. When consumers believe that relying on recommendation agents may provide truthful and well-customized recommendations (i.e. cognitive trust), they will have a strong feeling of security, i.e. trust in recommendation agents (i.e. emotional trust). Therefore, trust in shopping websites may be shifted to trust in live

commerce platform under the theoretical pinning of the trust transference theory. Thus, in this paper, we propose that trust in live streaming platform may influence impulse purchase intention.

In the interview, many interviewees mentioned that when choosing which the living room to enter, they would first see if their favorite anchor is carrying out the live streaming. For example, one interviewee mentioned that she likes to watch Li Jiaqi's live streaming, because every item he recommends will be tried in person. Because I like his live streaming, I trust the various products he recommends. Even if the product recommended by the anchor Li Jiaqi does not have any popularity and is a new product, out of trust in the anchor Li Jiaqi, he will try it. The rise of new consumption concepts has also reversely promoted changes in consumption patterns. People used to buy things by looking at “rigid” brands, but now young consumers buy things by looking at who is selling the product, and whether his ideas and personality are what he likes. Just as some interviewees like to watch Luo Yonghao's live streaming, because they are directed at Luo Yonghao's stand-up comedy, they want to support Luo Yonghao purely. In addition, interviewees also mentioned that although they will watch live streaming on different platforms, they are more inclined to watch live streaming and place orders on the dominant e-commerce platforms, for example Taobao and T-mall. Because the after-sales service of Taobao platform is guaranteed. Although I also watched live streaming on Tik Tok, the after-sales service of Tik Tok is not ideal. Correspondingly, when watching live streaming on Tik Tok, seldom place orders for purchases. In line with these arguments, the hypotheses are as follows:

H5: In the context of live commerce on the mobile terminal, promotion time restriction affects positively trust in the live platform.

H6: In the context of live commerce on the mobile terminal, material incentive affects positively trust in the live platform.

H7: In the context of live commerce on the mobile terminal, promotion time restriction affects positively trust in the live streamer.

H8: In the context of live commerce on the mobile terminal, material incentive affects positively trust in the live streamer.

3.4.3 Research variables and measurement methods

For the purpose of research, to understand the impact of mobile terminal marketing stimulus on consumer trust and impulse purchase intention in the context of mobile live commerce, this study uses a series of variables for quantitative analysis. Specific research variables include five variables: impulse purchase intention, perceived risk, mobile terminal marketing stimulus, trust. Among them, mobile terminal marketing stimulus appears as a discrete variable, and there is no need for quantitative measurement. The remaining four variables appear as continuous variables and need to be quantitatively measured with an appropriate scale. These variables have been widely used in previous studies of marketing and psychology. Scholars at home and abroad have developed relatively mature scales, and this study will draw on them.

Due to the different specific experimental conditions, this study made some fine-tuning of the language expression of these maturity scales, trying to better meet the experimental requirements of this study without changing the semantics. In order to ensure that the adjusted scale meets the requirements of content validity, five professionals in the research field were invited to discuss the scale, including one professor and two associate professors, and two doctoral graduates majoring in marketing. According to the opinions given by the discussion results, the scale was adjusted twice, and finally all the scales used in this study were determined.

In this study, all scales used Likert's five-point scale for measurement, measurement and scoring. 1 means completely disagree, 2 means disagree, 3 means partially agree, 4 means agree, and 5 means very agree.

3.4.3.1 Measurement of mobile marketing incentives

（1）Promotion time restriction measurement.

Promotion time restriction includes two dimensions, one is the time limit for sales promotion; the other is the time limit for consumers. Through questionnaire interviews, it is found that most consumers watch the live commerce for the purpose of passing time, and if there is no time, they will not watch the live commerce. Therefore, promotion time restriction in the thesis is mainly based on the promotion time limit. Promotion time restriction refers to the consumer's pressure perception caused by the time limit of the promotion activity itself when consumers buy. This anxiety makes customers accept the stimulation of merchant price discounts, weakening the

potential risks of promotional activities, and only focus on product prices after discounts. This invisible pressure perceived by consumers has greatly reduced consumers' perception of the risks of promotional activities and increased their attention to product discount information. The existence of the “promotion deadline effect” will bring an invisible pressure to consumers and will accelerate consumers' purchasing decisions. Time pressure will bring a sense of urgency to consumers, and this sense of urgency will prompt consumers to make impulsive purchases. The higher the sense of urgency, the higher the degree of impulsive purchases by consumers.

Regarding the measurement of promotion time restriction variables, we learn from and revise the measurement scales of (Lu Changbaoel al., 2013) and (Inman & Mc Alister 1994). Among them, for this article is the research conducted in the context of mobile live streaming, “I feel that the sales promotion time restriction set by merchants is generally relatively short.” Changed to “mobile live streaming sales promotion generally has a time limitation, I think merchants set promotion time restriction is generally relatively short.” “I feel that the time for deciding whether to purchase promotional products is relatively short.” Changed to “When I watch live commerce, I feel that the time for deciding whether to purchase promotional products is relatively short.” “I feel the promotional items purchased by myself are often approaching the promotional deadline.” Changed to “When I watched the live commerce, I felt that the promotional items I purchased were often approaching the promotional deadline.”

Table 3-4 Measurement Item of Time Pressure

Variable name	Measurement item	Source
Promotion time restriction	Mobile live streaming sales promotion generally have time limits. I think the sales promotion time set by merchants is generally relatively short.	Lu changbao（2013）; Inman & Mc Alister（1994）
	When I watched the live commerce, I felt that it took a relatively short time for me to decide whether to purchase promotional items.	
	When I watched the live commerce, I felt that the promotional items I bought were often approaching the deadline for the promotion.	

（2）Measurement of material incentives.

The material incentives often used in the live delivery of mobile terminals include shopping coupons, full sales, limited purchases, and freight discounts. Scholar Chan (1996) designed a relatively complete questionnaire in the measurement of promotion effects. Therefore, this research made appropriate modifications based on Chan's questionnaire. For example, "A promotion activity made by the store attracted my attention" to "A Promotional activities attracted my attention", and finally formed the questionnaire items of this research.

Table3-5 Measurement Item of Material Incentive

Variable name	Measurement item	Source
Material incentive	I like the promotions that the merchants carry out when they bring the goods live.	Chan（1996）
	When merchants carry out promotional activities in the context of live commerce, I will browse more pages to select products.	
	When I was watching the live commerce, the promotional activities made by the merchant attracted my attention.	
	When I was watching the live commerce, the promotional activities made by the merchant had no effect on my shopping plan.	

3.4.3.2 Measurement of impulse purchase intention

The scale of impulse buying intention is relatively mature. Many scholars at home and abroad have used similar scales. These scales do not have many items, generally contain 3-4 items, and have relatively good reliability and validity. This study draws on the scale of Beatty & Ferrell (1998), and makes appropriate revisions to the original scale based on the research content of this chapter. A total of four items were set up, combined with the mobile shopping scenario with live streaming, in order to obtain more accurate empirical data and answering habits suitable for Chinese consumers, the expert group discussed and adjusted the original scale's expression method appropriately. The revised measurement items of the main variables are shown in Tab. 3-6.

Table 3-6 Measurement Item of Impulsive Purchase Intention

Variable name	Measurement item	Source
Impulsive purchase intention	When I saw that my favorite product was being promoted on live streaming, I had a strong desire to own this product, even though I didn't want to buy it before.	Beatty&Ferrell（1998）
	When I saw that my favorite product was being promoted on live streaming, I was very likely to buy this product, even though I didn't want to buy it before.	
	When I saw that my favorite product was being promoted on live streaming, although it was not the product I planned to buy before, I really want to buy it now.	

3.4.3.3 Measurement of trust

There are two potential variables of trust, the trust in the anchor and the trust in the live streaming platform. Internet celebrity anchors have only emerged in recent years. Combined with previous literature studies, various variables have been measured from the perspective of trust. The item setting of these two latent variables is mainly through reference and adaptation of existing literature. The literature comes from: Fang Chao (2018); McKnight et al,.(2012); Cao Jiantong (2019); other items are determined after repeated revisions through expert discussion. In order to obtain the measurement data more accurately, the researcher adjusted the original form of the scale appropriately. There are a total of 8 items, of which there are 3 items for the trust of the anchor and 5 items for the trust of the live streaming platform. The revised measurement items of the main variables are shown in Tab. 3-7.

Table 3-7 Measurement Items of Trust

Variable name	Measurement item	Source
Trust in the live streamer	By watching the live commerce, I can trust the anchor more;	Fang Chao (2018)McKnight et al,.(2012) Cao Jiantong (2019)
	I believe that the products recommended by the anchor are shared after personal experience;	
	I believe that the products recommended by the anchor are useful to me;	
Trust in the live streaming platform	In general, I feel that the live commerce environment on the mobile terminal is mature and normal;	Cao Jiantong (2019)
	Generally speaking, I feel comfortable and at ease shopping on the live streaming platform;	
	I am very relieved that the live streaming store will fulfill their promise;	
	Most stores with live steaming will also consider the interests of customers;	
	Most online shops are capable of providing good services to customers;	

3.5 Empirical analysis

3.5.1 Experimental design

In the previous section, based on combing the existing literature and combining the content of interviews, the researchers put forward a theoretical model of the impact of mobile terminal marketing stimulus on consumers' impulsive purchase intention, and put forward the corresponding assumptions and questionnaires. design. In this section, we take live commerce as a research example, and conduct empirical research by obtaining data through survey questionnaires. The main steps are as follows: pre-investigation, formal investigation, data analysis, hypothesis testing and result analysis, etc.

3.5.1.1 Pre-investigation

The measurement items of each variable in the research model are obtained on the basis of reference to the existing literature and in-depth interviews. This study conducts preliminary inspections and appropriate modifications to the measurement items. Next, pre-investigation will be conducted on the preliminary questionnaires. Pre-survey is to conduct a small sample

pre-survey of the target group. According to the survey results, the original unreasonable design items are appropriately modified to make them clearer, concise and reasonable, so as to improve the reliability, validity and comprehensibility of the questionnaire, and finally form a formal questionnaire. Therefore, we should conduct a pre survey before launching a formal survey.

The data obtained in the pre-survey is processed, and the data analysis results show that the data has good reliability and validity. However, the questionnaire of the pre-survey still has the following problems:

First, the presentation of the questionnaire is not accurate enough, and individual items are difficult to understand. Second, some items in the questionnaire are duplicated, which makes the respondents easy to get bored in the process of answering the questions. Third, the number of items designed in the questionnaire is a bit too large and should be slightly reduced without affecting the effect of the survey. Fourth, the order of some items in the questionnaire is not reasonable and should be adjusted appropriately.

In view of these problems in the pre-survey, the researchers in this paper have made the following amendments: after adequate communication with the surveyed, some items in the questionnaire were adjusted, and more common and easy-to-understand texts were used to express them; at the same time, when In the case of affecting the survey results, delete duplicate items and correct unclear items so that the surveyed can fill out the questionnaire easily and happily. Further, we invited experts, including professors and doctoral students who majored in and marketing, to review the questionnaire to examine the face validity of the survey instruments, refine the questionnaire wordings, assess logical consistencies, judge the ease of understanding, and identify areas for improvement. Overall, the questionnaire was viewed as concise and easy to complete. They also proposed several suggestions for the formatting and wording of the questions, which were incorporated in the revised version of the questionnaire. After solving the above questions, the final questionnaire is formed. Please refer to the appendix for the revised survey questionnaire.

3.5.1.2 Formal survey

(1)Data collection

To understand and evaluate the relationships among the key constructs, we adopted a survey approach in verifying the proposed research model. We collected data via an online questionnaire.

We created the online questionnaire on Wenjuanxing, which was an online survey platform in China (www.wjx.cn). We invited participants through several online channels, such as placing a link to the online questionnaire in various social network sites (e.g., Weibo) and sending an invited message with a link to the questionnaire in Internet instant message tools (e.g., WeChat, QQ).

The data collection of this experiment was completed on the questionnaire star, a large-scale survey website in China. This website is a professional online questionnaire survey, evaluation, and voting platform, focusing on providing users with powerful, user-friendly design questionnaires, data collection, and custom reports. And survey results analysis and other services. It has the characteristics of high degree of specialization, speed, ease of use, and low cost. It has been widely used by a large number of companies and individuals. Up to now, the website has more than 5 million registered users.

On the one hand, since the completion of this paper was during the global COVID-19 outbreak, everyone must comply with social distancing. In order to avoid cross-infection, paper questionnaires were not adopted. on the other hand, in order to collect our survey data, the present study used an online survey. Using an online survey can maintain consistency between the research and data collection contexts. In addition, an online survey has many advantages, such as a wide cover and easy access to target users. In addition, to ensure that each respondent only commit one response, we carefully selected each participant's demographic information and internet protocol (IP) address. In total, 469 valid responses were obtained for the final data analysis.

The respondents of this survey must be consumers who have watched live commerce on their mobile phones and purchased goods. Mainly Chinese people, supplemented by undergraduates from a certain college. Before conducting online research, send out the questionnaire in confidential form via email, and inform the questionnaire in detail how to fill in the questionnaire and precautions, or ask the respondent to enter the designated link of the website to fill in, or ask them to directly send feedback via E-mail, or Fill in the feedback directly through Wechat.

Formal questionnaire survey time: August 3, 2020 to October 6, 2020.

In terms of sampling design, the survey subjects were selected strictly according to the natural distribution of demographic factors. During the survey period, a total of 500 e-mail

questionnaires and valid URL links were distributed. A total of 469 valid questionnaires were obtained from the questionnaire, with a total effective rate of 93.8%. Screening questions were incorporated to ensure that all participants are fully engaged with targeted constructs and utilizing online commerce platforms like “Have you ever used your mobile phone or iPad to watch online commerce with goods, and bought goods on online commerce?” Those participants have deleted whose answer was “No,” and necessary condition was imposed against every question to avoid missing values. We have received total 469 responses during the data collection process and removed 70 observations as those respondents were not buying products from the online commerce.

Data is collected via an online questionnaire without random assignment of respondents, which might augment the probability of several systemic individual discrepancies that would influence the results of the current study in the context of live streaming, i.e., gender, age, qualification, occupation, education and income. The distribution of valid questionnaire samples in the context of live streaming is shown in Tab. 3-8.

Table 3-8 Demographic Distribution in The Formal Investigation

Measure	Items	Frequency	Percent
Gender	Male	186	39.66%
	Female	283	60.34%
Age	Under 30 years old	162	34.54%
	30-45 years old	226	48.19%
	Over 45 years old	81	17.27%
Education	College degree and below	107	22.81%
	Undergraduate	265	56.5%
	Master's degree	80	17.06%
	PHD degree	17	3.62%
Monthly Disposable Income (USD)	Under $700	248	52.88%
	$700- $1560	171	36.46%
	Over $1560	50	10.66%
Occupation	Student	103	21.96%
	Institution	108	23.03%
	Government office	78	16.63%
	Enterprise career	102	21.75%
	Professional	64	13.65%
	Other	14	2.99%

（2）Demographic analysis

From the demographic distribution results (as shown in Tab. 3-8), the analysis of various statistical data is as follows:

①The age of the survey sample. There were 162 respondents under the age of 30, accounting for 34.54% of the total number of respondents; 226 respondents between the ages of 30-45, accounting for 48.19% of the total number of respondents; There are 81 people over 45 years old, accounting for 17.27% of the total respondents. From the data in the table, we can see that the majority of the post-80s and post-90s generations between 18 and 40 years old who have watched live commerce are those born in the 1980s and 90s. They also include some post-70s who have a high level of freshness. They have a high degree of curiosity and acceptance of new things. This data is consistent with the age-level distribution statistics of Internet netizens in my country. According to the 2019 China Mobile Internet User Industry Analysis Report, the number of Internet users aged 10 to 39 in my country accounted for the highest proportion, reaching 65.1%. At the same time, in the table, the 30-45 age group accounted for 48.19%, indicating that the phenomenon of Chinese consumers watching live commerce is not only concerned by the student group, but also has a large audience in the adult work group.

②The education of the sample was investigated. There are 107 respondents with college degree or below, accounting for 22.81% of the total respondents; 265 respondents with bachelor degree, accounting for 56.5% of the total respondents; 80 respondents with master degree, accounting for 17.06% of the total respondents; 17 respondents with doctor degree, accounting for 3.62% of the total respondents; according to the statistical results, the proportion of undergraduate degree is the highest, while that of doctor degree is the lowest. The overall educational structure distribution is relatively reasonable. It can be seen that the respondents generally have a good education level, so most of them do not need to consider food and clothing in their daily life, but also have certain material needs.

③Survey the monthly income of the sample. There were 248 respondents with a monthly income of less than US$700, accounting for 52.88% of the total number of respondents, and the largest proportion of the total sample size; followed by 171 respondents with a monthly income of US$700-1560 People, accounting for 36.46% of the total number of people surveyed; 50 people

with a monthly income of more than US$1,560, accounting for 10.66%; from the statistical results, this survey is relatively comprehensive. Consumers who use mobile terminals to watch live commerce have their own sources of income and have certain consumption capabilities.

④Investigate the occupational status of the sample. There were 103 respondents as students, accounting for 21.96% of the total number of respondents; 108 respondents as personnel from institutions, accounting for 23.03% of the total number of respondents; the largest proportion in the entire sample size ; There are 78 respondents as government agency personnel, accounting for 16.63% of the total number of respondents; 64 respondents as freelancers, accounting for 13.65% of the total number of respondents; There are 14 respondents engaged in other occupations, accounting for 2.99% of the total number of respondents. From the statistical results, the overall occupational structure is relatively reasonable. It can be seen that most of the survey groups have stable jobs and guaranteed income, and they have strong purchasing power, so they constitute the basis for watching live commerce and the main force of consumption.

3.5.2 Results and analysis

Data analysis followed a two-stage approach to evaluate the reliability and validity of the measurement model, then followed by fitting the structural model to test the research hypotheses. This study used Stata software to verify the proposed model and hypotheses via modeling. We used exploratory factor analysis to test reliability and validity before inspecting the hypotheses.

Before testing the research model, this article first tests the reliability and validity of all variables in the research model. Although the reliability and validity of the questionnaire have been tested in the pre-investigation stage, the sample size obtained after a large-scale formal investigation is much larger than the sample size obtained in the pre-survey. In other words, the sample size and the number of variables have been changed, so it is necessary to test the reliability and validity of the new sample size again, in order to provide more accurate and reliable data for the follow-up research.

The scale used in this experiment is formed by fine adjustments based on previous studies. Before analyzing the experimental results, it is necessary to test the reliability of the scale. This study adopted Cronbach's α to perform reliability analysis. Based on the standards suggested in

past studies, Cronbach's αmust be larger than 0.7 to ensure that the survey questions exhibit an adequate level of reliability (Fornell and Larcker, 1981).The scale test uses the alpha coefficient to judge the internal consistency of each scale. The reliability test results are shown in Tab. 3-9:

In the light of the science-led two-step approach by Anderson and Gerbing (1988), we first examined a reliability test in order to verify the reliability and consistency of the questionnaire data, and then performed confirmatory factor analysis on the structural model by analyzing internal consistency reliability, convergent validity and discriminant validity.

Following the results from Tab 5-2, the Cronbach's alpha (a) coefficients of all variables exceed the criterial value of 0.7, indicating that the measurement model exhibited an adequate level of reliability. In addition, this study performed validity analysis using three indicators: factor loading, composite reliability (CR) and average variance extracted (AVE). Based on Fornell and Larcker (1981), and Hair et al. (2010), the factor loading of each item must exceed 0.5, the CR of all items must be larger than the standard value of 0.6, and the AVE of all items must be larger than the standard value of 0.5. The results are shown in Tab. 3-9.

As Tab. 3-10 reports, AVE ranges from 0.531 to 0.613, inferring that the square root of AVE for a construct is more than its correlations which correspond to the correlation between factors. It can be achieved on the basis of the above findings that the discriminant validity of each factor is sufficient at the level of compliance. Due to the acceptable validity and adequate reliability, we can make further efforts to inspect the research hypothesis by fitting the structural model.

Table 3-9 Results of Reliability and Validity Analysis

Constructs	Indicators	Factor loadings	Composite reliability (CR)	Average variance extracted (AVE)	Cronbach's alpha (a)
Promotion Time restriction（PTR）	Promotion1	0.617	0.662	0.572	0.767
	Promotion2	0.585			
	Promotion3	0.601			
Material incentives (MI)	Incentive1	0.661	0.721	0.531	0.797
	Incentive 2	0.576			
	Incentive 3	0.558			
	Incentive 4	0.588			
	Incentive 5	0.609			
Impulse buying Intention (IB)	Impulse 1	0.645	0.663	0.613	0.784
	Impulse 2	0.623			
	Impulse 3	0.57			
	Impulse 4	0.56			
	Impulse 5	0.557			
	Impulse 6	0.517			
Trust in the live streaming platform (TP)	Platform1	0.545	0.790	0.544	0.833
	Platform2	0.58			
	Platform 3	0.572			
	Platform 4	0.527			
	Platform5	0.624			
Trust in the live Streamer (TS)	Streamer1	0.653	0.656	0.593	0.739
	Streamer 2	0.628			
	Streamer 3	0.598			

Table 3-10 Analysis of discriminant validity measures

Latent Variable	PTR	MI	TP	TS	IB
PTR	0.756				
MI	0.676	0.728			
TP	0.474	0.547	0.737		
TS	0.436	0.466	0.556	0.77	
IB	0.467	0.493	0.584	0.436	0.783

Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming

platform; TS=trust in the live streamer; IB=impulse buying intention.

3.5.3 Main effect test

Table 3-11 Results of the structural equation model and hypothesis testing

Hypothesis	Coefficient	t	P	Test restlts
H1	0.162819	3.12	0.002	YES
H2	0.1456503	2.44	0.015	YES
H3	0.4075332	7.79	0.000	YES
H4	0.976976	1.96	0.051	YES
H5	0.1497583	2.82	0.005	YES
H6	0.4291746	7.47	0.000	YES
H7	0.1711249	3.08	0.002	YES
H8	0.3295398	5.47	0.000	YES

Through regression analysis and mediation analysis to test whether hypotheses H1—H8 are valid, to verify whether the main effect of this research framework exists, and to examine consumer trust and impulse purchase intentions under the stimulus of mobile terminal marketing in the context of live commerce, and the level of consumer trust and impulsive purchase intentions stimulated by different promotional methods. As expected, promotion time restriction (β=0.162819; $p< 0.01$), material incentives (β=0.1456503; $p<0.05$), trust in the live streaming platform (β=0.4075332; $p<0.01$) and trust in the live streamer (β=0.0976976; $p<0.01$) have positive effects on impulse buying intention, supporting H1—H4. Promotion time restriction (β=0.1497583; $p< 0.01$) and material incentives (β=0.4291746; $p<0.01$) have positive effects on trust in the live streaming platform. Promotion time restriction (β=0.1711249; $p< 0.01$) and material incentives (β=0.3295398; $p<0.01$) have positive effects on trust in the live streamer, supporting H5—H8 in Tab.3-11.

3.5.4 Multi-group analysis

Therefore, we have further attempted to explore the influence path of impulse buying

intention among different demographic elements (i.e. gender, age, education, disposable monthly income， occupation, and duration of watching live streaming). The following tablesdemonstrate that the results with the significance of the investigated variables and multi-group analysis. On account of our analysis of previous studies and the characteristics of Chinese consumers, 399 valid samples in this study were divided into different related groups according to gender, age, educational level, disposable monthly income occupation, duration of watching live streaming.

3.5.4.1 Effects of gender on impulse buying intention

It is divided into male group and female group according to gender.

(1) Male group

Table 3-12 Structural model analysis in groups with different gender on impulse buying intention

	Model 1 (Male)	Model 2 (Male)	Model 3 (Male)	Model 4 (Female)	Model 5 (Female)	Model 6 (Female)
PTR->IB	-0.001	-0.561**	-0.469	0.280***	0.769***	0.933***
	(-0.01)	(-2.04)	(-1.24)	(4.07)	(3.56)	(3.28)
MI->IB	0.298***	0.560***	1.673***	0.028	-0.084	-0.218
	(3.28)	(2.71)	(3.61)	(0.36)	(-0.46)	(-0.60)
TP->IB	0.386***	0.273	-0.345	0.405***	0.732***	0.690***
	(4.23)	(0.79)	(-0.82)	(6.30)	(4.04)	(3.41)
TS->IB	0.154*	0.886***	0.284	0.092	0.388**	0.003
	(1.86)	(2.91)	(1.47)	(1.46)	(1.99)	(0.02)
MI*TP->IB		0.022				0.084
		(0.20)				(0.77)
MI*TS->IB		-0.253**	-0.415***			
		(-2.54)	(-3.03)			
MI*PTR->IB		0.181**			0.048	
		(2.10)			(0.80)	
TS*PTR->IB			0.138		-0.098	
			(1.17)		(-1.54)	
TS*TP->IB			0.225*			0.032
			(1.67)			(0.42)
PTR*TP->IB					-0.111**	-0.215**
					(-1.84)	(-2.38)
Observations	168	168	168	231	231	231
R^2	0.481	0.511	0.510	0.378	0.402	0.399

Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming platform; TS=trust in the live streamer; IB=impulse buying intention.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 3-2 The partial effect of material incentives I

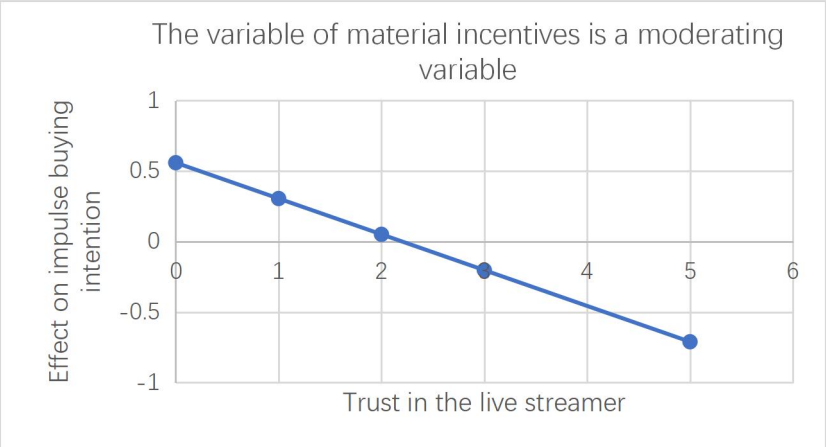
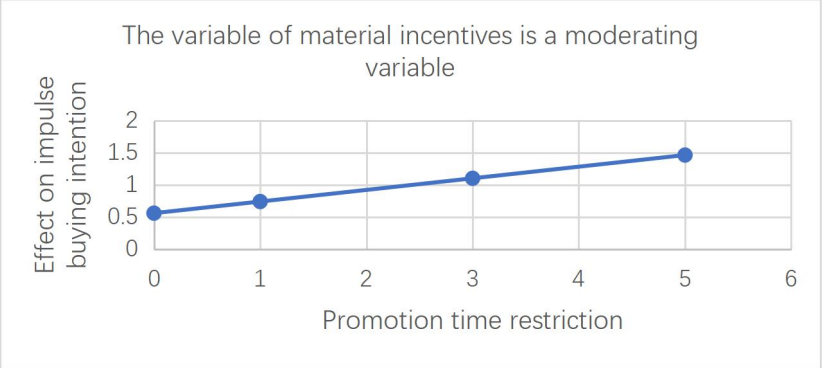


Figure 3-3 The partial effect of material incentives Ⅱ



Tab. 3-12 demonstrates material incentives (β= 0.298; p < 0.01), trust in the live streaming platform (β= 0.386; p < 0.01) and trust in the live streamer (β= 0.154; p < 0.1) have positive impacts on impulse buying intention in male group. All the interaction terms are insignificant when trust in the live streaming platform is a moderating variable. Therefore, we select material incentives and trust in the live streamer as moderating variables respectively in male group.

$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 MI*PTR+\beta_6 MI*TP+\beta_7 MI*TS \quad (3.1)$$

The partial effect of MI Ⅰ

$$=\beta_2+\beta_7 TS=0.560+(-0.253) \text{ trust in the live streamer} \quad (3.2)$$

The partial effect of MI Ⅱ

$$=\beta_2+\beta_5 PTR=0.560+0.181 \text{promotion time restriction} \quad (3.3)$$

From the perspective of mathematics, the slopes of promotion time restriction×material incentives and material incentives×trust in the live streamer are calculated by formulas (3.1)-(3.3). Fig. 3-2 and Fig. 3-3 illustrate the partial effect of material incentives.

When the level of trust in the live streamer is very low, the impact of interaction term, that is,

material incentives×trust in the live streamer on impulse buying intention is positive. When the level of trust in the live streamer is high, the impact of interaction term, ranging from 3 points to 5 points that is, material incentives×trust in the live streamer is negative. With the level of promotion time restriction ranging from 1 point to 5 points, the impact of interaction term, that is, material incentives×promotion time restriction on impulse buying intention is positive.

As shown in Tab. 3-12, promotion time restriction has a negative impact on impulse buying intention in male group (β=-0.561; p<0.05). Furthermore, we also found that material incentives (β= 0.560; p < 0.01) and trust in the live streamer (β= 0.886; p < 0.01) have positive significant effects on impulse buying intention. The interaction effect between material incentives and trust in the live streamer on impulse buying intention is significantly negative (β= -0.253; p<0.05). Material incentives, as a moderating variable, moderates negatively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator material incentives can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in female group. The interaction effect between promotion time restriction and material incentives on impulse buying intention is significantly positive (β=0.181; p<0.05), indicating that material incentives weaken the positive impact of promotion time restriction on impulse buying intention. The moderator material incentives can significantly weaken the negative relationship between promotion time restriction and impulse buying intention, and has a significant positive moderating effect in male group. When the level of material incentives is high, it will inhibit the negative impact of promotion time restriction on impulse buying intention, and this significant negative impact relationship will decrease with the increase of the level of material incentives in male group.

Figure3-4 The partial effect of trust in the live streamer I

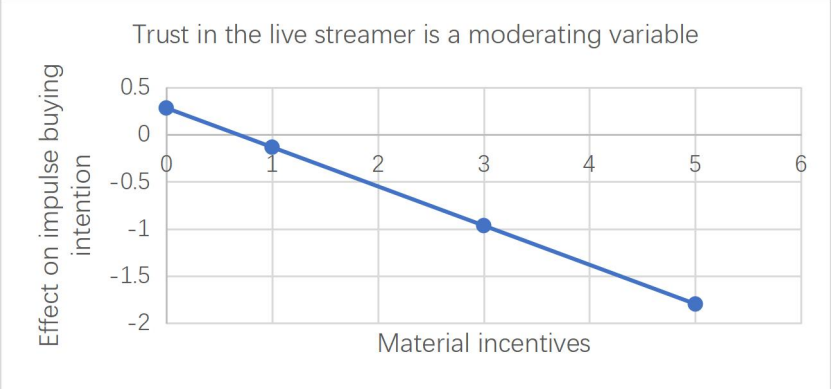
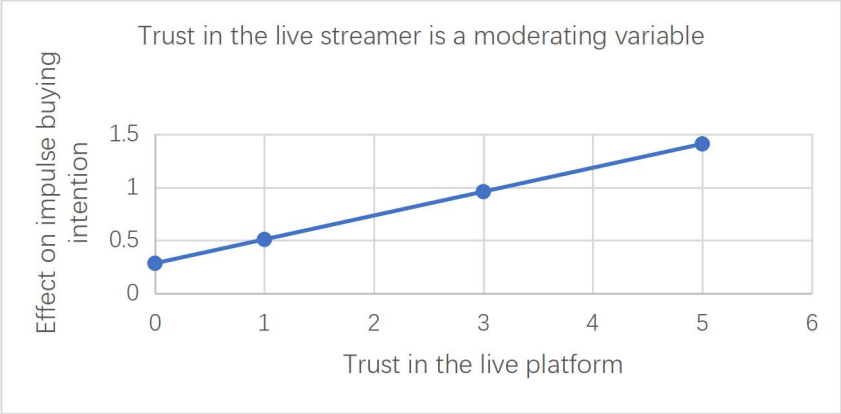


Figure 3-5 The partial effect of trust in the live streamer II



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 TS*PTR+\beta_6 TS*MI+\beta_7 TS*TP \quad (3.4)$$

The partial effect of TS Ⅰ

$$=\beta_4+\beta_6 MI=0.284+(-0.415) \text{ material incentives} \quad (3.5)$$

The partial effect of TS Ⅱ

$$=\beta_4+\beta_7 TP=0.284+0.225 \text{trust in the live platform} \quad (3.6)$$

From the perspective of mathematics, the slopes of trust in the live streamer×material incentives and trust in the live platform×trust in the live streamer are calculated by formulas (3.4)-(3.6). Fig. 3-4 and Fig. 3-5 illustrate the partial effect of trust in the live streamer.

When the level of material incentives is very low, the impact of interaction term, that is, material incentives×trust in the live streamer on impulse buying intention is positive. When the level of material incentives is high, ranging from 1 to 5, that is, material incentives×trust in the live streamer is negative. With the level of trust in the live platform ranging from 1 point to 5 points, the impact of interaction term, that is, trust in the live streamer×trust in the live platform on impulse buying intention is positive.

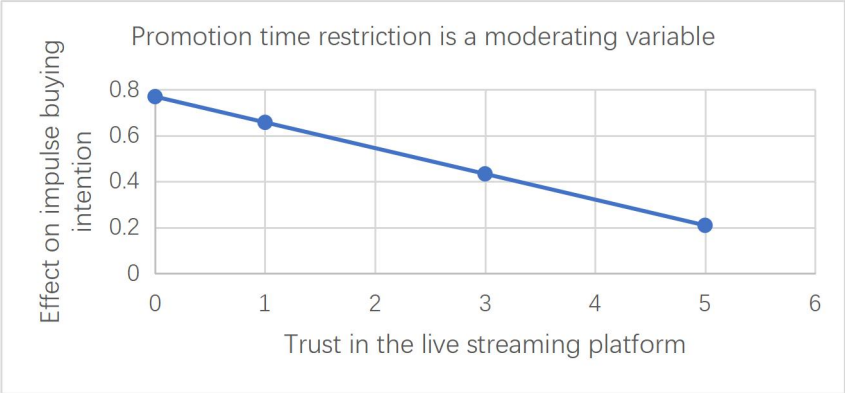
As shown in Tab. 3-12, material incentives have a positive impact on impulse buying intention in male group ($\beta=1.674$; $p<0.01$). The interaction effect between material incentives and trust in the live streamer on impulse buying intention is significantly negative ($\beta= -0.415$; $p<0.01$). Trust in the live streamer, as a moderating variable, moderates negatively the relationship between material incentives and impulse buying intention, indicating that the moderator trust in the live streamer can significantly inhibit the relationship between material incentives and impulse buying intention, and has a significant negative moderating effect in male group. When the level of trust in the live streamer is high, it will inhibit the positive impact of material incentives on impulse

buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streamer in male group. Trust in the live streamer, as a moderating variable, moderates positively the relationship between trust in the live streaming platform and impulse buying intention in male group.

(2) Female group

Tab. 3-12 demonstrates promotion time restriction(β= 0.280; p < 0.01), and trust in the live streaming platform (β= 0.405; p < 0.01) have positive impacts on impulse buying intention in female group. Therefore, we select promotion time restriction and trust in the live platform as moderating variables respectively in female group.

Figure3-6 The partial effect of promotion time restriction



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 PTR*TP+\beta_7 PTR*TS \quad (3.7)$$

The partial effect of PTR

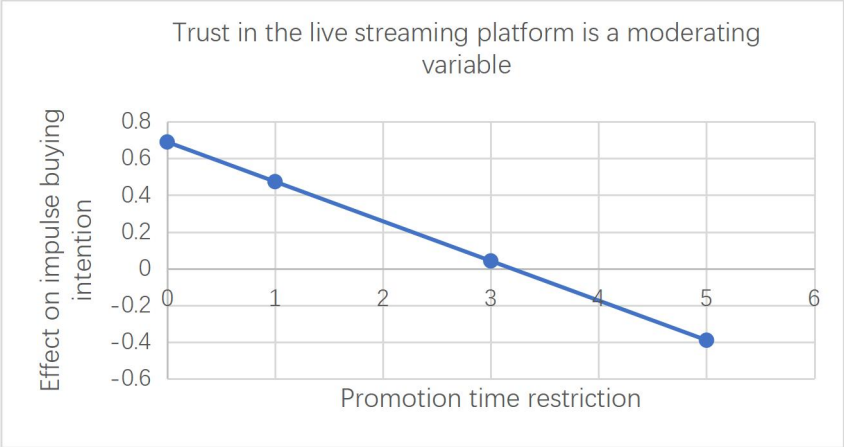
$$=\beta_1+\beta_6 TP=0.769+(-0.111)\text{ trust in the live streaming platform} \quad (3.8)$$

From the perspective of mathematics, the slope of promotion time restriction×trust in the live streaming platform is calculated by formulas (3.7) and (3.8). Fig. 3-6 illustrates the partial effect of promotion time restriction. With the level of trust in the live streaming platform ranging from 1 point to 5 points, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform on impulse buying intention is positive.

As shown in Tab. 3-12, promotion time restriction(β=0.769; p<0.01) and trust in the live streaming platform (β=0.732; p<0.01) have a positive impact on impulse buying intention respectively in female group. The interaction effect between promotion time restriction and trust in the live streaming platform on impulse buying intention is significantly negative (β=-0.111; p<0.1). Promotion time restriction, as a moderating variable, moderates negatively the relationship

between trust in the live streaming platform and impulse buying intention, indicating that the moderator promotion time restriction can significantly inhibit the relationship between trust in the live streaming platform and impulse buying intention, and has a significant negative moderating effect in female group. When the level of promotion time restriction is high, it will inhibit the positive impact of trust in the live streaming platform on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of promotion time restriction in female group.

Figure3-7 The partial effect of trust in the live streaming platform



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.9)$$

The partial effect of TP

$$=\beta_3+\beta_5 PTR=0.690+(-0.215)\text{ promotion time restriction} \quad (3.10)$$

From the perspective of mathematics, the slope of promotion time restriction×trust in the live streaming platform is calculated by formulas (3.9) and (3.10). Fig. 3-7 illustrates the partial effect of trust in the live streaming platform. When the level of promotion time restriction is very low, ranging from 1 point to 3 points, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform on impulse buying intention is positive. When the level ofpromotion time restriction is high, ranging from 4 points to 5 points, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform is negative in female group.

As shown in Tab. 3-12, promotion time restriction($\beta=0.933$; $p<0.01$) and trust in the live streaming platform ($\beta=0.690$; $p<0.01$) have positive impacts on impulse buying intention respectively in female group. The interaction effect between promotion time restriction and trust

in the live streaming platform on impulse buying intention is significantly negative (β=-0.215; p<0.05). Trust in the live streaming platform, as a moderating variable, moderates negatively the relationship between promotion time restriction and impulse buying intention, indicating that the moderator trust in the live streaming platform can significantly inhibit the relationship betweenpromotion time restriction and impulse buying intention, and has a significant negative moderating effect in female group. When the level of trust in the live streaming platform is high, it will inhibit the positive impact of promotion time restriction on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streaming platform in female group.

3.5.4.2 Effects of age on impulse buying intention

The age is divided into less than 30 years old, 30-45 years old and more than 45 years old

（1）The less than 30 years old group

Table 3-13 Structural model analysis in groups with different age on impulse buying intention

	Model 1 (<30)	Model 2 (<30)	Model 3 (30-45)	Model 4 (30-45)	Model 5 (30-45)	Model 6 (>45)	Model 7 (>45)
PTR->IB	0.427***	0.006	-0.012	-0.466**	-0.406	0.096	1.195*
	(4.32)	(0.02)	(-0.18)	(-2.01)	(-1.16)	(0.73)	(1.97)
MI->IB	-0.081	1.388**	0.281***	0.059	1.188***	0.152	-0.310
	-0.61()	(2.22)	(3.82)	(0.20)	(2.96)	(1.11)	(-0.50)
TP->IB	0.412***	0.567**	0.397***	-0.000	-0.118	0.419***	1.073***
	(3.65)	(2.23)	(5.93)	(-0.00)	(-0.36)	(3.42)	(2.86)
TS->IB	0.089	-0.695*	0.129**	0.666**	0.124	0.021	0.361
	(0.87)	(-1.84)	(2.12)	(2.47)	(0.46)	(0.16)	(0.61)
TP*PTR->IB		0.137					-0.302*
		(0.96)					(-1.78)
TP*MI->IB		-0.475**		0.118			0.143
		(-2.38)		(1.29)			(0.80)
TP*TS->IB		0.259**			0.155		-0.086
		(2.08)			(1.59)		(-0.51)
MI*PTR->IB				0.147**			
				(2.04)			
MI*TS->IB				-0.177**	-0.267**		
				(-2.07)	(-2.31)		
TS*PTR->IB					0.114		
					(1.10)		
Observations	118	118	209	209	209	72	72
R^2	0.480	0.515	0.410	0.444	0.428	0.334	0.382

Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming platform; TS=trust in the live streamer; IB=impulse buying intention.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 3-8 The partial effect of trust in the live streaming platform I

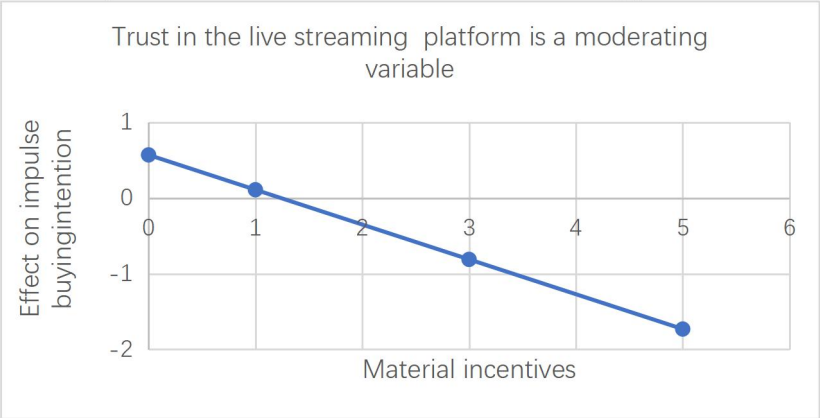
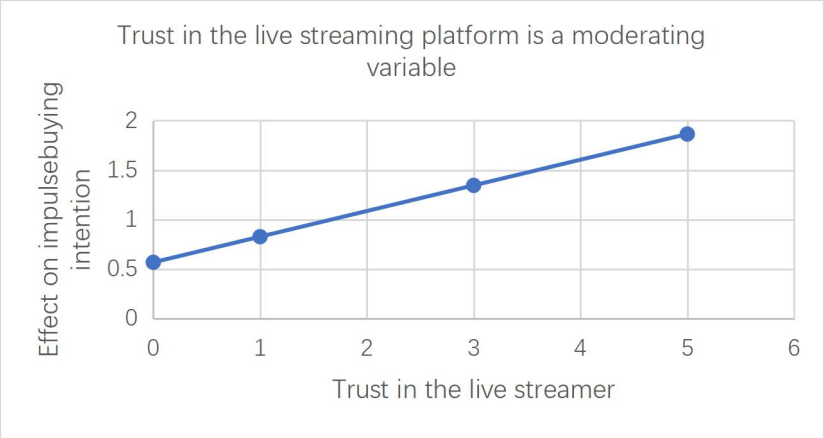


Figure 3-9 The partial effect of trust in the live streaming platform II



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.11)$$

The partial effect of TP Ⅰ

$$=\beta_3+\beta_6 MI=0.567+(-0.475)\text{ material incentives} \quad (3.12)$$

The partial effect of TP Ⅱ

$$=\beta_3+\beta_7 TS=0.567+0.259\text{trust in the live streamer} \quad (3.13)$$

Tab. 3-13 demonstrates promotion time restriction ($\beta= 0.427$; $p < 0.01$), and trust in the live streaming platform ($\beta= 0.412$; $p < 0.01$) have positive impacts on impulse buying intention in less than 30 years old group. All the interaction terms are insignificant when promotion time restriction in the live streaming process is a moderating variable. Therefore, we select trust in the live streaming platform as a moderating variable in less than 30 years old group.

From the perspective of mathematics, the slopes of trust in the live streaming platform×material incentives and trust in the live platform×trust in the live streamer are calculated

by formulas (3.11)-(3.13). Fig. 3-8 and Fig. 3-9 illustrate the partial effect of trust in the live streaming platform. When the level of material incentives is very low, the impact of interaction term, that is, material incentives×trust in the live streaming platform on impulse buying intention is positive. When the level of material incentives is high, ranging from 3 to 5, that is, material incentives×trust in the live streaming platform is negative. With the level of trust in the live streamer ranging from 1 point to 5 points, the impact of interaction term, that is, trust in the live streamer×trust in the live platform on impulse buying intention is positive.

As shown in Tab. 3-13, material incentives (β= 1.388; $p<0.05$) and trust in the live streaming platform (β=0.567; $p<0.05$) have positive impacts on impulse buying intention respectively in less than 30 years old group. Trust in the live streamer (β=-0.695; $p<0.1$) have a negative impact on impulse buying intention in less than 30 years old group. The interaction effect between material incentives and trust in the live streaming platform on impulse buying intention is significantly negative (β=-0.475; $p<0.05$). Trust in the live streaming platform, as a moderating variable, moderates negatively the relationship between material incentives and impulse buying intention, indicating that the moderator trust in the live streaming platform can significantly inhibit the relationship between material incentives and impulse buying intention, and has a significant negative moderating effect in female group in less than 30 years old group. When the level of trust in the live streaming platform is high, it will inhibit the positive impact of promotion time restriction on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streaming platform in less than 30 years old group.

The interaction effect between trust in the live streamer and trust in the live streaming platform on impulse buying intention is significantly positive (β=0.259; $p<0.05$). Trust in the live streaming platform, as a moderating variable, moderates negatively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator trust in the live streaming platform can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in less than 30 years old group. When the level of trust in the live streaming platform is high, it will inhibit the negative impact of trust in the live streamer on impulse buying intention, and this significant negative

impact relationship will decrease with the increase of the level of trust in the live streaming platform in less than 30 years old group.

(3) The 30-45 years group

Figure 3-10 The partial effect of material incentives I

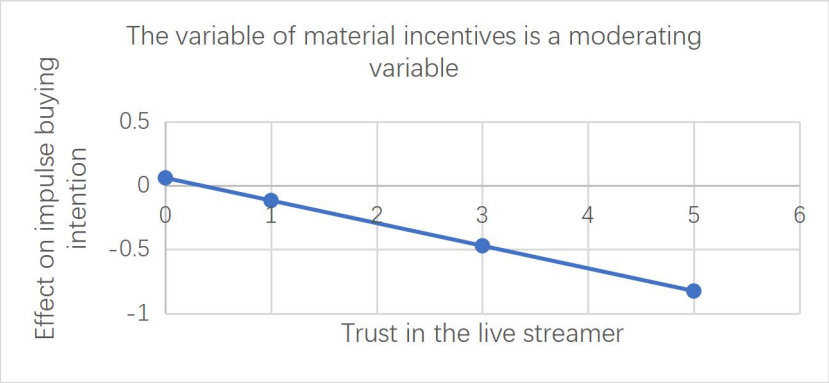
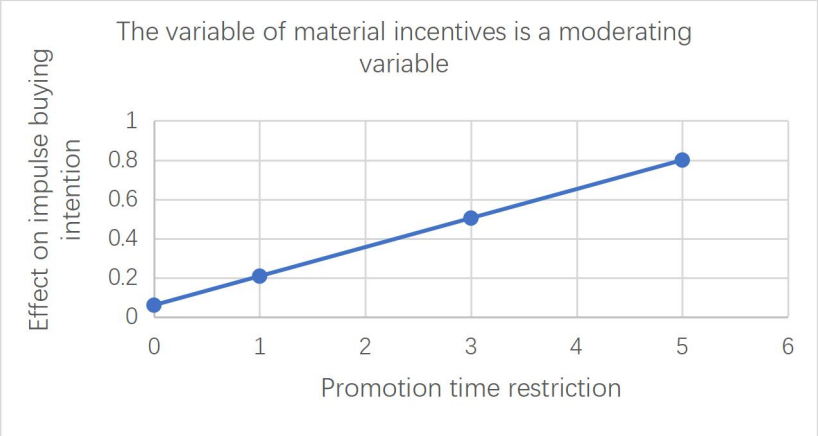


Figure 3-11 The partial effect of material incentives II



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 MI*TP+\beta_7 MI*TS \quad (3.14)$$

The partial effect of MI Ⅰ

$$=\beta_2+\beta_7 TS=0.059+(-0.177) \text{ trust in the live streamer} \quad (3.15)$$

The partial effect of MI Ⅱ

$$=\beta_2+\beta_5 PTR=0.059+0.147 \text{promotion time restriction} \quad (3.16)$$

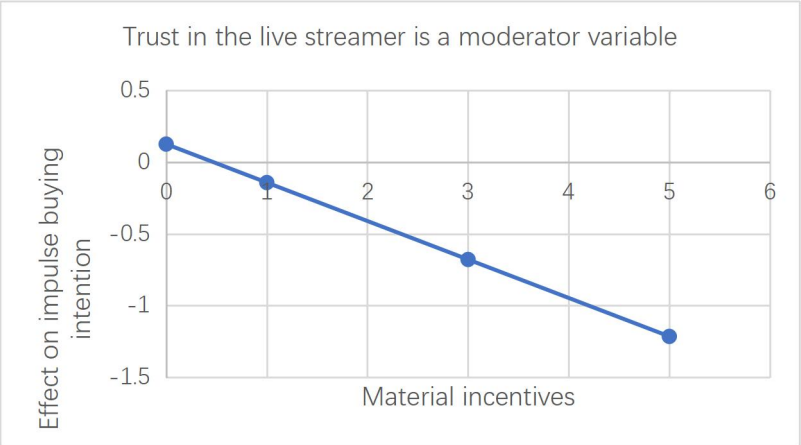
Tab. 3-13 demonstrates material incentives (β= 0.281; $p < 0.01$), trust in the live streamer (β= 0.129; $p < 0.05$) and trust in the live streaming platform (β= 0.397; $p < 0.01$) have positive impacts on impulse buying intention in 30-45 years old group. All the interaction terms are insignificant when trust in the live streaming platform in the live streaming process is a moderating variable. Therefore, we select trust in the live streamer and material incentives as moderating variables in 30-45 years old group.

From the perspective of mathematics, the slopes of promotion time restriction×material incentives and trust in the live streamer×material incentives are calculated by formulas (3.14)-(3.16). Fig. 3-10 and Fig. 3-11 illustrate the partial effect of material incentives. With the level of trust in the live streamer ranging from 1 point to 5 points, the impact of interaction term, that is, trust in the live streamer×material incentives on impulse buying intention is negative. With the level of promotion time restriction ranging from 1 to 5, that is, promotion time restriction×material incentives is positive.

As shown in Tab. 3-13, trust in the live streamer (β=0.666; $p<0.05$) have a positive impact on impulse buying intention in 30-45 years old group. Promotion time restriction (β=-0.466; $p<0.05$) have a negative impact on impulse buying intention in 30-45 years old group. The interaction effect between material incentives and trust in the live streamer on impulse buying intention is significantly negative (β=-0.177; $p<0.05$). Material incentives, as a moderating variable, moderates negatively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator trust in the live streamer can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in 30-45 years old group. When the level of material incentives is high, it will inhibit the positive impact of trust in the live streamer on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of material incentives in 30-45 years old group.

The interaction effect between promotion time restriction and material incentives on impulse buying intention is significantly positive (β=0.147; $p<0.05$). Material incentives, as a moderating variable, moderates positively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator material incentives can significantly inhibit the relationship between promotion time restriction and impulse buying intention, and has a significant positive moderating effect in 30-45 years old group. When the level of material incentives is high, it will inhibit the negative impact of promotion time restriction on impulse buying intention, and this significant negative impact relationship will decrease with the increase of the level of material incentives in 30-45 years old group.

Figure 3-12 The partial effect of trust in the live streamer



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 MI*TP+\beta_7 MI*TS \quad (3.17)$$

The partial effect of TS

$$=\beta_4+\beta_7 \text{material incentives}=0.124+(-0.267)\text{ material incentives} \quad (3.18)$$

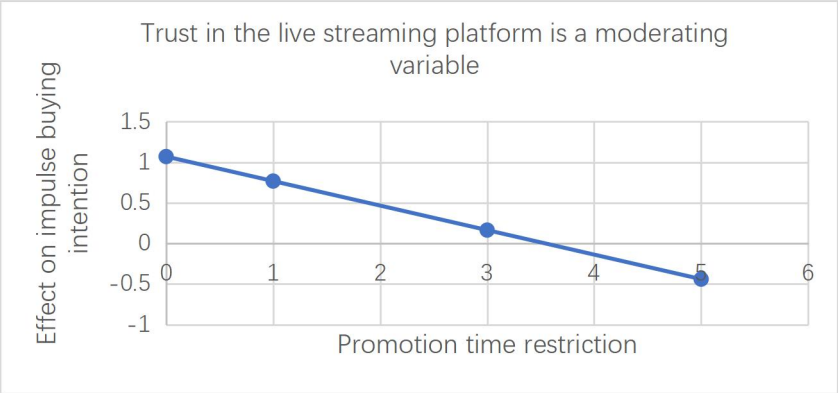
When trust in the live streamer is a moderating variable in 30-45 years old group.

From the perspective of mathematics, the slope of trust in the live streamer×material incentives are calculated by formulas (3.17) and (3.18). Fig. 3-12 illustrates the partial effect of trust in the live streamer. With the level of material incentives ranging from 1 point to 5 points, the impact of interaction term, that is, trust in the live streamer×material incentives on impulse buying intention is negative.

As shown in Tab. 3-13, the variable of material incentives (β=1.188; $p<0.01$) has a positive impact on impulse buying intention in 30-45 years old group. The interaction effect between material incentives and trust in the live streamer on impulse buying intention is significantly negative (β=-0.267; $p<0.05$). Trust in the live streamer, as a moderating variable, moderates negatively the relationship between material incentives and impulse buying intention, indicating that the moderator trust in the live streamer can significantly inhibit the relationship between material incentives and impulse buying intention, and has a significant negative moderating effect in 30-45 years old group. When the level of trust in the live streamer is high, it will inhibit the positive impact of material incentives on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streamer in 30-45 years old group.

（3）The more than 45 years old group

Figure 3-13 The partial effect of trust in the live streaming platform



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.19)$$

The partial effect of TP

$$=\beta_3+\beta_5 PTR=1.073+(-0.302)\text{promotion time restriction} \quad (3.20)$$

Tab. 3-13 demonstrates trust in the live streaming platform (β= 0.419; $p < 0.01$) has a positive impact on impulse buying intention in more than 45 years old group. Therefore, we select trust in the live streaming platform as a moderating variable in more than 45 years old group.

From the perspective of mathematics, the slope of trust in the live streaming platform×promotion time restriction is calculated by formulas (3.19) and (3.20). Fig. 3-13 illustrates the partial effect of trust in the live streaming platform. When the level of promotion time restriction is low, ranging from 1 point to 3 points, the impact of interaction term, that is, trust in the live streaming platform×promotion time restriction on impulse buying intention is positive. When the level of promotion time restriction is low, ranging from 4 points to 5 points, the impact of interaction term, that is, trust in the live streaming platform×promotion time restriction on impulse buying intention is negative.

As shown in Tab. 3-13, the variables of promotion time restriction(β=1.195; $p<0.1$) and trust in the live streaming platform (β=1.073; $p<0.01$) have positive impacts on impulse buying intention in more than 45 years old group. The interaction effect between promotion time restriction and trust in the live streaming platform on impulse buying intention is significantly negative (β=-0.302; $p<0.1$). Trust in the live streaming platform, as a moderating variable, moderates negatively the relationship between promotion time restriction and impulse buying intention, indicating that the moderator trust in the live streaming platform can significantly inhibit the relationship between promotion time restriction and impulse buying intention, and has a

significant negative moderating effect in more than 45 years old group. When the level of trust in the live streaming platform is high, it will inhibit the positive impact of promotion time restriction on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streaming platform in more than 45 years old group.

3.5.4.3 Effects of education on repurchase intention

According to the degree of education of consumers, they are divided into low education group and high education group. Those with beneath the bachelor-degree level are the low education group, and those with a bachelor's degree or above are the high education group.

(1) The low education group.

Table 3-14 Structural model analysis in groups with different education on impulse buying intention

	Model 1 (Low)	Model 2 (High)	Model 3 (High)	Model 4 (High)	Model 5 (High)	Model 6 (High)
PTR->IB	0.102	0.183***	0.402**	0.047	0.685**	0.936***
	(0.86)	(3.20)	(2.02)	(0.28)	(2.50)	(3.54)
MI->IB	0.074	0.161**	-0.060	0.254	-0.298	0.258
	(0.51)	(2.47)	(-0.39)	(1.12)	(-0.95)	(0.81)
TP->IB	0.556***	0.341***	0.136	-0.062	0.123	-0.399*
	(5.29)	(5.63)	(0.69)	(-0.29)	(0.60)	(-1.75)
TS->IB	0.057	0.129**	0.767***	0.711***	-0.128	0.215
	(0.52)	(2.29)	(3.96)	(3.31)	(-0.58)	(1.09)
PTR*TP->IB			0.063		-0.158*	
			(1.00)		(-1.88)	
PTR*TS->IB			-0.212***			-0.243***
			(-3.44)			(-2.98)
PTR*MI->IB			0.080	0.042		
			(1.55)	(0.82)		
MI*TP->IB				0.129*	0.141	
				(1.89)	(1.51)	
MI*TS->IB				-0.194***		-0.026
				(-2.80)		(-0.28)
TP*TS->IB					0.085	0.237***
					(1.24)	(3.39)
Observations	99	300	300	300	300	300
R^2	0.453	0.391	0.417	0.409	0.401	

Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming platform; TS=trust in the live streamer; IB=impulse buying intention.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

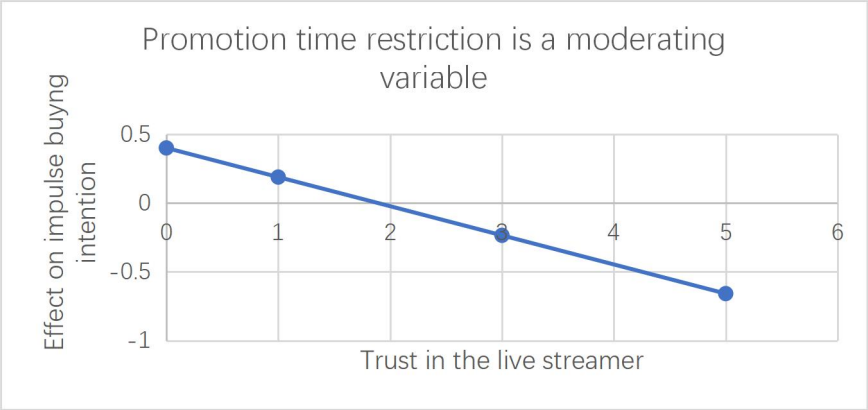
Tab. 3-14 demonstrates trust in the live streaming platform has a positive impact on impulse

buying intention in the low education group (β=0.556; p < 0.01). But all the interaction terms are insignificant.

(2) The high education group

Tab. 3-14 demonstrates promotion time restriction (β=0.183; p < 0.01), material incentives (β=0.161; p < 0.05), trust in the live streaming platform (β=0.341; p<0.01) and trust in the live streamer (β=0.129; p <0.05) have positive impacts on impulse buying intention in the high education group. We select promotion time restriction, material incentives, trust in the live streaming platform and trust in the live streamer as different moderators in the high education group.

Figure 3-14 The partial effect of promotion time restriction



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 PTR*TP+\beta_7 PTR*TS \quad (3.21)$$

The partial effect of PTR

$$=\beta_1+\beta_7 TS=0.402+(-0.212) \text{ trust in the live streamer} \quad (3.22)$$

When the variable of promotion time restriction as a moderating variable in the high education group. From the perspective of mathematics, the slope of trust in the live streamer×promotion time restriction is calculated by formulas (3.21) and (3.22). Fig. 3-13 illustrates the partial effect of promotion time restriction. When the level of trust in the live streamer is very low, the impact of interaction term, that is, trust in the live streamer×promotion time restriction on impulse buying intention is positive. When the level of trust in the live streamer is high, ranging from 2 points to 5 points, the impact of interaction term, that is, trust in the live streamer×promotion time restriction on impulse buying intention is negative.

As shown in Tab. 3-14, the variables of promotion time restriction (β=0.402; p<0.05) and trust in the live streamer (β=0.767; p<0.01) have positive impacts on impulse buying intention in

the high education group. The interaction effect between promotion time restriction and trust in the live streamer on impulse buying intention is significantly negative (β=-0.212; p<0.01). promotion time restriction, as a moderating variable, moderates negatively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator promotion time restriction can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in the high education group. When the level of trust in the live streamer is high, it will inhibit the positive impact of trust in the live streamer on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of promotion time restriction in the high education group.

Figure 3-15 The partial effect of material incentives I

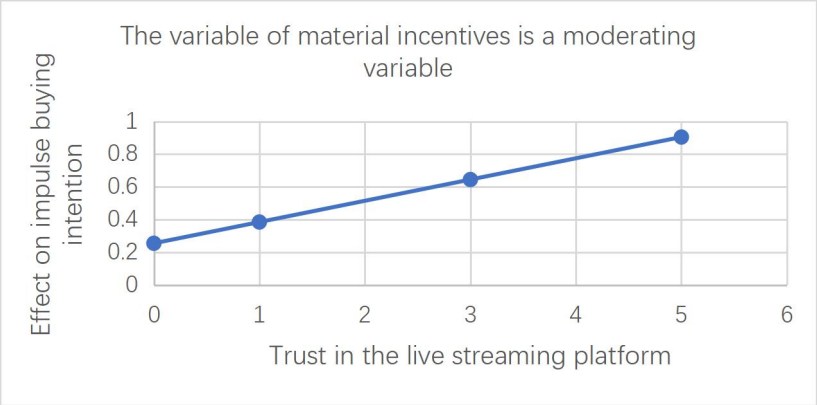
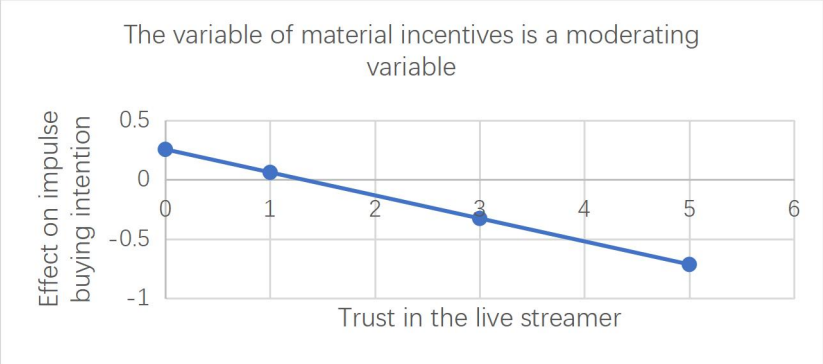


Figure 3-16 The partial effect of material incentives II



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 MI*TP+\beta_7 MI*TS \quad (3.23)$$

The partial effect of MI Ⅰ

$$=\beta_2+\beta_6 TP=0.254+0.129\text{trust in the live streaming platform} \quad (3.24)$$

The partial effect of MI Ⅱ

$$=\beta_2+\beta_7 TS=0.254629+(-0.194)\text{ trust in the live streamer} \quad (3.25)$$

When the variable of material incentives is a moderating variable that may depend on other variables in the high education group.

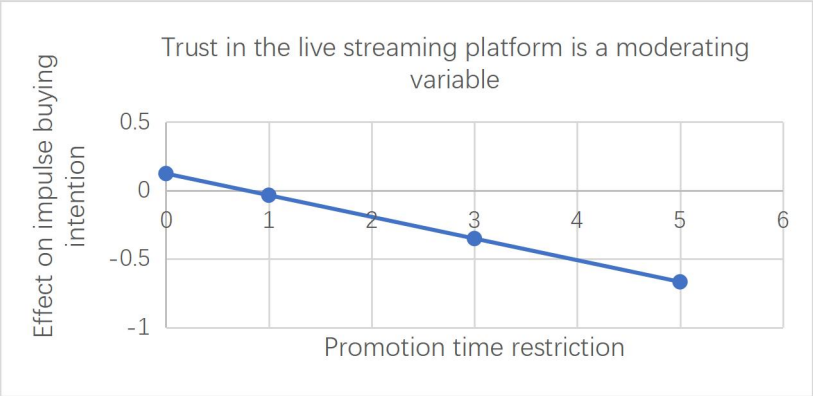
From the perspective of mathematics, the slopes of trust in the live streamer×material incentives and material incentives×trust in the live streaming platform are calculated by formulas (3.23)-(3.25). Fig. 3-14 and Fig. 3-15 illustrate the partial effect of material incentives. With the level of trust in the live streaming platform ranging from 1 point to 5 points, the impact of interaction term, that is, material incentives×trust in the live streaming platform on impulse buying intention is positive. When the level of trust in the live streamer is very low, the impact of trust in the live streamer×material incentives on impulse buying intention is positive. When the level of trust in the live streamer is high, ranging from 2 points to 5 points the impact of trust in the live streamer×material incentives on impulse buying intention is negative.

As shown in Tab. 3-14, trust in the live streamer (β=0.711; $p<0.01$) have a positive impact on impulse buying intention in the high education group. The regression coefficient of the interaction term material incentives×trust in the live streaming platform on repurchase intention is positively significant(β=0.129; $p<0.1$). The interaction effect between material incentives and trust in the live streamer on impulse buying intention is significantly negative (β=-0.194; $p<0.01$). Material incentives, as a moderating variable, moderates negatively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator trust in the live streamer can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in the high education group. When the level of material incentives is high, it will inhibit the positive impact of trust in the live streamer on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of material incentives in the high education group.

The interaction effect between promotion time restriction and material incentives on impulse buying intention is significantly positive (β=0.147; $p<0.05$). Material incentives, as a moderating variable, moderates positively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator material incentives can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in the high education group. When the level of material incentives is

high, it will inhibit the negative impact of promotion time restriction on impulse buying intention, and this significant negative impact relationship will decrease with the increase of the level of material incentives in the high education group.

Figure 3-17 The partial effect of trust in the live streaming platform



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.26)$$

The partial effect of TP

$$=\beta 3+\beta 5\ PTR=0.123+(-0.158)\ \text{promotion time restriction} \quad (3.27)$$

When the variable of trust in the live streaming platform as a moderating variable in the high education group. From the perspective of mathematics, the slope of promotion time restriction×trust in the live streaming platform is calculated by formulas (3.26) and (3.27).Fig. 3-16 illustrates the partial effect of trust in the live streaming platform. When the level of promotion time restriction is very low, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform on impulse buying intention is positive. When the level of trust in the live streamer is high, ranging from 1 point to 5 points, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform on impulse buying intention is negative.

As shown in Tab.3-14, the variable of promotion time restriction ($\beta=0.685$; $p<0.05$) has a positive impact on impulse buying intention in the high education group. The interaction effect between promotion time restriction and trust in the live streaming platform on impulse buying intention is significantly negative ($\beta=-0.158$; $p<0.1$). Trust in the live streaming platform, as a moderating variable, moderates negatively the relationship between promotion time restriction and impulse buying intention, indicating that the moderator trust in the live streaming platform can significantly inhibit the relationship between promotion time restriction and impulse buying

intention, and has a significant negative moderating effect in the high education group. When the level of trust in the live streaming platform is high, it will inhibit the positive impact of promotion time restriction on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streaming platform in the high education group.

Figure 3-18 The partial effect of trust in the live streamer I

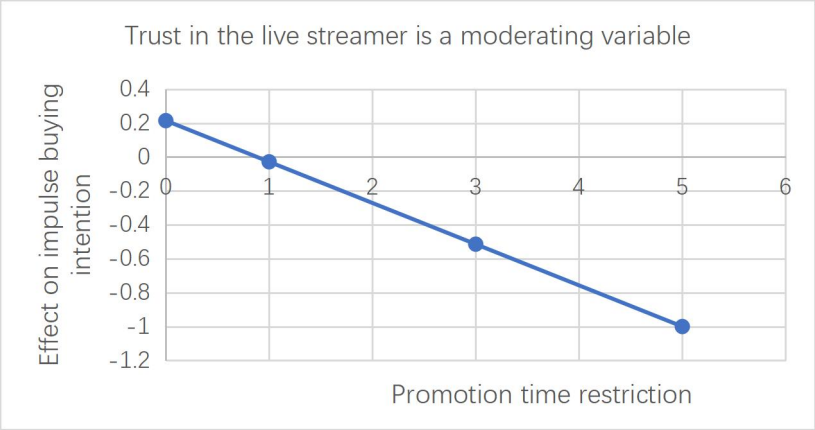
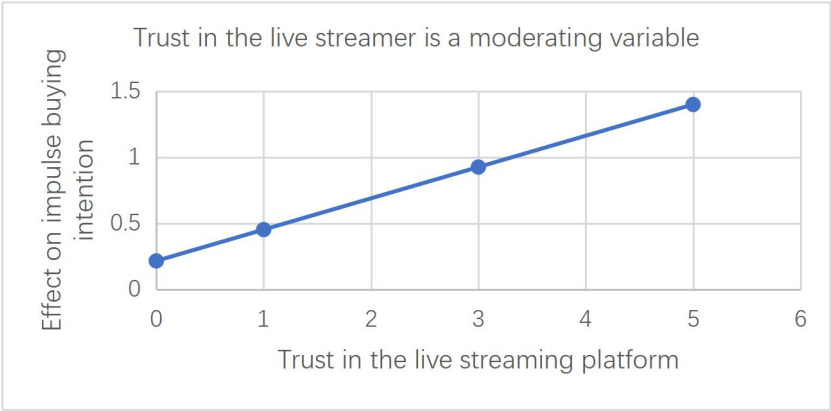


Figure 3-19 The partial effect of trust in the live streamer II



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TS+\beta_6 MI*TS+\beta_7 TP*TS \quad (3.28)$$

The partial effect of TS Ⅰ

$$=\beta_4+\beta_5 \text{ PTR}=0.215+(-0.243) \text{ promotion time restriction} \quad (3.29)$$

The partial effect of TS Ⅱ

$$=\beta_4+\beta_7 \text{ TP}=0.215+0.237 \text{ trust in the live streaming platform} \quad (3.30)$$

When the variable of trust in the live streamer is a moderating variable that may depend on other variables in the high education group.

From the perspective of mathematics, the slopes of promotion time restriction×trust in the

live streamer and trust in the live streamer×trust in the live streaming platform are calculated by formulas (3.28)-(3.30). Fig. 3-17 and Fig. 3-18 illustrate the partial effect of trust in the live streamer. With the level of trust in the live streaming platform ranging from 1 point to 5 points, the impact of interaction term, that is, trust in the live streamer×trust in the live streaming platform on impulse buying intention is positive. When the level of promotion time restriction is very low, the impact of promotion time restriction×trust in the live streamer on impulse buying intention is positive. When the level of promotion time restriction is high, ranging from 1 point to 5 points the impact of promotion time restriction×trust in the live streamer on impulse buying intention is negative.

As shown in Tab.3-14, promotion time restriction (β=0.936; $p<0.01$) has a positive impact on impulse buying intention in the high education group. Trust in the live streaming platform (β=-0.399; $p<0.1$) has a negative impact on impulse buying intention in the high education group. The regression coefficient of the interaction term promotion time restriction×trust in the live streamer on repurchase intention is negatively significant(β=-0.243;$p<0.1$).The interaction effect between promotion time restriction and trust in the live streamer on impulse buying intention is significantly negative. Trust in the live streamer, as a moderating variable, moderates negatively the relationship between promotion time restriction and impulse buying intention, indicating that the moderator trust in the live streamer can significantly inhibit the relationship between promotion time restriction and impulse buying intention, and has a significant negative moderating effect in the high education group. When the level of trust in the live streamer is high, it will inhibit the positive impact of promotion time restriction on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of promotion time restriction in the high education group.

The interaction effect between trust in the live streaming platform and trust in the live streamer on impulse buying intention is significantly positive (β=0.237; $p<0.01$). Trust in the live streamer, as a moderating variable, moderates positively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator material incentives can significantly inhibit the relationship between trust in the live streamer and impulse buying intention, and has a significant negative moderating effect in the high education group. When the

level of material incentives is high, it will inhibit the negative impact of trust in the live streaming platform on impulse buying intention, and this significant negative impact relationship will decrease with the increase of the level of trust in the live streamer in the high education group.

3.5.4.4 Effects of the monthly income on impulse buying intention

According to the different monthly income levels of consumers, they are divided into groups with a monthly income of less than 5000 yuan ($780), groups with a monthly income of 5000-10000yuan($780-$1560) and groups with a monthly income of more than 10000 yuan.

(1) The group with a monthly income of less than 5000 yuan ($780)

Table 3-15 Structural model analysis in groups with different monthly income on impulse buying intention

	Model 1 (<$780)	Model 2 ($780-$1560)	Model 3 ($780-$1560)	Model 4 (>$1560)
PTR->IB	0.265***	0.102	-0.188	-0.064
	(3.34)	(1.40)	(-0.55)	(-0.39)
MI->IB	0.038	0.247***	1.012**	0.173
	(0.40)	(2.99)	(2.61)	(0.94)
TP->IB	0.357***	0.465***	0.450*	0.436**
	(4.60)	(6.01)	(1.72)	(2.55)
TS->IB	0.134*	0.037	-0.407	0.215
	(1.79)	(0.52)	(-1.29)	(1.22)
TP*PTQ->IB			0.091	
			(0.86)	
TP*MI->IB			-0.225**	
			(-2.00)	
TP*TS->IB			0.132	
			(1.42)	
Observations	202	154	154	43
R^2	0.379	0.511	0.526	0.314

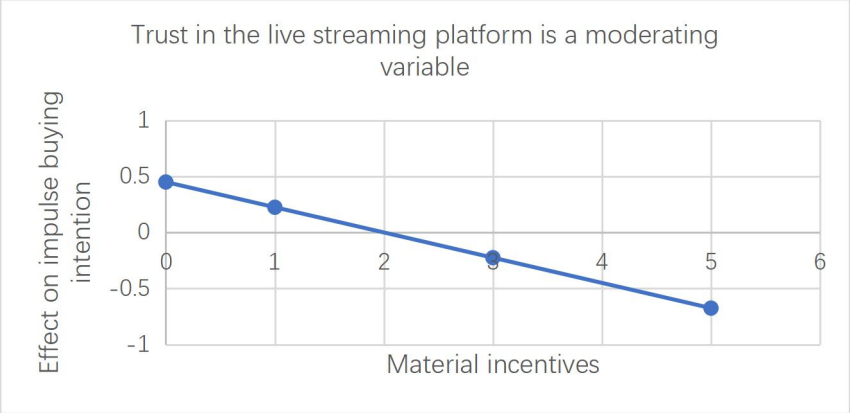
Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming platform; TS=trust in the live streamer; IB=impulse buying intention.

Notes:$^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Tab. 3-15 demonstrates promotion time restriction(β=0.237; p<0.01), trust in the live streaming platform(β=0.237; p<0.01) and trust in the live streamer(β=0.237; p<0.01) have positive impact on impulse buying intention in the group with a monthly income of less than 5000 yuan ($780), that can generate impulse purchase intention of low-income consumers. But all the interaction terms are insignificant.

(2) The group with a monthly income of 5000-10000 yuan($780-$1560)

Figure 3-20 The partial effect of trust in the live streaming platform



Tab. 3-15 demonstrates trust in the live streaming platform has a positive impact on impulse buying intention in the group with a monthly income of 5000-10000 yuan($780-$1560)(β=0.465; p< 0.01). Although the variable of material incentives has a positive impact on impulse buying intention(β= 0.247; p < 0.01), all the interaction terms are insignificant. The variable of trust in the live streaming may depend on other variables. We select trust in the live streaming platform as a moderator in the group with a monthly income of 5000-10000 yuan($780-$1560).

$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.31)$$

The partial effect of TP

$$=\beta_3+\beta 6\ MI=0.450+(-0.225)\ \text{material incentives} \quad (3.32)$$

When the variable of trust in the live streaming platform as a moderating variable in the group with a monthly income of 5000-10000 yuan($780-$1560). From the perspective of mathematics, the slope of material incentives×trust in the live streaming platform is calculated by formulas (3.31)-(3.32). Fig. 3-19 illustrates the partial effect of trust in the live streaming platform. When the level of material incentives is very low, the impact of interaction term, that is, material incentives×trust in the live streaming platform on impulse buying intention is positive. When the level of trust in the live streamer is high, ranging from 3 points to 5 points, the impact of interaction term, that is, material incentives×trust in the live streaming platform on impulse buying intention is negative.

As shown in Tab. 3-15, material incentives (β=1.012; p<0.05) and trust in the live streaming platform (β=0.450; p<0.1) have positive impacts on impulse buying intention in the group with a monthly income of 5000-10000 yuan($780-$1560). The interaction effect between material incentives and trust in the live streaming platform on impulse buying intention is significantly

negative (β=-0.225; p<0.05). Trust in the live streaming platform, as a moderating variable, moderates negatively the relationship between material incentives, indicating that the moderator trust in the live streaming platform can significantly inhibit the relationship betweenmaterial incentives and impulse buying intention, and has a significant negative moderating effect in the group with a monthly income of 5000-10000 yuan($780-$1560). When the level of trust in the live streaming platform is high, it will inhibit the positive impact of material incentives on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of trust in the live streaming platform in the group with a monthly income of 5000-10000 yuan($780-$1560).

(2) The group with a monthly income of over 10000 yuan(over $1560)

Tab. 3-15 demonstrates trust in the live streaming platform has a positive impact on impulse buying intention in the group with a monthly income of over 10000 yuan(over $1560)(β=0.436; p< 0.05). All the interaction terms are insignificant.

3.5.4.5 Effects of the occupation on impulse buying intention

According to the different occupations of consumers, they are divided into students, personnel of public institutions, personnel of government organs, enterprise employees, self-employed and others.

（1）The personnel of public institutions group

Table 3-16 Structural model analysis in groups with different occupation on impulse buying intention

	Model 1 (Public institutions)	Model 2 (Public institutions)	Model 3 (Government)	Model 4 (Government)	Model 5 (Self-employed)	Model 6 (Self-employed)
PTR->IB	-0.034	0.438	-0.042	-1.281*	0.051	-0.020
	(-0.38)	(1.32)	(-0.27)	(-1.76)	(0.44)	(-0.03)
MI->IB	0.414***	0.991***	0.218	0.357	0.122	1.575
	(3.78)	(3.61)	(1.18)	(0.49)	(0.81)	(1.61)
TP->IB	0.389***	-0.670	0.449***	0.733	0.401***	0.314
	(3.99)	(-1.48)	(2.85)	(1.20)	(3.53)	(0.68)
TS->IB	0.109	1.189***	0.058	1.370**	0.062	-1.306**
	(1.21)	(3.09)	(0.41)	(2.20)	(0.59)	(-2.34)
MI*PTR->IB		-0.147				
		(-1.41)				
MI*TP->IB		0.335**		-0.042		-0.427
		(2.42)		(-0.17)		(-1.49)
MI*TS->IB		-0.371***				

		(-2.91)				
TP*PTR->IB				0.401		0.003
				(1.66)		(0.02)
TP*TS->IB				-0.431**		0.434**
				(-2.14)		(2.52)
Observations	99	99	65	65	59	59
R^2	0.525	0.594	0.336	0.407	0.390	0.465

Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming platform; TS=trust in the live streamer; IB=impulse buying intention.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 3-21 The partial effect of material incentives I

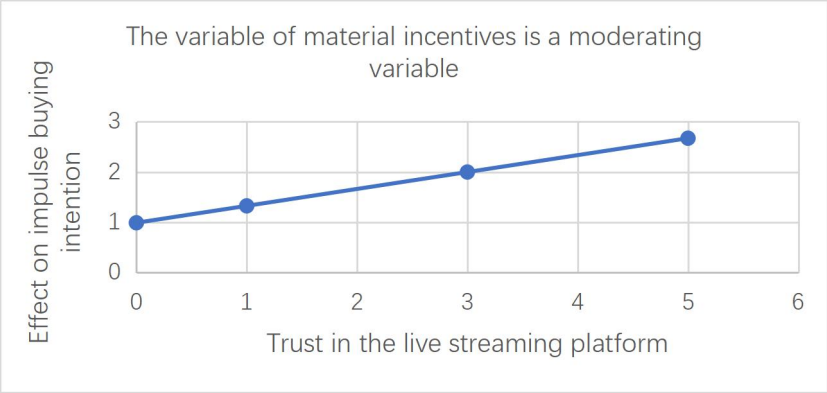
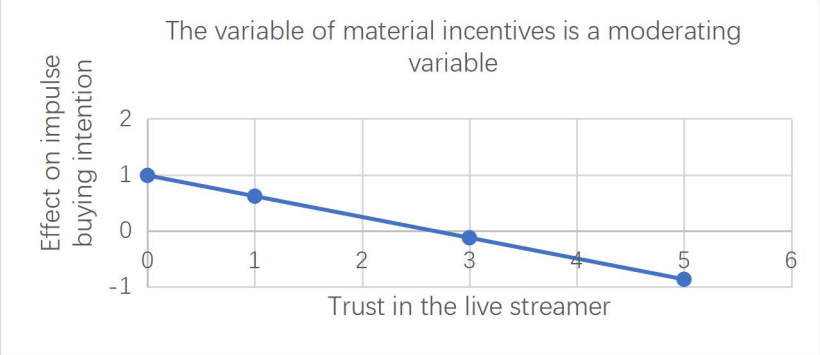


Figure 3-22 The partial effect of material incentives II



$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 MI*TP+\beta_7 MI*TS \quad (3.33)$$

The partial effect of material incentives Ⅰ

$$=\beta_2+\beta_7 TP =0.991+0.335\ TP \quad (3.34)$$

The partial effect of material incentives Ⅱ

$$=\beta_2+\beta_6 TS=0.991+(-0.371)\ TS \quad (3.35)$$

Tab. 3-16 demonstrates the variable of material incentives has a positive impact on impulse buying intention in the personnel of public institutions group (β=0.414; $p < 0.01$). Although trust in the live streaming platform has a positive impact on impulse buying intention (β= 0.389;

p<0.01), all the interaction terms are insignificant. The variable of material incentives may depend on other variables. We select perceived interactivity as a moderator in the personnel of public institutions group.

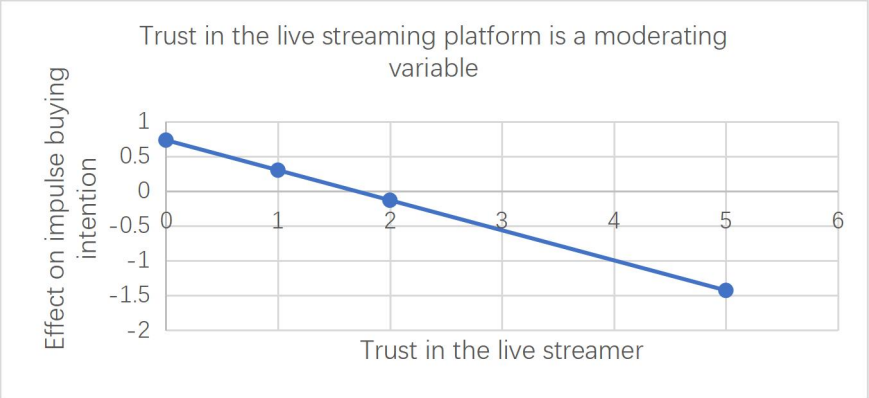
From the perspective of mathematics, the slopes of trust in the live streamer×material incentives and material incentives×trust in the live streaming platform are calculated by formula (1),(41)-(43). Fig. 3-20 and Fig. 3-21 illustrate the partial effect of material incentives. With the level of trust in the live streaming platform ranging from 1 point to 5 points, the impact of interaction term, that is, material incentives×trust in the live streaming platform on impulse buying intention is positive. When the level of trust in the live streamer is very low, the impact of promotion trust in the live streamer×material incentives on impulse buying intention is positive. When the level of trust in the live streamer is high, ranging from 3point to 5 points the impact of trust in the live streamer×material incentives on impulse buying intention is negative.

As shown in Tab. 3-16, material incentives (β=0.991; p<0.01) and trust in the live streamer (β=1.189; p<0.01) have positive impacts on impulse buying intention in the personnel of public institutions group. The regression coefficient of the interaction term material incentives×trust in the live streamer on repurchase intention is negatively significant (β=-0.371; p<0.01). The interaction effect between material incentives and trust in the live streamer on impulse buying intention is significantly negative. The variable of material incentives, as a moderating variable, moderates negatively the relationship between trust in the live streamer and impulse buying intention, indicating that the moderator material incentives can significantly inhibit the relationship betweentrust in the live streamer and impulse buying intention, and has a significant negative moderating effect in the personnel of public institutions group. When the level of material incentives is high, it will inhibit the positive impact of trust in the live streamer on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of material incentives in the personnel of public institutions group. The interaction effect between trust in the live streaming platform and material incentives on impulse buying intention is significantly positive (β=0.335; p<0.05). The variable of material incentives, as a moderating variable, moderates positively the relationship between trust in the live streaming platform and impulse buying intention, and has a significant positive moderating effect in the

personnel of public institutions group.

(2) The employees of government group

Figure 3-23 The partial effect of trust in the live streaming platform



Tab. 3-16 demonstrates trust in the live streaming platform has a positive impact on impulse buying intention in the employees of government group (β=0.449; p< 0.05). The variable of trust in the live streaming platform may depend on other variables. We select trust in the live streaming platform as a moderator in the employees of government group.

$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.36)$$

The partial effect of TP

$$=\beta_3+\beta_7 \text{ TS}=0.733+(-0.431) \text{ trust in the live streamer} \quad (3.37)$$

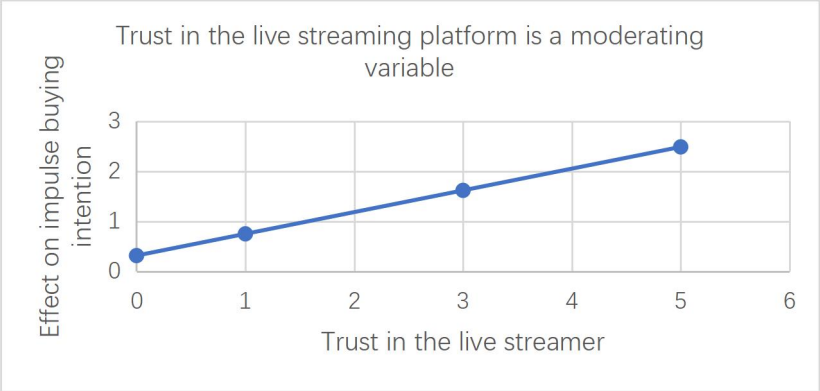
From the perspective of mathematics, the slope of trust in the live streamer×trust in the live streaming platform is calculated by formulas (3,36) and (3.37). Fig. 3-22 illustrates the partial effect of trust in the live streaming platform. When the level of trust in the live streamer is very low, the impact of interaction term, that is, trust in the live streamer×trust in the live streaming platform on impulse buying intention is positive. When the level of trust in the live streamer is high, ranging from 2 points to 5 points, the impact of interaction term, that is, trust in the live streamer×trust in the live streaming platform on impulse buying intention is negative.

As shown in Tab. 3-16, promotion time restriction (β=0.936; p<0.01) has a positive impact on impulse buying intention in the employees of government group. Trust in the live streaming platform (β=-0.399; p<0.1) has a negative impact on impulse buying intention. The interaction effect between trust in the live streamer and trust in the live streaming platform on impulse buying intention is significantly positive (β=0.237; p<0.01). Trust in the live streamer, as a moderating variable, indicating that the moderator trust in the live streamer can significantly inhibit the

relationship between trust in the live streaming platform and impulse buying intention. When the level of trust in the live streamer is high, it will inhibit the positive impact of material incentives on impulse buying intention, and this significant negative impact relationship will decrease with the increase of the level of trust in the live streamer in the employees of government group.

(3) The self-employed group

Figure 3-24 The partial effect of trust in the live streaming platform



Tab. 3-16 demonstrates trust in the live streaming platform has a positive impact on impulse buying intention in the self-employed group (β=0.401; p< 0.01). The variable of trust in the live streaming platform may depend on other variables. We select trust in the live streaming platform as a moderator in the self-employed group.

$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*TP+\beta_6 MI*TP+\beta_7 TP*TS \quad (3.38)$$

The partial effect of TP

$$=\beta_3+\beta_7 TS=0.314+0.434\text{trust in the live streamer} \quad (3.39)$$

From the perspective of mathematics, the slope of trust in the live streamer×trust in the live streaming platform is calculated by formulas (3.38) and (3.39). Fig. 3-23 illustrates the partial effect of trust in the live streaming platform. With the level of trust in the live streamer ranging from 1 point to 5 points, the impact of interaction term, that is, trust in the live streamer×trust in the live streaming platform on impulse buying intention is positive.

As shown in Tab. 3-16, trust in the live streamer (β=-1.306; p<0.05) has a negative impact on impulse buying intention in the self-employed group. The interaction effect between trust in the live streamer and trust in the live streaming platform on impulse buying intention is significantly positive (β=0.434; p<0.05). Trust in the live streaming platform, as a moderating variable, indicating that the moderator trust in the live streaming platform can significantly inhibit the

relationship between trust in the live streamer and impulse buying intention. When the level of trust in the live streaming platform is high, it will inhibit the negative impact of trust in the live streamer on impulse buying intention, and this significant negative impact relationship will decrease with the increase of the level of trust in the live streaming platform in the self-employed group.

3.5.4.6 Effects of the length of time on impulse buying intention

According to the length of time consumers watching the live streaming, it is divided into 15 minutes, 15-30 minutes, 30-45 minutes, 45-60 minutes and more than 60 minutes. All the interaction terms are insignificant in other groups, except in the 15 minutes group.

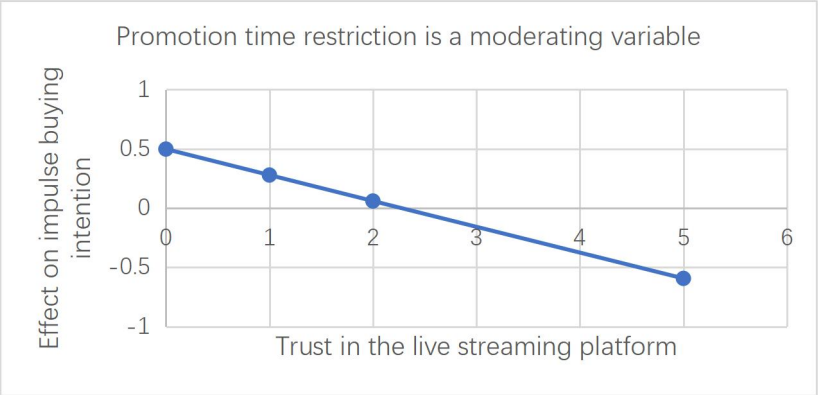
Table 3-17 Structural model analysis in groups with different length of time on impulse buying intention

	Model 1 (<15)	Model 2 (<15)	Model 3 (15-30)	Model 4 (30-45)	Model 5 (45-60)	Model 6 (>60)
PTR->IB	0.441***	0.497			0.247**	
	(2.93)	(1.59)			(2.33)	
MI->IB	0.014	-0.037	0.278**	0.279**		
	(0.09)	(-0.12)	(2.08)	(2.47)		
TP->IB	0.383***	0.815***	0.433***	0.265**	0.282*	0.626***
	(3.71)	(4.02)	(3.43)	(2.37)	(1.87)	(5.31)
TS->IB	0.028	-0.244				0.206*
	(0.26)	(-0.75)				(1.93)
PTR*TP->IB		-0.219**				
		(-2.40)				
PTR*TS->IB		0.125				
		(1.08)				
PTR*MI->IB		0.070				
		(0.60)				
Observations	56	56	81	108	69	85
R^2	0.601	0.646	0.406	0.296	0.283	0.426

Notes: PTR=promotion time restriction; MI=material incentives; TP=trust in the live streaming platform; TS=trust in the live streamer; IB=impulse buying intention.

Notes: $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Figure 3-25 The partial effect of promotion time restriction



Tab. 3-17 demonstrates promotion time restriction (β=0.441; p< 0.01) has a positive impact on impulse buying intention in the 15 minutes group. Although trust in the live streaming platform has a positive impact on impulse buying intention (β=0.383; p< 0.01), all the interaction terms are insignificant. The variable of promotion time restriction may depend on other variables. We select promotion time restriction and trust in the live streaming platform as a moderator in the 15 minutes group.

$$IB=\alpha+\beta_1 PTR+\beta_2 MI+\beta_3 TP+\beta_4 TS+\beta_5 PTR*MI+\beta_6 PTR*TP+\beta_7 PTR*TS \quad (3.40)$$

The partial effect of PTR

$$=\beta_1+\beta_6 \text{ TP}=0.497+(-0.219) \text{ trust in the live streaming platform} \quad (3.41)$$

When promotion time restriction is a moderating variable in the 15 minutes group. From the perspective of mathematics, the slope of promotion time restriction×trust in the live streaming platform is calculated by formulas (3.40) and (3.41). Fig. 3-24 illustrates the partial effect of promotion time restriction. When the level of trust in the live streaming platform is low, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform on impulse buying intention is positive. When the level of trust in the live streaming platform is high, ranging from 3 points to 5 points, the impact of interaction term, that is, promotion time restriction×trust in the live streaming platform on impulse buying intention is negative.

As shown in Tab. 3-17, trust in the live streaming platform (β=0.815; p<0.01) has a positive impact on impulse buying intention in the 15 minutes group. The interaction effect between promotion time restriction and trust in the live streaming platform on impulse buying intention is significantly negative (β=-0.219; p<0.05). Promotion time restriction, as a moderating variable, indicating that the moderator promotion time restriction can significantly inhibit the relationship

between trust in the live streamer and impulse buying intention. When the level of promotion time restriction is high, it will inhibit the positive impact of trust in the live streaming platform on impulse buying intention, and this significant positive impact relationship will decrease with the increase of the level of promotion time restriction in the 15 minutes group.

3.6 Conclusion, inspiration and outlook

This part is the summary of the whole paper, including the following aspects: first, the summary of hypothesis testing; second, the research conclusions; third, the Enlightenment of marketing management; fourth, the shortcomings of this study and the future prospects of follow-up research.

3.6.1 Summary of the hypothesis test results of this research

The research in this thesis has tested 9 hypotheses and their sub-hypotheses. From the experimental results, most of the hypotheses are valid. In the live streaming scenario, mobile terminal marketing stimulus has a significant positive impact on consumers' impulse purchase intentions.

Through the results of variance analysis and linear regression analysis, it can be determined that mobile terminal stimulation has a significant positive impact on consumers' impulsive purchase intentions. Similar conclusions have been drawn in previous studies by scholars. Rook and Fisher (1995) indicate that impulse buying behavior is almost entirely induced by stimulation. A wide range of marketing promotions and cues can stimulate instant buying tendencies (Youn and Faber, 2000).The empirical test results of this experiment again verified this conclusion. Moreover, through regression analysis under different online promotion methods, it can be seen that promotion time restriction and marketing incentives both have a significant positive impact on consumers' impulse purchase intentions.

3.6.2 Analysis conclusion

The research of this paper focuses on the current live broadcast that has become the normalcy, and pays attention to the perception and behavior of Chinese consumers in the context of mobile

live commerce. From the traditional perspective of promotion, the marketing research, the paper establishes a research framework composed of online promotion, consume trust and impulse buying intention, verifies a series of hypotheses under the research framework, and reached the following main conclusions:

（1）Mobile terminal stimulation has a significant impact on consumers' impulsive purchase intentions

With the popularization of Internet technology and online shopping, mobile shopping has become a new territory for Chinese businesses to compete for consumers. Specifically, during the crisis of Covid-19, Chinese consumers' demands and purchasing behaviors have been changing fundamentally, which makes it much more significant for a firm to rely on innovating its marketing strategies for survival. For example, people must isolate themselves at home and decline physical contact to prevent infection; thus, firms must pay more attention to developing and strengthening their online business. In the three months since the end of Jan. 2020, China's economy has been heavily influenced by the Covid-19 crisis. People are showing great concern about health and safety, which has resulted in fundamental changes in their preferences and purchasing patterns. Live commerce has become one of the most popular purchasing patterns in China.

Promotions generally exist in commercial sales. Studies by former scholars have confirmed that the impact of promotion on consumer perception and behavior exists in many aspects, such as consumers' purchase intentions, perceived benefits, and so on. Chia-Chen Chen and Jun-You Yao(2018) showed that when the promotion offers a limited supply of products within certain time limits, consumers think the promoted products have a good sale and selling extremely well. Therefore, they have the performance of impulse buying behaviors. This research focuses on the impact of time pressure restrictions and material incentives on consumers' impulse purchase intentions in live streaming. Through empirical analysis, it is confirmed that in the context of live streaming, mobile terminal promotions have a direct and significant positive impact on consumers' impulse purchase intentions.

（2）Customer trust have a significant effect on consumers' impulse buying intention

This paper mainly studies the impact of trust on consumers' impulse purchase intention

through two aspects: the trust in the live streamer and the trust in the live streaming platform. The higher the trust of the live streaming platform and the live streamer, the more likely consumers would develop positive attitude towards impulsive buying intentions. Base on this finding, it coincides with the findings of preceding authors (Norazah Mohd Sukia and Norbayah Mohd Suki ,2017).At present, the more common live steaming platforms in the Chinese market include Taobao, T-mall, Tik Tok JD.COM, Kwai, Xiaohongshu, MOGU and so on. These live streaming platforms themselves are shopping websites with a relatively high reputation and good reputation in the Chinese market, and they have high traffic. If merchants choose to carry out live commerce on these live streaming platforms, it will increase consumers' desire to buy to a certain extent. As in the interview process, interviewee 8 also said: "At the same time, I will choose to watch the live commerce of Taobao, T-mall and JD.com because they have better after-sales service and supervision measures. Their live streaming products are also more trustworthy."

In the context of live commerce on the mobile terminal, under the stimulus of time pressure, the more trust the live streaming anchor is under the stimulation of promotion time restriction, the higher the impulse purchase intention of consumers does not appear. As consumers' buying behavior becomes more and more rational, the requirements for anchors are becoming higher and more standardized. The conclusion can be drawn from Tab. 3-18: Professional knowledge remains the most important quality of live streamer, followed by logical analysis and language expression. Thus it can be seen， in live commerce format, Live streamers are different from other live shows and game anchors. Consumers pay more attention to the products introduced by the anchors rather than the anchors themselves. Under normal circumstances, in the case of live commerce, the merchant will set a very short promotion time. If the consumer is required to make a decision to buy or not during the limited promotion time, if the consumer is not clear about the product itself, there will be no impulsive purchase intention. So for those merchants who often spend big money to invite beautiful and handsome guys as anchors to sell goods on live streaming, you can think about it. If the recommended products that the live streamer don’t understand are just good-looking or handsome, is it necessary for the enterprise to spend the money to invite them to be the anchor?

Table 3-18 What do you think is the most important quality of live streamer

Options	Total	Proportion
Language expression,	244	52.03%
Professional knowledge	277	59.06%
Logical analysis	246	52.45%
Communication and interaction	243	51.81%
On-site control ability	205	43.71%
Age	114	24.31%
Facial attractiveness	90	19.19%
Gender	37	7.89%

In the context of live commerce on the mobile terminal, with material incentives, the more trust the live streamer is, the higher the consumer's willingness to buy on impulse. This is basically consistent with the views of previous scholars. Nikolaos Pappas（2016） indicate, product and network supplier trust almost equally affect consumers' purchase intention.Trust is a cumulative process. The accumulation of fans, daily interactions with fans, store sales or endorsement products after consumers use word-of-mouth, etc., all have a great impact on their trust. At the same time, in the process of live commerce, the host’s professional description of the product and the answers to the questions in the fan interaction process, including personalized recommendations, will enhance consumers’ trust and increase consumers’ impulse purchase intentions. As in the interview process, interviewee 10 also said: “I like to watch Li Jiaqi’s live commerce. I trust him. Even though I have never heard of or used the products he recommends, the small gifts he gave me are very good. I want to buy those useful small gifts to try."

3.6.3 Marketing enlightenment and Management Suggestion

3.6.3.1 Marketing enlightenment

The conclusions of this paper have the following marketing implications for the enterprises that carry out live commerce:

（1）Through empirical analysis, this research once again confirms that in the context of live commerce, mobile terminal promotions have a direct and significant positive impact on consumers’

impulse purchase intentions. Therefore, retail e-commerce companies should pay attention to the comprehensive application of different promotion methods and methods in the process of live streaming.

（2）This study found that in the context of live commerce, under the promotion time restriction and material incentives, the more trusting the live streaming platform, the higher the consumer's willingness to buy impulsively. However, under the promotion time restriction, the more trusting the live streamer, the higher the consumer's impulsive purchase willingness did not appear. Therefore, when e-commerce companies choose live streaming platforms, they should try their best to choose those well-known and trustworthy big brand platforms, which will increase consumer trust to a certain extent. For the choice of live streamer, we should not only pay attention to whether the live streamer is beautiful, but also carry out relevant training for the live streamer, so that they can understand the products recommended by the live streaming and make consumers feel the same.

3.6.3.2 Management advice

Neither promotion time restriction nor material incentive can arouse the impulse purchase intention of all consumers. Compared with material incentive, promotion time restriction can only bring consumers' impulse purchase intention in a few groups. It is recommended that the live streaming enterprise should not use promotion time restriction every time during the live streaming process.

At present, there are many kinds of live streaming platforms in the Chinese market. Selecting a live streaming platform with high matching degree. The professional platform can provide professional support. For enterprises that want to sell goods through live streaming, they should choose a live streaming platform with good popularity, reputation, service and reputation, which is very helpful to improve consumers' impulse purchase. When selecting live streamers, live streaming businesses should carefully examine and distinguish， and then select the live streamer with high reputation. Live streaming enterprises should pay attention to the choice of live streaming platform and the live streamer, because consumers' trust in the live streaming platform and the live streamer affect consumers' impulse purchase. In addition, live streaming businesses should also pay attention to the professionalism of the live streamer. While looking at the

professionalism, live streaming businesses should also look at the data. live streaming businesses should know whether the gender, age, region, interests and preferences of the live streamer's fans are consistent with the positioning of the whole brand products. Because of these basic data matching, it can bring more orders in the process of live streaming.

3.6.4 Limitations and directions for future research

Due to the restrictions of the results of this research, we hereby present the main limitations of this study.

First, we employed cross-section data to verify the relationship in the research model instead of utilizing an experimental approach or longitudinal studies which could provide powerful inference about causality (Dillon & Goldstein, 1984). Whether the participant's answer is true or not, or whether there is an answer bias in the participant's answer is the main limitation of the survey method. In addition, the survey method is optional, and the questionnaire participants in this study are active online users. However, due to resource and time constraints, many researchers exert cross-sectional research as an exploratory tool to examine the relationship between purchase behaviors. It is precisely because of the limitations of the survey method that the actual behavior may not be accurately measured. Future research can employ experimental or longitudinal methods to test consumers' buying behavior.

Second, there are many mobile stimulating factors influencing impulse buying. The study only investigated two of them. Hence, future studies may provide more insights if different mobile characteristics can be taken into consideration. Future studies may include more website attributes and organic variable into the model for a more complete understanding for online impulse purchase in the context of live commerce.

Third, in the case of live commerce, the products purchased by mobile shoppers are not distinguished. This paper researches on consumer mobile shopping in the context of live streaming. However, due to the variety and complexity of products, the price range varies greatly in the sales of mobile e-commerce. Therefore, in the process of research, this paper does not intend to distinguish the impact of different commodity categories on the impulse purchase of mobile shopping. However, due to the differences between the categories of goods, consumers purchase

goods for different purposes, and their psychological and behavioral effects on the impulse purchase of mobile shopping consumers have their own particularity. However, due to the limitations of conditions, this paper only explains its universality. In the following research, further exploration will be exerted to better clarify the mechanism of impulsive buying behavior when consumers are watching live streaming.

Future research, in general, can be extended to include other perspectives, such as the cultural issues on the effectiveness of scarcity promotion for impulsive purchase, the effect of mood on satisfaction when post-purchase messages are increased in numbers and argument strength, and the repurchase after an impulse buying to better understand impulse buying behavior against the backdrop of live streaming.

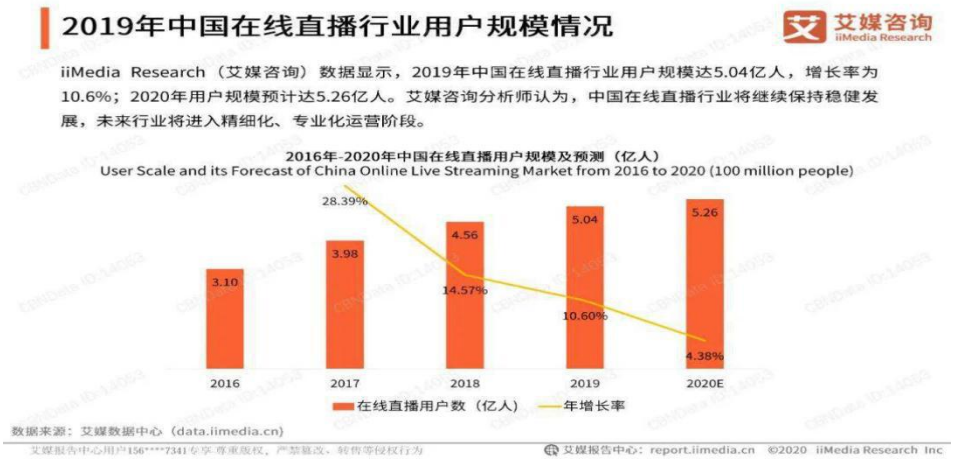
Chapter 4:Brand Marketing Strategy of Live Streaming in Mobile Era — A Case Study of Tmall Platform

4.1 Introduction

In the three months since the end of Jan.2020, China’s economy has been heavily affected by the COVID-19 crisis. People are showing great concern about health and safety, which has led to fundamental changes in their preferences and purchasing patterns. Therefore, in line with deep insight into the modification in consumers' psychology and behaviors during home isolation, many firms and even some leading retailers choose to use e-commerce livestreaming as a new channel that can be adapted to the policy of home quarantine and makes it more convenient for consumers to obtain access to the products or services what they need.

“Live streaming" has become a marketing hot spot of this modern era. Prior to the rise of Pan live streaming, the traditional live streaming were mere shows and games. However, the emergence of the Pan live streaming ushered in large number of professional generated contents (PGC) and user generated contents (UGC) in the live platform. As a result of this, live streaming is no longer a mere tool but an integrated medium of values to industries. In 2016, the statistical data of the In-depth Research Report on business model innovation and investment opportunities of China's online live streaming industry released by the prospective industry research institute revealed that the number of live streaming users in China exceeded 300 million (Fig. 1). After the tremendous growth in China's online live streaming industry in 2016, many industries returned to rationality and this affected the healthy growth of the market. By 2017, the number of users of China's live network has grown to 398 million, an increase of 28.39% compare to the previous year. In 2018, there was 14.57% increase in the growth rate with 456 million users. As the year 2019 saw a growth rate slightly above 500 million, it is expected that the number of live network in China will undoubtedly increase sporadically in 2020 due to the impact of the global pandemic outbreak of COVID-19 in Wuhan late 2019 thereby making 2020 an era of "live delivery for all".

Figure 4-1 2016 - 2020 user scale and its forecast of China online live streaming



The digital age has changed consumers' expectations of branded communications. Brand marketing as an eternal content of enterprise in the market competition has evolved and developed in the continuous practice. From traditional hawking advert, outdoor, and TV advert, to point-to-point adverts on the network. This is reflected in the development of media applications such as Weibo, and Wechat etc. for marketing through ad ins. Thus, the renewal of media forums has created new marketing method for the brands. For enterprises, mobile live streaming makes up for the defects of marketing communication of enterprises. In addition to forums such as Microblogs, Zooms, and Wechat, there is more three-dimensional and vivid marketing platform that displays corporate culture, shaped corporate image and voice more comprehensively and systematically anytime and anywhere. For audiences and consumers, it lavishes a strong sense of participation due to the fact that they can participate in the production of content. This does not only brings new marketing opportunities for enterprises, but also provides an all-round marketing means for the publicity of enterprise brands. Hence, the powerful and rapid communication ability of mobile live streaming and diversified network of live streaming platform can further improve the precision marketing of enterprises. In mobile live streaming, since live streaming has higher media richness, you can watch it in more detail through video. Compared with the previous forms of images and texts, video information is more authentic. At the same time, it can be communicated through chat rooms and bullet screens.

This paper takes Tmall study platform as the case study to examine the current situations, methods, problems, and development strategies of brand marketing activities associated with the

help of live streaming platform under the background of mobile Internet.

4.2 Live brand marketing

4.2.1 Live brand marketing

As early as 2016, live streaming platform was generally understood to be closely related to the development of mobile internet. The continuous development of the live streaming economy, the arrival of the national live streaming, and the emergence of the epidemic outbreak of COVID-19 etc. have greatly contributed to an influential and large-scale pathway way for online live streaming. Everyone has the opportunity to publicize and attract customers to their brand products through the content presented to the public. In addition, with the rapid development of 4G and 5G networks, the mature application of mobile payment technology has opened up a new situation in the development of China's live streaming industry. Particularly, the recent rise in smart phones products have accounted for promoting the rapid transition from live network to mobile terminals thereby forming a new communication mode that is mainly rely on mobile live network to attracting large number of subscribers to the live users network in the upsurge of national use. This new marketing mode came with low threshold, high popularity, low cost, and high efficiency that favored personal and enterprise brands and mobile live streaming and has become one of the most popular marketing means at present.

Although domestic and international live streaming has existed for a long time, the early stage is mostly in the game industry. The development of game live streaming and show live streaming is earlier. The marketing activities of enterprise brand in cooperation with live streaming platform are also developed along with the emergence of Pan entertainment live broadcasting. The development of pan entertainment live streaming and the enthusiasm of the whole people to participate in live streaming also make enterprises and brands start to pay attention to live streaming (Xue Shenglanet al.2015). Advertising has also quickly infiltrated into the online live streaming platform. Some stars or online celebrities will "directly" or "indirectly" publicize a brand or promote some products to the audience in the live streaming process. This star effect and online red effect will largely help the enterprise or product "make headlines", "rub heat" and "rush sales", so as to promote the enterprise The brand promotion and product sales of

the enterprise will affect the image of the enterprise brand in the eyes of consumers.

COVID-19 has spread all over the world, and firms in most countries are grappling with a huge crisis. Especially during the COVID-19 pandemic in China, government officials sold the products of their local cities adopting the way of live streaming, bringing the sales volume of products up, stimulating the local economic development and promoting the local brand, along with popular CEOs of many firms go into live streaming rooms and present good selling points for their offerings (Yonggui Wang,Aoran Hong et al,2020). Successful brand communication should boost engagement and reactions from users (Uşakli et al., 2017). On social media platforms, users' likes, shares, forwards and comments make participation quite transparent (Kabadayi& Price, 2014; Oviedo-García et al. 2014). Therefore, mobile live streaming provides an opportunity to act as a relationship tool for brand communication, and further enhances the marketing activities between consumers and brands.

Chunna Ma (2017) summed up the definition of online live brand marketing according to the characteristics of brand marketing and online live streaming. She believed that online live brand marketing is a marketing activity for enterprises to make use of online live streaming platform, produce and release live video anytime and anywhere, and disseminate brand information and achieve marketing goals. Live brand marketing mainly refers to the online marketing activities carried out by the enterprise's brand in the form of online live streaming. Just like a TV program, select a certain theme, invite the host and select a certain space. Through a live port, you can open a live room similar to the exclusive room for live streaming. The live streaming content of brand live marketing is mainly related to the corporate brand, such as the corporate brand activities, endorsement activities, new product press conference, product promotion activities, etc. the live broadcast forms are mostly product display, activity performance, etc. the live broadcast platform is used to interact with consumers in real time.

4.2.2 Advantages of live brand marketing

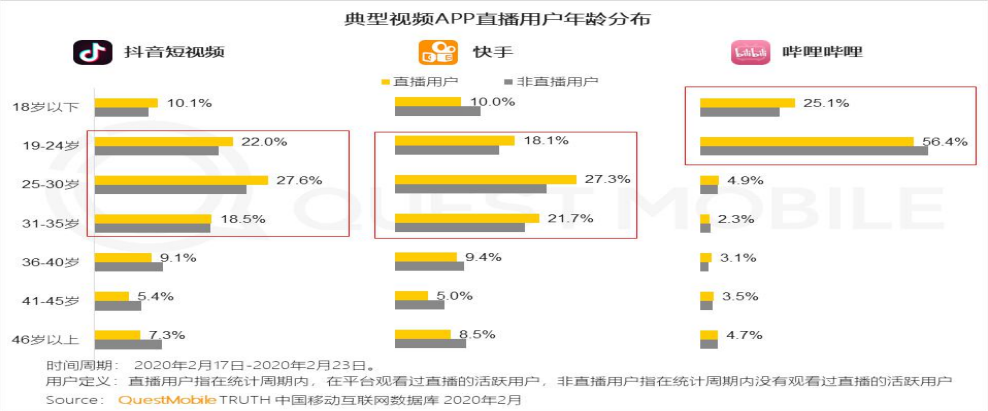
Live streaming itself has the characteristics of real-time interaction and scene authenticity. First, live streaming provides a new channel for brand marketing. Dedeoglu et al. (2020) analyze social media can exert influence on the brand awareness of destinations, so organizations should

invest in such communication in order to increase and enhance their understanding of potential consumers. Along these lines， as a new form of enterprise brand marketing, live streaming platform has unique marketing channel advantages. On one hand, due to the development of mobile Internet and the popularity of mobile network and smart phone, consumers can watch the live streaming they want anytime and anywhere, not only playback and on-demand, but also have real-time interaction and questioning with the live broadcast subject, so as to increase consumers' sense of participation (Mao Yaling,2018).

At the same time, the efficient propagation speed and strong interaction of mobile network live streaming make consumers use their own interpersonal circle for communication, which can either be face-to-face publicity, or forwarding by Wechat moments, micro blog, etc., to better expand brand awareness and reputation. Likewise, consumers can buy goods while watching the live streaming of products at their comfort zone. With the help of the big data, information from brand marketing platforms can be accurately shared among the targeted consumers.

Additionally, the live streaming has a certain user scale, strong user stickiness and certain consumption ability. During the crisis, this type of social media platform wined huge market growth (199IT, 2020). At the same time, firms such as museums and movie theaters were unable to generate revenue because of home quarantine. It is extraordinarily hard for these types of offline firms to build a new online business. Therefore, Tik Tok tapped deep the needs of potential users and rolled out new services such as online exhibitions, online movie playback, and online education in the livestreaming sector (199IT, 2020). In Fig. 4-2, it mainly shows the age distribution of users of the three most popular live streaming platforms (Tik Tok, snake video and BiliBili APP). Among the users who use Tik Tok to watch the live streaming, 27.6% of the users are 25-30 years old, and 27.3% of the users who use snake video to watch the live streaming are 25-30 years old 56.4% of the users watching the live streaming of app are 19-24 years old. From the distribution of age level, the users watching live streaming are becoming younger and younger. These young groups have their own sources of income, have certain consumption ability, are willing to accept new things, and are used to online shopping.

Figure 4-2 Age distribution of three typical live video app users



Third, compared with traditional marketing, live brand marketing is more attractive and diversified in content form. A live streaming that can bring brand exposure and sales transformation is largely determined by "content". The emergence of COVID-19 and the consolidation of Web 2.0 have modified the way people communicate and interact with consumers. At present, user-generated social media communication continues to shoot up and have been received a warm welcome by ordinary Chinese.

The content of live streaming is the organic integration of BGC + PGC + UGC. PGC (professional generated content). Nowadays, most enterprises rely on PGC for their live broadcast marketing. The most important role of BGC (brand generated content) is to show the values, culture and connotation of the brand. UGC (user generated content), allows consumers to be immersed in live content and interact spontaneously in the "mobile + interaction" mode, as outlined by Koch and Benlian (2015), addressing customers by their names in online messages can create more personal interactions and help consumers identify themselves Be regarded as the intended recipient of caring communication. Through the increase of user participation, the brand sales will eventually increase. Live streaming is one of the best ways to do it.

4.3 Analysis of the current situation of live brand marketing

4.3.1 Theoretical background

4R theory is also known as 4R marketing theory. It takes relationship marketing as its core and focuses on the establishment of partnership and loyal customers for the relationship management and maintenance between enterprises and customers. Based on Morgan and Hunt's

(1994) conceptualization, the relationships are considered the firm (the brand) and the customers (the fans) during live streaming. The four essential elements of 4R marketing theory are Relevancy, Reaction, Relationship and Reward.

Relevance: It thinks that the enterprise and the customer are the main body, and regard the long-term customer relationship as the core content of the business operation. The live streaming focuses on maintaining fans. When fans reach a certain number, they can build their own communities. These fans are not only potential customers of the company, but also the disseminators of the corporate brand. The live streaming has created a new communication platform for brand communication and a fresh way to show a product's capability to users in real time. Enterprises can attract users by planning some creative and attractive marketing content, display their brand, products or services on the live streaming platform, and conduct two-way communication with customers at a deeper level, so that they are willing to promote to their relatives and friends. In this way, the brand information will be spread, the effect of this brand communication channel has always been recognized by entrepreneurs.

Reaction: It refers to that the company attaches great importance to consumer feedback on the company's commercial activities, products or services. On the live streaming platform, it can timely use barrage or chat windows to understand consumers' opinions on brands and products, and provide real-time feedback and solutions to their problems. The immediacy of the feedback mechanism and the timeliness of problem-solving can bring more to the enterprise brand support.

Relationship: In the context of live commerce on mobile terminals, the development of a good relationship between enterprises and customers, common development and common progress, is conducive to the spread of the brand and achieves a win-win situation.

Reward: This aspect emphasizes the correct handling of various contradictory interests in marketing activities. In the context of live commerce on mobile terminals, the live streaming host must interact with customers in time, give timely answers to their questions, and understand their views on the brand. Giving them more attention is also a kind of spiritual reward.

According to the 4R theory, we can see the importance of maintaining customer relationships. Under the background of mobile network live broadcast, the content of activities is rich. Due to the low stickiness of users, it is easy to be attracted by multiple activities, so it is very

important to maintain good customer relationship. First, companies can build their own Wechat moments; second, they must collect user feedback in a timely manner and resolve them in time; second, communicate with customers, focusing on customer demands, and maintain customer relationships; and finally, integrate mobile live streaming content with brand activities are linked to certain preferential policies, real-time attention to user demands, and enhance consumers' loyalty.

4.3.2 Introduction to Tmall live platform

Tmall as an online shopping platform was created for as one of Alibaba's subsidiaries for consumers satisfaction. The platform is composed of many authorized stores and flagship stores of famous brands. Unlike Taobao which has a large number of ordinary Taobao sellers that is characterized by personalized operation of stores, Tmall is a live platform launched by Alibaba, which is positioned as "consumer live". Consumers can realize the shopping mode of procurement while viewing on the platform.

4.3.3Live brand marketing mode in Tmall platform

4.3.3.1 The integration of online live streaming and offline marketing activities

Tmall as a special shopping platform for consumers have a certain degree of brand awareness that fosters adequate communication between consumers of similar brand. In the live streaming process, different consumers can ask questions about the new brand products of the enterprise. Such activities enable consumers to have a better understanding of the characteristics of the products and services offered by the platform. The barrage in live streaming can mobilize the enthusiasm of the consumers well. Through the release of the bullet curtain, fee and like-minded people establish ties and communicate with each other to further promote brand relationship marketing (Wang Yan,2018). Brand online live streaming, Microblog, Wechat and other marketing communication channels, as well as online and offline outdoor advertising, TV advertising, etc., are conducive to increase the exposure and arrival rate that will enhance the smooth development of marketing activities.

For instance, during the Rio Olympic Games, KISSCAT followed the hot spot to open its

first live show. The three popular internet celebrity "test shoes officer" relay live streaming which contributed to its popularity and high traffic volume. As a result of this, sales volume has risen sharply for KISSCAT stores, Tmall flagship stores and WeChat official account.

After the live streaming, the topic on the discussion of social platforms such as Microblog and Wechat will also became another hot spot of marketing. Open social platforms are more likely to create viral communication of hot content through post interaction, as well as likes and comments among different consumers. Therefore, the brand's live activities can maximize the degree of its consumers participation and loyalty in the three links of the pre-publicity preheating, the interaction in the live streaming and the hot discussion in the later stage.

4.3.3.2 Promoting brand promotion and improve liquidity

According to survey, Tmall platform has the highest cooperation intention of all brands. Many brands will choose Tmall live as the platform for live streaming for launching their new. Compared with other platforms, brand merchants are more willing to introduce stars and resources into Tmall platform in order to maximize the effect of brand marketing. Compared with the offline complex procedures, using the convenient internet to directly publish information for dissemination can form a word-of-mouth effect of "one to ten, ten to 100", mobilize fans' enthusiasm for participation, and know the release of new products in the brand press conference anytime and anywhere, including product performance, price, sales channel and evaluation of purchase users, and directly book and purchase online.

In August 4, 2016, Oreo joined hands with Wowkie Zhang and Joker Xue to launch a new product of two flavored biscuits on Tmall. In the early stage, the number of previews was more than 28 million. Within one hour of live streaming, the number of fans' interaction reached more than 3 million. The sales volume of Oreo brand on Tmall's day was six times higher than that of normal times. The number of new customers in Oreo flagship store of Tmall accounted for more than 91%. Tmall platform can provide a channel for branding industries to display their products and consumers can purchase at the same time. Thus, when watching the live streaming of new products, it can complete the shopping order and directly convert the live broadcast traffic into cash.

4.3.3.3 Use of celebrity to boost traffic

The use of celebrities can have a strong personal effect on branding. For instance, during advert placement can aid in attracting fans that sees them as model to Tmall's platform. The effect of celebrity own traffic can help brands get a high degree of attention before they carry out live marketing activities.

In April 2019, Han Wang and Lele Yang, well-known hosts of Hunan Satellite TV, who were from the same as Xiang Li, visited Taobao live streaming rooms. At the end of April, Wang Han and Lieerbao, the top 5 anchor of Taopai, broadcast the pear paste of Dangshan in Anhui together. This Dangshan pear cream sold 120000 bottles in two live broadcasts of Li Xiang and Wang Han, with sales exceeding 2 million, bringing a sharp increase in the sales of local agricultural products. As a result of this, product and sales accelerated consumers understanding of the new products from live streaming. Meanwhile, the live streaming activity gained ground, improves the brand's popularity and reputation, and realizes the successful transformation from traffic to product sales.

4.4 Problems in live brand marketing

4.4.1 Blindness and negative effects of brand live streaming

High quality live streaming content helps to shape the brand image and carry out brand marketing activities effectively. On the contrary, vulgar and uninteresting live streaming will cause bad communication effect for the brand. Although live streaming is popular, all walks of life should, according to their own actual situation, investigate whether it is suitable to carry out live marketing activities, and whether live marketing has high-quality themes and creativity. Blindly following the trend will not achieve the expected marketing effect, but also may cause waste of resources in the following ways:

Firstly, low-cost hype can only attract consumers' attention in the short term, which is not conducive to the shaping of brand image and the long-term interests of enterprises.

Secondly, the effect of brand live streaming is mixed. If the live content is not creative, interesting or of low quality, it will directly lead to a sudden drop in the number of viewers and traffic, which will directly affect the shaping of the brand image (Hu Jun,2017).

Third, the live content of some brand flagship stores in Tmall live platform is relatively simple, such as live production of food, make-up, singing performance, etc., lack of activity

highlights, lack of in-depth interaction in live broadcast, it is difficult to mobilize the consumers to participate. One of the key factors for the success of brand marketing with mobile webcast is the degree of interaction with consumers. However, when many enterprises do brand marketing, they invite big stars and online celebrities as live streamers. When they interact with consumers, they often chat simply. This kind of shallow interaction can retain the audience in some aspects, but it is not conducive to brand promotion.

4.4.2 Propaganda of false product information

In the process of live streaming, if the effect of brand product is overstated, leading to the spread of false product information, the brand cannot achieve its expected live streaming effect and this will affect the brand image.

Jiaqi Li, who sold 15000 Lipsticks in 5 minutes, was in a live broadcast in October 2019. When Jiaqi Li's assistant had struggled to turn the egg that had stuck to the bottom of the pot, he failed. Jiaqi Li picked up the shovel and tried to save it, explaining to the audience: "it will not stick, yes, and it will not paste." but the egg juice is still firmly stuck in the bottom of the pot, and the audience in the studio is tucking up. "Broken" and "sticky pot", the scene was once very embarrassing**.**

4.4.3The content and form of live brand marketing are too single

In the era of eyeball economy, high-quality content is the key in the era of live marketing. The form of brand live streaming is mainly to invite stars and network celebrities. The brand live streaming activities that stars represent are mostly limited to the back of the event, dressing room, etc., and when there is lack of creative contents and venues, it will be difficult to attract the attention of consumers. The differentiated competition is particularly important. How to stand out in the numerous star endorsement live streaming is a major concern. In addition to the conversion of the fans, there is also a need for high-quality marketing planning idea that the brand can be implemented.

4.4.4 Live streaming process fraud

In 2019, Internet celebrity in Sydney of double eleven came to be tucked in the live room "tucked", because of the reported case of a suspected data fraud in Sydney live room. Swipe list is a derivative of e-commerce. In order to improve the ranking and sales volume of online stores and attract customers with high praise, shopkeepers pay people to pretend to be customers. To swipe the bill, the buyer usually provides the purchase fee, helps the designated online store seller to purchase goods, improves the sales volume and credit, and fills in the behavior of false praise. Many businesses will draw consumers' attention to sell more products by swiping the bill and making fake. This kind of behavior will bring affect the trust, popularity and credibility of the brand.

4.5 Live brand marketing strategy

4.5.1Innovation of content and form based on celebrity + online traffic

With celebrity + online red as a gimmick to attract the attention of fans and users, the brand can get the most attention in a short time. In the coming 5G era, the audience's psychology is changing, which makes people pay more attention to the state of their private life than the bright side of stars on the stage, and they are more willing to see the real side of stars and celebrities, so many brands will choose live content closer to the actual life of consumers to close the distance with consumers, such as golden dragon fish inviting Teng Shen and Li Ma's live streaming of the new year's Eve on a live platform, with the most common theme of making new year's Eve, directly contributed to the transformation of the actual sales of golden dragon fish in Tmall. As a common phenomenon, the audience's curiosity plays a strong role in the introduction of live video traffic, but whether the audience's attention will shift again depends on the quality of live video content.

In addition to the personal halo effect of stars, live brand marketing should focus on creative live content, and the combination of "content + stars" can play a greater marketing role than a single live content. On July 28, 2016, Zhang Yixing took the great challenge of Weizi volcano hot spring as an example. Weizi joined hands with Tmall beauty and cost-effective platform to start

brand live marketing. Within two hours, Weizi's live page "everyone said" had nearly 200000 comments and 4 million live comments. During the live broadcast, the brand created a single challenge sequel for fans with the help of Yixing Zhang's reality show, attracting a large number of fans' attention with the exclusive "fight for you". At the same time, Yixing Zhang also staged a one minute disguised reality show to show the development history of the brand. The high-quality live broadcast content not only drives the fans' enthusiasm for participation, but also greatly improves the user experience. In the context of live streaming, the deep interaction with consumers, coupled with the launch of personalized brand customization products, brings consumers psychological satisfaction (Fang Yurong,2016). Creative live streaming marketing content and star fans effect have won the greatest attention for the brand, which is conducive to the promotion of brand value and product sales, traffic increase of Tmall platform, and the increase of star exposure, achieving a win-win situation among the three parties.

4.5.2 Reliance on AR, VR, and other technologies to create a new model of brand marketing

With the R & D of AR technology and hardware, information can span from "two-dimensional" to "three-dimensional". The change of media makes the content form more abundant and three-dimensional. Compared with the brand information transmitted in the TV images and advertising language, the support of AR and VR technology can help the audience feel the charm of the brand personally (China industry research network,2018). In addition to virtual props, more interactive elements and presentation methods are embedded in the live streaming. The upgrading of interactive experience and the involvement of VR and AR technologies make consumers feel more immersed and involved in the live broadcast interaction. The most direct impact of the combination of VR and mobile live is to meet people's pursuit of better visual experience and make consumer experience more real and three-dimensional.

If it is possible to combine real-life light field modeling and real-time image projection to project a real-life model to a real-world scene in real time, it can be viewed in 360 degrees in stereo, which is definitely quite exciting. On November 11, 2017, "Fan Bingbing" was invited to the user's home through AR technology, that is, real light field modeling + AR technology. If we

can achieve live scene, real-time experience, creative scene application and accurately target the audience's freshness of new things, we can bring more breadth and depth of communication effect for the brand.

4.5.3 Integrate multiple channels to build intelligent marketing

In the intelligent marketing stage, consumers' personalized and fragmented demands are taken as the center to meet the dynamic demands of consumers. A new marketing mode is established on the basis of industry 4.0 (mobile Internet, Internet of things, big data and Cloud Computing), flexible production and data supply chain, which brings consumers into the production and marketing links of enterprises and realizes the whole process Business integration, such as Uber, Xiaomi, Kut smart / Magic factory, etc. According to the results of the statistical survey on the development of CNNIC's Internet in China, as of December 2018, the number of Internet users in China was 829 million, with an Internet penetration rate of 56.9%. On average, Chinese Internet users spent 22.8 billion hours online every week. The Internet covers a variety of scenes of people's daily communication.

As an online brand marketing method, in addition to the real-time interaction between Tmall, Taobao and other e-commerce platforms and social platforms, live broadcast can penetrate customers through the most cutting-edge technology of the times, and effectively deliver brand value to target customers. This kind of "two-way communication" is an important sign of whether a brand is mature or not. "Ai + marketing" is the application of the core technology of artificial intelligence in all aspects and scenes of brand marketing, which is a powerful tool of marketing technology given by the intelligent era(Feng Zhiwei.2016). It can make the enterprise brand more effectively handle and use data, and then deeply understand the customer needs, formulate accurate and efficient marketing strategies, and effectively evaluate the marketing results. Through effective data analysis and customer insight, through the most effective marketing method, with the help of Tmall platform, the brand provides customers with valuable brand information in the live broadcast process, that is, at the right time, let the right people see the right information, and achieve the goal of precision marketing.

4.5.4 Optimize the live steaming interface of the platform and improve the user experience

Reasonable and simple live interface design of mobile terminal is conducive to improving the user experience of consumers. When people watch the screen interface of mobile terminal, according to the principle of beauty and coordination, the first focus is the middle and upper position, but at present, most of the live broadcast and video broadcast interfaces are different, and the quality of live streaming screen is high or low, and the overall experience is poor. For example, Tmalllive's interface is mainly one-third of the top of the screen, and JD live's interface is mainly vertical full screen display. The location design of the live broadcast interface can be based on the perspective of aesthetics and visual communication, and select the appropriate screen display location. At the same time, the live streaming Click to Watch interface can also be personalized design and layout according to different brand needs (Gaiyan.2017). For example, "golden proportion" has strict proportion, harmony and other aesthetic characteristics, which can bring people visual beauty and comfort in many times, such as architecture and art. The design of live broadcast interface can refer to golden section, and use color, picture, logo and other contents to optimize the layout design, so as to humanize the design of live streaming browsing interface and bring it to the audience The comfort of watching.

Generally speaking, the design of live streaming interface should follow the following principles: first, simplicity and ease of use; second, improve the quality of live streaming image; third, optimize the size and proportion of the interface; fourth, Strengthen the in-depth interaction between the anchor and the consumer, further enhance the brand building power, and improve the loyalty of consumers. The continuous optimization and development of the live streaming platform can provide consumers with a better user experience, a fresh sense of use for consumers, a better communication channel for brands, and further promote the better development of brand live marketing.

4.5.5 Establishment of good market environment to promote the development of live brand marketing activities

Live streaming platforms are important for the promotion of live brand marketing activities.

On the one hand, various problems of live broadcast platform emerge in endlessly, such as moral anomie, false enthusiasm, lack of industry self-discipline. While that of the enterprise brand marketing are increasingly prominent, such as false advertising, false propaganda, unfair competition, etc. Brand live marketing activities need a good market environment, so we need to strengthen management from the following aspects:

Supervision: strengthened supervision can improve the quality of live streaming platform. In order to achieve the effect of supervision, we should start from two aspects of government supervision and platform self-discipline, and combine the official compulsory management with the industry consciousness. If the network live streaming platform is to feature in the industry, it must cooperate with the host in the official regulatory platform to promote the progress of the whole industry by ensuring the quality of the platform itself. The platform shall set relevant live streaming regulations, including the application qualification of the anchor, the management method of the anchor's violation, the live streaming language and content requirements, the recharge of virtual gifts, and the realization rules. Practical measures should also be taken after the promulgation of express provisions. In the process of live streaming, there should be special management personnel in the studio to supervise the dynamic situation of each studio, and block those hosts whose content exceeds the management regulations in time. In addition to the supervision of live content and anchors, the platform should also put an end to the bad behaviors such as swiping the bill, false reporting of data and so on in order to make profits. The false fire of a platform can be exchanged for a temporary momentum, but there is no way to be forever sought after. This kind of deceptive behavior will always be exposed, which will arouse the outrage of users, and the brand image created by the live streaming platform will also collapse in an instant (Zhao Qianqian,2016). Therefore, in order to the sustainable development of the live streaming industry, it is very important to supervise the online live streaming platform.

Threshold restriction: there is need to set access restrictions to live streaming threshold to avoid blackout. The online live broadcasting industry covers all kinds of platforms, anchors from all walks of life, and all kinds of live content. In this way, irrespective of the platform or the host, the access threshold for live broadcast seems to be very low. However, as long as there is a device such as smart phone or computer, live streaming is not difficult, and chatting with the audience

can create a revenue legend that attracts consumers' attention. This will create large traffic in the live streaming industry and consequently result to the rapid development of the industry and vicious competition.

What brand marketing needs is not only to attract the attention of consumers, but also to identify with corporate brand culture and brand, so as to form brand loyalty. Therefore, we can solve this problem from two aspects: In terms of national policy, we should restrict the host, platform and live streaming content. Another approach is through the selection of the host; the enterprise should not only look at the appearance, but also look at its internal cultivation and character. In addition, the selected host should be trained professionally, so as to train before taking the post and build a good mobile network Broadcast environment, let consumers experience and understand the enterprise brand value from the heart, and identify with the brand value.

The online live streaming platform has been criticized by most citizens. In order to brush fans and popularity for the host and programs, the platform can be said to be extremely useful. The 20 million anchor brokerage companies charge 40 million virtual currencies in the online live streaming platform, and then spend 40 million virtual currencies on their anchor accounts. The revenue of 40 million live streamers is divided into 55 shares through the live streaming platform, and 20 million profits are made by themselves. In this way, the brokerage company has won the popularity of the anchor, the anchor has harvested a lot of running water, and the live broadcast platform has also obtained a lot of running water. It is required that the online live broadcast platform should disclose the charging standards, put an end to the spread of such things, strengthen the industry self-discipline mechanism, and ensure the sound development of brand communication.

4.6 Conclusion, inspiration and outlook

4.6.1 Theoretical implications

This study makes two main contributions to knowledge of brand marketing. First, this research highlights the significant role of mobile live streaming in brand marketing. According to Kantar's market research, consumers' consumption attitudes have tended to be more conservative after the outbreak of COVID-19 and they prefer to reduce unnecessary expenses (Kantar, 2020a),

which resulted in a sharp decline in firms' revenue in the first quarter of 2020. It is very important to explore new marketing model. Although prior researches have studied brand marketing, less attention has been paid to research on the combination of live streaming and brand marketing. The current research fills this gap by the analysis of Tmall and explores how firms should choose in the COVID-19 crisis.

Second, this study extends knowledge about live streaming to brand marketing. This paper analyzes the characteristics of network live broadcast, mining the problems exposed in the new brand marketing model, summarizes and analyzes them, and puts forward effective brand marketing strategies for enterprises. Thus, this research enriches the literature related to brand marketing and provides new scenarios for studies of marketing .

4.6.2 Managerial implications

A major practical lesson is that the COVID-19 crisis is quite complex and has caused not only changes in existing business models but also a need to understand and observe transitions in the economy, business, and society（Surabhi Verma，Anders Gustafsson2020）. In order to mitigate the COVID-19 crisis, In the background of network live streaming, we should think about the implementation method and effect of brand marketing, and put it into practice

When it is applied to the brand marketing activities of enterprises, it has become a new way for many enterprises to carry out marketing activities. This paper makes an in-depth study on the brand marketing strategy under the context of mobile network live streaming, which has certain reference significance for enterprises to use network live streaming brand marketing with users as the center in the later stage, and can also help enterprises more accurately meet the needs of users and improve customer satisfaction.

In conclusion, as a new product under the background of mobile internet, the emergence and development of live brand marketing is a reasonable phenomenon of market activities. The development of brand marketing is increasingly relying on new media, channels and platforms. The brand produces comes with more high-quality content through live broadcast. Consequently, we should be able to lead users to a new way of life, so as to promote the continuous development of our society. How to make a better development of brand marketing in the mobile network scene

and stand out in the trend of two-way development of vertical live broadcast and national live broadcast still needs the continuous practice exploration of brand builders and systematic research of community.

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Chapter 2

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Appendices

Appendix A

A-I Research Constructs and Scale Items

Dear madam / sir：

At present, we are conducting a survey on consumers' repeated purchase behavior of online shopping by using mobile terminals (such as mobile phones, iPads, etc.) to watch live streaming. Thank you for your active participation and information exchange. The questionnaire is anonymous and only used for academic research, so please rest assured when filling in it, which will not lead to the disclosure of your private information. Please start from your true understanding to fill in, there is no right or wrong answer, once again thank you very much for your strong support and selfless help!

The following questions are only for users who use mobile terminals to watch live shopping. Please do not fill in this questionnaire if you have not purchased live via mobile terminal. Please choose the appropriate options based on your real feelings. Thank you for participating in our questionnaire. Your feedback is very important to us.

Part I: screening items

1.The total number of times you have purchased products while watching the live streaming is:

A. 1 time or no purchase (stop answering)

B. 2 or more times (continue to answer)

Part II: main item measurement

-Perceived interactivity (PI)

PI1:When watching live streaming, the live streamer always actively responds to my questions or topics.

PI2: When watching live streaming,I will actively respond to the topics initiated by the live streamer.

PI3: When watching live streaming,the live streamer will often communicate with consumers on

the Internet for various products.

PI4: I think communicating with consumers during the live streaming will increase my popularity with the live merchants.

PI5:I am willing to participate in the interaction during the live streaming.

-Promotional activities (PA)

PA1:When watching live streaming, I will buy it because it is a limited-time or limited edition item.

PA2:I will buy the goods because they are only on sale during the live streaming.

PA3:I think it is necessary for merchants to promote products and marketing campaign during the live streaming.

PA4:I really like merchants issuing coupons, cash vouchers, gifts or lucky draw and other promotional activities during the live streaming.

PA5:I am willing to participate in activities held by businesses during live streaming, such as issuing coupons, cash coupons, lucky draw, *s*eckil*l*, etc.

-Perceived value (PV)

PV1:The delivery is timely, and the information of express delivery is updated in a timely manner.

PV2:The goods purchased by watching the live streaming are economical.

PV3：The value of goods purchased by watching live streaming is directly proportional to the price paid.

PV4： The quality of the products purchased by watching the live streaming is the same as the product description.

PV5：By watching the live streaming, the goods I buy are fair compared with the time and energy I spend.

PV6： Products purchased by watching the live streaming provide more value in line with their prices than products purchased by other methods.

PV7： The value of the goods purchased by watching the live streaming is worth the money I spend.

-High quality content (HQC)

HQC1:I think live streaming can display products in a comprehensive and three-dimensional

manner.

HQC2:I think the live streamer can give professional answers to questions related to commodities during the live streaming.

HQC3:I think the live streamer can give personalized suggestions based on my description during the live streaming.

-Customer trust (CT)

CT1:Live streaming merchants can put themselves in place and consider the needs to stand in the perspective of customers.

CT2:Live streaming merchants are committed to solving the problems that most customers care about.

CT3: When watching the live streaming, I trust the information about the product that the live streamer said.

CT4:When watching the live streaming, I believe in the statements and commitments made by the live streaming merchants about the products.

CT5:I believe that live streaming merchants will care and treat customers honestly.

CT6:In general, I trust the merchants that I watch live streaming.

-Online shopping habits (OSH)

OSH1:I often shop online.

OSH2:Whenever I want to shop, I think of online shopping.

OSH3:For me, online shopping has become a routine.

OSH4:Online shopping is already a very natural behavior for me.

-Customer satisfaction (CS)

CS1:According to the previous consumption experience and experience of watching live streaming, I am satisfied.

CS2:It is wise for me to choose to spend on live streaming.

CS3:I have a very good overall evaluation of the products or services provided by live streaming merchants.

CS4:The products or services provided by live streaming merchants can meet my needs well.

-Repurchase intention (RI)

RI1:Even if there are other shopping methods through different channels, I will still watch the live streaming to buy goods.

RI2:In the future, I will continue to make purchases by watching the live streaming.

RI3:I am willing to recommend my favorite live streaming businesses to other relatives and friends.

RI4:I think I may become a regular or loyal customer of my favorite live streaming business.

Part III background items

1. What is your gender?

A. Male B. Female

2. What is your age?

A.< 20 B. 21-30 C. 31-40 D. ≥40

3. Your education level?

A. High school or less B. College C. Undergraduate D. Graduate and above

4. What is your disposable monthly income? (RMB)

A. Below 5000 yuan B. 5000-10000 yuan C. Above 10000 yuan

5. What is your occupation?

A. Students B. government and public institution staff C. workers

D. Enterprise staff E. freelancers F. others

6. How often do you watch the live streaming in a week

A. 1-2 times b.3-6 times c.7-10 times d.11 times and above

7. Your shopping history by watching the live streaming:

A. Three months and below B. Three months-six months

C. Six months-1 year D. 1 year and above

A-IIDescriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
PI	452	4.016372	.9140428	1.4	6.4
PA	452	4.00885	.9252849	1	6.2
PV	452	3.954488	.7516705	2	6
HQC	452	4.00295	1.200103	1.333333	7

CT	452	4.002212	.8406523	1.666667	6
OSH	452	4.016593	.9637275	1.5	6.5
CS	452	4.011615	1.052267	1.25	6.75
RI	452	3.971792	.9753933	1.25	6.75

Notes: PI=perceived interactivity; PA=promotional activities; PV=perceived value; HQC=high quality content; CT=customer trust; OSH=online shopping habits; CS=customer satisfaction; RI=repurchase intention.

A-IIIInterview outline of consumers' impulsive buying behavior in the context of Mobile LiveStreaming

Serial number	Related topics
1	Do you often shop while watching live broadcast on your mobile terminal? Do you search online only when you need to buy specific items, or do you often use mobile terminals to watch live broadcast to kill your free time?
2	Have you ever had a situation like this: you didn't plan to buy anything before, but when you watched the live broadcast on the mobile terminal, you suddenly became interested in a certain product, and then you had the impulse to buy it, or did you buy it directly? Are there many such cases? If so, can you describe the specific situation at that time?
3	Do you think you are a rational consumer, a very emotional consumer, or both? Why do you think so? It's better to give an example.
4	I bought some goods I didn't want to buy when I watched the live broadcast on the mobile terminal, what is the impact on you? Just interested in the product itself, or What other factors affect it?
5	For example, when you watch a live broadcast on a mobile terminal, you didn't plan to buy this product before, but you suddenly became interested in it, this product happens to be on sale. What do you usually do?
6	Do you think the goods you like will lead to the behavior of buying them immediately? Or do you think there is a natural connection between the two?
7	If you have impulse purchase intention, but do not lead to the final impulse shopping behavior, that is to say, give up the purchase, then what factors affect or cause this. What are the factors that make you cancel in the process of submitting an order when you have purchased the product?
8	When you buy a product by watching live broadcast with a mobile terminal,Is your purchase decision related to your personal time?
9	What information do you usually pay attention to when you buy a product by watching live broadcast on a mobile terminal?
10	When you buy a product by watching live broadcast on a mobile terminal, will your own purchase preference affect your judgment of goods?
11	In addition to what we mentioned above, what other factors will affect your purchase decision?

12	What do you think of the online promotion activities when watching live broadcast with mobile terminal? What kind of promotion do you prefer?
13	Do you think that the promotion activities when you watch the live broadcast on the mobile terminal have an impact on your shopping behavior?Can you describe some specific experience that you are impressed with?
14	Did you buy something you didn't plan to buy because of promotion? Can you describe the situation?
15	Affected by what factors, their own mobile shopping impulse buying behavior. When you had mobile shopping, which mobile platforms or mobile websites influenced you? What are the specific aspects? Is it marketing stimulation, advertising, or webpage display, audio and video materials, or mobile website system operation? Are these factors intertwined or affect you individually?
16	Have you ever had an unpleasant shopping experience? How did this happen? What are the negative effects of these unpleasant experiences on your life?
17	Before you place an order, do you worry about the unpleasant consequences of this shopping, or do you feel that there will be any risks? What are you worried about?
18	If you have some worries when you use the mobile terminal to watch the live streaming before placing an order for shopping, do you have the following worries? If yes, please tell me what your specific concerns are. If not, just say no. Do you worry that shopping online is a waste of time? Do you worry about the waste of money when you buy goods on impulse online? Do you worry that the goods you buy on the Internet will be laughed at by others? Or the people around you will be very dissatisfied. Do you worry that shopping online will expose your privacy? Do you worry that impulse buying online will be useless? Do you worry that if you are not satisfied with what you buy on the Internet, will you be very upset? Do you worry about serious physical injury caused by impulsive online shopping? Do you worry that there will be no after-sales service when you buy something impulsively online? Do you worry about the loss of online payment?
19	Would you be so worried if there is a promotion for a product you want to buy? Will your worries be alleviated?
20	If you feel that there are some risks when you buy goods while watching live broadcast with mobile terminal, what factors do you think will reduce these risks? Why do you think so?
21	Which mobile terminal platforms do you often watch live shopping in? Why do you choose these platforms?
22	In addition to the product itself, store reputation and other factors, what do you pay special attention to when watching live broadcast with mobile terminal?
23	Can you talk about shopping while watching live broadcast with mobile terminal? For example, interesting experience, confusion, what to buy often. Please feel free to say so.

Appendix B

B-IResearch Constructs and Scale Items

Dear madam / sir：

At present, we are conducting a survey on consumer impulse purchase behavior of online shopping by using mobile terminals (such as mobile phones, iPads, etc.) to watch live streaming. Thank you for your active participation and information exchange. The questionnaire is anonymous and only used for academic research, so please rest assured when filling in it, which will not lead to the disclosure of your private information. Please start from your true understanding to fill in, there is no right or wrong answer, once again thank you very much for your strong support and selfless help!

The following questions are only for users who use mobile terminals to watch live shopping. Please do not fill in this questionnaire if you have not purchased live via mobile terminal. Please choose the appropriate options based on your real feelings. Thank you for participating in our questionnaire. Your feedback is very important to us.

Part I: screening items

1．Have you used your mobile phone or iPad to watch the live streaming and bought goods on the live streaming?

A. Yes　B. No (stop answering)

Part 2: Measurement of the main item

-Promotion during live streaming (PLS)

PLS1:When I see my favorite product being promoted live, I want to have it immediately.

PLS2:When I saw that my favorite product was promoted during the live streaming, I wanted to buy it without considering it at all.

PLS3:When I saw that my favorite product was being promoted during the live streaming, I felt that the product was what I wanted.

PLS4:When I see a certain kind of promotion during the live streaming, although it was not the product I planned to buy before, I really want to buy it now.

-Promotion time restriction (SJXA)

SJXA1:Promotions during mobile live streaming generally have time limits, and I think the promotional time set by merchants is generally relatively short.

SJXA2:When I watched the live streaming, I felt that it took a relatively short time for me to decide whether to purchase promotional items.

SJXA3:When I watched the live streaming, I felt that the promotional products I bought were often approaching the deadline for the promotion.

-Material incentives (WZJL)

WZJL1:I like the promotional activities carried out by businesses during the live streaming.

WZJL2:When merchants carry out promotional activities during live streaming, I will browse more pages to select products.

WZJL3:When I was watching the live streaming, the promotions made by the merchant attracted my attention.

WZJL4:When I was watching the live streaming, the promotional activities made by the merchants had no impact on my shopping plan.

-Attitude towards online promotion (AOP)

AOP:I have a positive attitude towards the promotion methods in the live streaming.

-Overall perceived risk of consumers (OPRC)

OPRC:The product I bought on the live streaming may not achieve my expected effect.

-Perceived time risk (SJFX)

When I watch the live streaming, it may take a long time for the customer service to respond with a large amount of inquiries.

-Perceived product function risk (GNFX)

GNFX1:The product I bought on the live streaming may have some quality problems.

GNFX2:The product I bought on the live streaming may be a fake and inferior product.

-Perceived financial risk (CWFX)

CWFX1:The product that I bought on the live streaming may not have a big price discount.

CWFX2:The price/performance ratio of this product I bought on the live streaming may be relatively low.

CWFX3:It may not be worth the money to buy this product while watching the live streaming.

CWFX4:Buying this product may be a waste of money while watching the live streaming.

-Perceived privacy risk (YSFX)

PPR1:When I watch the live streaming, I may be worried about personal privacy disclosure.

-Perceived service risk (FWFX)

FWFX1:When I watch the live streaming, I may worry that the after-sales service is not guaranteed.

FWFX2:Once there is a problem with the product I bought on the live streaming, it is difficult to find a merchant to communicate and solve it.

FWFX3:If the products I bought on the live streaming are not suitable, it is difficult to return or exchange them.

-Perceived social psychological risk (SHFX)

SHFX1:If I am not satisfied with the product I bought on the live streaming, I will be very unhappy.

SHFX2:If there is a problem with the product I purchased on the live streaming, the subsequent processing process will annoy me.

SHFX3: If this product brings me some trouble that I bought the product on the live streaming, I will feel stressed.

SHFX4:The goods I buy through live streaming may make relatives and friends think it unwise, and some people may laugh at me.

-Impulse buying intention (GMYY)

GMYY1:When I saw that my favorite product was being promoted on the live streaming, I had a strong desire to own this product, even though I didn't want to buy it before.

GMYY2:When I saw that my favorite product was being promoted on live streaming, I was very likely to buy this product, even though I didn't want to buy it before.

GMYY3:When I saw that my favorite product was being promoted on live streaming, although it was not the product I planned to buy before, I really want to buy it now.

-Impulse buying behavior (GMXW)

GMXW1:There was no plan at all in advance, and I decided to buy it when I watched the live

streaming.

GMXW2:When watching the live streaming and buying these unplanned purchase target goods, I seldom think too much about my purchase decision.

GMXW3:When I decide to purchase these unplanned purchase target products through live streaming, I will buy without hesitation.

GMXW4:I have a lot of products that I bought on live streaming, but I haven't used them much recently.

-Trust in live streaming platform (PTXR)

PTXR1:Overall, I feel that the mobile live shopping environment is mature and normal.

PTXR2:Generally speaking, I feel comfortable and at ease shopping on the live streaming platform.

PTXR3:I'm very relieved that the stores that bring goods live fulfill their commitments.

PTXR4:Most live streaming merchants also consider customer interests.

PTXR5:Most businesses engaged in live streaming are capable of providing good services to customers.

-Trust in the live streamer (ZBXR)

ZBXR1: Watching the live streaming made me trust the live streamer even more.

ZBXR2:I believe the products recommended by the live streamer are shared after personal experience.

ZBXR3:I believe that the products recommended by the live streamer are useful to me.

-Normative evaluation (GFPG)

GFPG1:I think my behavior of live shopping through the mobile terminal this time is good, not bad.

GFPG2:I think my shopping behavior through live streaming on the mobile terminal is not wasteful and not economical.

GFPG3:I think my behavior of live-streaming shopping through the mobile terminal this time is fascinating, not unattractive.

GFPG4:I think my behavior of live shopping through the mobile terminal this time is acceptable, not unacceptable.

GFPG5:I think my behavior of shopping live through the mobile terminal this time is generous to myself, not stingy with myself.

-Comment valence (PLXJ)

PLXJ1:I think there are many positive comments on the products recommended by the live streamer during the live streaming.

PLXJ2:I think the more stars the reviews get, the more satisfied the reviewers are with the products recommended by the live streamer during the live streaming.

PLXJ3:During the live streaming, the negative comments on the products recommended by the live streamer have a great impact on my purchase decision.

-Comment quality (PLZL)

PLZL1:During the live streaming, I can understand the meaning of the product comment information recommended by the live streamer.

PLZL2:I think the content of the comments is very relevant to the products recommended by the live streamer during the live streaming.

PLZL3:Other consumers' comments on the products recommended by the live streamer during the live streaming are highly objective.

PLZL4:Other consumers commented sufficiently on the products recommended by the live streamer during the live streaming.

-Comment volume (PLSL)

PLSL1:There are many comments that the products recommended by the live streamer during the live streaming are worth buying.

PLSL2:Many reviews strongly recommend buying the products recommended by the live streamer during the live streaming. Although it was not the product I planned to buy before, I will buy it now.

PLSL3:There are many comments that it is a good choice to buy the product recommended by the live streamer during the live streaming. Although it was not the product I planned to buy before, I will buy it now.

PLSL4:I will only consider buying when there are a large number of product reviews recommended by the live streamer during the live streaming.

-Comment credibility (PLKX)

PLKX1:The comments on the products recommended by the live streamer during the live streaming are easy to understand.

PLKX2:During the live streaming, the comment of the product recommended by the live streamer was written in detail.

PLKX3:During the live streaming, the comment information of the products recommended by the live streamer was written fairly.

PLKX4:During the live streaming, the comment of the product recommended by the live streamer was written very truthfully.

-Comments timeliness (PLSX)

PLSX1:Few comments on products recommended by the live streamer during the live streaming lasted more than three months.

PLSX2:During the live streaming, important comments on the products recommended by the live streamer were released in the last two weeks.

PLSX3:My interesting comments on the products recommended by the live streamer during the live streaming were released in the last two weeks.

PLSX4:For me, the most important information about the products recommended by the live streamer during the live streaming was released in the last two weeks.

Part III background items

1. What is your gender?

A. Male B. Female

2. What is your age?

A.< 20 B. 21-30 C. 31-40 D. ≥40

3. Your education level?

A. High school or less B. College C. Undergraduate D. Graduate and above

4. What is your monthly income?(RMB)

A. Below 5000 yuan B. 5000-10000 yuan C. Above 10000 yuan

5. What is your occupation?

A. Students B. government and public institution staff

C. workers D. Enterprise staff E. freelancers F. others

6. What do you think is the most important quality of a live streamer () (you can choose more than one)

A. Language expression B. Professional knowledge C. Logical analysis D. Communication and interaction E. On-site driving F. Age

G. Face value H. Gender

7. What are the factors that will attract you when watching live streaming? (You can choose more than one)

A. The live streamer's makeup and outfits B. The live streamer's body and appearance C. The live streamer's voice D. Interactive methods and topics

E. The atmosphere of the live streaming F. The professionalism of the host, able to describe the recommended products in detail

8. When do you usually watch live streaming?

A. 6:00-8:00 B. 8:00-10:00 C. 10:00-12:00 D. 12: 00-14:00

E.14: 00-16:00 F. 16: 00-18:00 G. 18:00-20:00 H. 20: 00-22:00

I. 22: 00-24:00 J. After 24: 00

9. How long do you usually watch the live streaming?

A.15min B.15-30min C.30-45min D.45-60min E.60-75min

F.75-90min G.90-120min H.120min or more

B-II Descriptive statistics

Variable	Obs	Min	Max	Mean	Std.Deviation
Promotion time restriction	469	1.00	5.00	2.994	.797
Material incentives	469	1.00	5.00	3.045	.742
Impulse buying intention	469	1.00	5.00	3.086	.796
Trust in the live streaming platform	469	1.00	5.00	3.101	.749
Trust in the live streamer	469	1.00	5.00	3.071	.780

Abstract in English

Essays in Repurchase Intention，Impulse Buying Intention and Brand Marketing Strategy in the Context of Live Streaming

This dissertation consists of three separate essays: in repurchase intention, impulse buying intention and brand marketing strategy in the context of live streaming. In the first essay, we put forward a theoretical model manifesting the determinants of repurchase intention that is mainly explored how perceived interactivity, promotional activities, perceived value, high quality content, customer satisfaction, customer trust and online shopping habits affect the intention of repurchase in the context of live streaming. We have further attempted to investigate the influence of repurchase intention among different demographic elements (i.e. gender, age, education, disposable monthly income, occupation and history of watching livestreaming). Results reveal that customer satisfaction is one of the most important factors affecting repurchase intention in the process of live streaming.The analysis results of the multi-group reveal that the influence path of repurchase intention are corresponding moderating effect are more evident for particular demographic variables in the process of live streaming. The second essay analyzes the main factors affecting impulse buy intention against the backdrop of live streaming. Compared with physical shop shopping, consumers face higher uncertainty. Because impulse buying has no plan beforehand and lacks sufficient information search process, it faces higher risk. Therefore, customer trust is an important factor affecting consumers' impulse buying in the live streaming environment. This paper focuses on how mobile terminal marketing stimulus affect consumer trust and impulse buying intention, how different mobile terminal marketing stimulus affect the effect, and

which variables have moderating effects according to multiple groups. We found that neither promotion time restriction nor material incentives can arouse the impulse purchase intention of all consumers.Our results further reveal that Chinese consumers' trust in the live streaming platform is the key determinant of impulse buying intention in the streaming scenario. In the third essay, a sudden outbreak of the COVID-19 makes the PC end live streaming which has been developed for many years enter a new era, giving birth to the rapid development of mobile end live streaming. Not only because of the expansion of the live streaming industry market, the rise of the trend of the national live streaming, but also because the mobile live streaming is more and more valued by the brand, becoming an important tool for brand communication and product promotion. It is conducive to improving sales volume and brand awareness. Marketing communication through mobile live platform has become a popular way of brand marketing. This paper mainly studies the current situation, methods, problems and development strategies of brand marketing activities with the help of live streaming platform under the background of mobile internet. Taking Tmall live streaming platform as an example, this paper analyzes several ways of brand marketing with the help of live streaming and some universal characteristics of live streaming marketing by using the relevant theories of marketing. In view of the problems existing in live streaming brand marketing, it puts forward relevant improvement measures.

Keywords: live streaming, customer satisfaction, repurchase intention, promotion time restriction, material incentives, trust in the live streaming platform, trust in the live streamer, impulse buying intention, live brand marketing, marketing strategies