

Research on the Influence of E-Commerce Platform Content Marketing on Consumer  
Consumption Behavior

Chen Jiamin



Research Project Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Business Administration  
Universiti Tun Abdul Razak

June 2023

## DECLARATION

I hereby declare that the case study is based on my original work except for quotations and citations that have been duly acknowledged. I also declare it has not been previously or concurrently submitted for any other degree at Universiti Tun Abdul Razak (UNIRAZAK) or other institution.



Signature :

Name : Chen Jiamin

Date :

Abstract of the project paper submitted to the Senate of Universiti Tun Abdul Razak in partial fulfillment of the requirements for the Master of Business Administration

## **Research on the Influence of E-Commerce Platform Content Marketing on Consumer Consumption Behavior**

**By**

**Chen Jiamin**

The rapid development of big data and its related technologies has had a huge impact on traditional marketing. At present, the growth of network data exceeds the processing power of the existing information technology infrastructure equipment. In China, the consumption behavior under the e-commerce model is in a period of vigorous development. Due to the establishment of stores under the e-commerce mode, it occupies less capital and low operating cost, so it has a significant price advantage, so its entry threshold is low, which makes this mode widely popular among low-income people. In the competitive development of e-commerce mode, whether for e-commerce or traditional shops, the more information about consumers' behavior, the easier it will be to survive in the competition. Therefore, it is urgent to deeply study the behavior of consumers under the e-commerce mode. With the high development of Internet social media, the forms of Internet content marketing are becoming more and more rich. Live broadcast, short video and text and text are the three common content forms at present. Major e-commerce giants have launched content modules within their platforms, providing opportunities for merchants with opportunities to directly carry out various forms of content marketing in the e-commerce platforms, so as to attract more consumers' attention. The purpose of this study is to explore the impact of different forms of content marketing in e-commerce platforms on consumers' consumption of products of the same category, as well as the spill over effects on consumers' consumption of products in other related categories. This study intends to investigate the active users of Taobao platform from November 1, 2022 to December 30, 2022, to collect their content viewing records, commodity consumption records, and demographic characteristics. On the basis of reference and related research, the data was pre-processed and feature engineering, and the samples of processing group and control group were obtained through propensity score matching. Subsequently, a multivariate linear regression model was established to analyze the impact of different forms of content marketing on consumer consumption behavior. Use the measurement model to estimate the impact of different forms of content marketing on consumer consumption behavior, fill the gap in the related research on content marketing, and provide a certain reference for the marketing strategies of e-commerce platforms and merchants.

*Keyword: Content marketing; e-commerce; consumer behavior; spill over effects*

## TABLE OF CONTENTS

DECLARATION .....	ii
ABSTRACT.....	iii
CHAPTER 1 INTRODUCTION .....	1
1.1 Research background .....	1
1.2 Problem statement.....	3
1.2.1 Influence of e-commerce on market development mode.....	3
1.2.2 Influence of e-commerce on marketing model .....	4
1.2.3 Spillover effects of different forms of content marketing on e-commerce platforms .....	5
1.3 Research question .....	6
1.4 Research objectives.....	7
1.5 Significance of Study.....	8
CHAPTER 2 LITERATURE REVIEW .....	9
2.1 Content marketing.....	9
2.1.1 Definition of content marketing.....	9
2.1.2 Marketing Party generates content.....	10
2.1.3 User-generated content .....	11
2.2 Virtual Product Experience.....	12
2.2.1 Development of virtual product experience.....	12
2.2.2 Features of virtual product experience.....	13
2.2.3 Live streaming and short videos .....	14
2.3 Spillover effect.....	15
2.3.1 Spillover effect of same brand .....	15
2.3.2 Spillover effect of competitive products.....	16
2.3.3 Cross-category spillover effect .....	16
2.4 Factors affecting consumer consumption behavior .....	17
2.5 Summary of this chapter .....	18
CHAPTER 3 RESEARCH METHODOLOGY .....	19
3.1 Research project .....	19
3.2 Sample & Sampling Technique .....	20
3.2.1 Instructions of study sample selection .....	20

3.2.2	Accessibility and Ethical Issues .....	21
3.2.3	Descriptive statistics of the questionnaire.....	21
3.3	Data and variables in study question 1 .....	22
3.4	Study the data and variables in Question 2.....	25
3.5	Setting of model variables .....	26
CHAPTER 4 RESULT DESCRIPTION AND DISCUSSION .....		31
4.1	To confirm the model.....	31
4.2	The propensity score matches .....	32
4.3	The results of the study in question .....	34
4.4	Analysis and discussion of the results .....	37
4.4.1	Research Question 1: The direct impact of different forms of content marketing in e-commerce platforms .....	37
4.4.2	Research Question 2: The spillover effect of different forms of content marketing in e-commerce platforms .....	38
4.5	Results discussion .....	39
CHAPTER 5 CONCLUSION AND OUTLOOK.....		42
5.1	Conclusion .....	42
5.2	Theoretical contributions to the study.....	42
5.3	Practical significance of the research.....	43
5.4	Research deficiency and prospects .....	44
APPENDICES .....		46
REFERENCES .....		48

## CHAPTER 1 INTRODUCTION

### 1.1 Research background

With the booming development of China's Internet economy, there are a large number of Internet users in China, including a large number of content users. According to the Statistical Report on the Development of Internet Network in China released by China Internet Network Information Center, by December 2021, the scale of Internet users in China reached 829 million, and the scale of online video users reached 612 million, accounting for 73.9% of the total Internet users; the scale of mobile online video users reached 590 million, accounting for 72.2% of mobile Internet users. The change of people's living habits has made the advertising industry is undergoing tremendous changes. With the rapid development of Internet social media, the realization of traffic brought by social media platforms drives the explosive growth of information flow advertising, and the Internet content marketing methods have become more diversified. In addition to the traditional content marketing model (such as patch advertising, brand naming, brand implantation and other forms), native content marketing (such as live broadcast, short video, text and other forms) is expected to become the next explosive growth point. According to Zenith's latest AD forecast, global social media AD spending will grow by 72% between 2020 to 2023. Global social media advertising revenue will exceed \$50 billion in 2023, with online video advertising revenue reaching \$35.4 billion. According to the statistics of the White Paper on Brand Content Marketing in the Internet Era 2022, the market size of the main advertising types of content marketing has reached 40.3 billion yuan in 2021, and it is expected to surpass TV advertising in the next five years.

In 2011, the emergence of content shopping guide platforms such as Meilishuo and Mogujie led the wave of user-generated content related to e-commerce consumption; in 2013, Xiaohongshu became popular as a shopping sharing community. On social network platforms, product recommendations also emerge in endlessly, such as the grass-planting strategy in Weibo, and the product shopping guide advertisements in TikTok short videos. With the vigorous development of content marketing, domestic and foreign e-commerce platforms have launched their own content marketing projects, and set up content modules within the platform to encourage users to generate content and give certain rewards to users. These

content has a variety of presentation forms, including online comments, posts, short videos, live broadcasts, questions and answers, payment for knowledge and other different forms. The creators of the content can be consumers (buyer reviews), Internet celebrities, or sellers. Amazon launched the "Amazon Influencer Program" web celebrity marketing project in 2017, and users need to meet the three requirements of "(1) having a large number of fans; (2) frequent posts; (3) the post content is related to shopping" to apply for the project. The project does not limit the type of web celebrity. The web celebrity participating in the project will get a unique URL address with the Amazon domain name. Consumers can watch the content posted on social media (Instagram, Youtube, etc.) and find their recommended products through the URL. Jingdong is the largest self-operated e-commerce platform in China, and it is also fully promoting the content ecology. Jingdong has established a talent system to promote the talent to produce high-quality content and attract consumers. At the 2018 JD Unbounded Marketing Summit, the official announced the launch of the "hundred million" plan in 2018, that is, to cultivate 100 content partners (JD Talent) with annual income of more than 10 million yuan on the JD platform, and to support 1,000 content partners with annual income of more than one million yuan.

Taobao is the largest C2C e-commerce platform in China, and also the most sound e-commerce platform for the content ecological development. Since 2016, Taobao has transformed from a pure e-commerce platform to a content e-commerce platform. There are mainly six main content forms, such as single product, post, list, collocation, short video and live broadcast. In 2016, live streaming and short video showed explosive growth, and live streaming and short video application platforms emerged in an endless stream. Taobao launched Taobao live broadcast and Taobao short video in 2016 and 2017, respectively, thus further enriching the content forms. On September 26, 2018, on the eve of changing the homepage of mobile Taobao as the core, Taobao Zong planted Jiang Fan released the latest data of Taobao content ecology: among 100 Taobao products, 42 are presented with short video, and the daily demand volume exceeds 1.9 billion times; In the past year, the scale of Taobao live broadcast users has doubled, and the transaction volume reaches 350%. Short videos and live broadcasts, because of their higher interest and higher interactivity, have gradually become more popular content forms among sellers, experts and consumers.

At present, most of the academic research on content marketing in e-commerce platform is focused on the influence of product sales by content marketing; the comparison of different forms of content marketing on consumer consumption behavior and the spillover effects of content marketing on cross-category products are rare.

The research of this topic, relying on Alibaba Taobao platform, tries to find out the difference between the influence of different forms of content marketing on consumer consumption behavior from the real consumer data, fill in the gap of relevant research, and the analysis results can provide reference for the development of marketing strategies of the platform and merchants.

## **1.2 Problem statement**

The rapid development of information technology promotes the emergence of electronic commerce. How to guarantee the service and convenience of e-commerce has become a key issue to be solved in the current development process of enterprises. Each enterprise should establish a marketing model in line with its own development, summarize its own characteristics and future development direction, so as to ensure that the enterprise is on the right development road. How enterprises use information platform to sell products, marketing model will become the business focus. Scientific marketing model will bring inestimable economic benefits to enterprises. How to promote the development of enterprises with the help of informatization has become the focus of thinking.

### **1.2.1 Influence of e-commerce on market development mode**

#### **1. Brief introduction of e-commerce**

Product production, sales, logistics and other processes using network information technology to complete the whole link refers to e-commerce. The emergence of e-commerce has changed the traditional marketing mode and broken the inherent marketing limitations, which is a successful attempt. E-commerce can use information technology to realize product trading, and solve the problems encountered in the process of production and sales. In the process of sales, it can save costs and provide reliable technical support for enterprises to improve operational efficiency. E-commerce eliminates restrictions on time and region and can assist enterprises to achieve global development. The openness of the Internet enhances regional connectivity. Enterprises can rely on the Internet to seek greater development and expand the marketing space. In



the relatively open environment of the Internet, enterprises can develop marketing plans to meet social needs. E-commerce marketing is the enterprise to directly express products to consumers, omitting other links, control the cost of products, consumers get actual benefits. There are also great changes in the means of payment, enterprise and individual marketing can realize online payment, consumers get great convenience.

## 2. Improve the reputation of enterprises and merchants

When using e-commerce platform to purchase, consumers can experience relatively complete consumption behavior guarantee, which is a prominent advantage in the traditional consumption mode. The monad business platform is relatively transparent, and consumers can enjoy relatively perfect after-sales service after purchase, and can conduct comprehensive evaluation of sellers, and such evaluation record can be seen by all consumers. In order to maintain stable customer resources, enterprises must constantly improve their service ability and maintain their reputation from all aspects. Enterprise reputation is mostly determined by product quality. In this respect, enterprises will supervise themselves, and then provide unique and personalized services according to consumers' actual needs to improve consumer satisfaction. Enterprises will pay more attention to all-round services for consumers, in order to attract more consumers. The actual demand of consumers is the direction of market development. Enterprises should make full research on the market, constantly adjust their own services, and improve their feelings of using products. E-commerce makes the market and consumption transparent.

### 1.2.2 Influence of e-commerce on marketing model

#### 1. The change of marketing environment

E-commerce can also provide enterprises with the latest market information through the Internet network. With the development of economy, people have personalized and diversified demands for life. In front of the great market demand, enterprises can quickly capture the market consumption information, facilitate the rapid transformation of producers, and make consumers and producers more closely connected. The e-commerce model eliminates most middlemen, gradually replacing the original seller's market and transforming into a consumer-centered buyer's market. In the face of the transformation of marketing mode, enterprises should change their focus of operation. Enterprises should consider how to provide quality products and better services for consumers, so that consumers can increase their recognition of enterprises and have interest in purchasing products.

## 2. The change of marketing methods

E-commerce has broadened marketing channels, changed sales methods, and provided a wider direction for marketing. Traditional marketing method of production needs to hire. With a large number of manpower, a larger financial and material input, cost input is larger, the effect is difficult to guarantee. E-commerce marketing has fewer geographical requirements, and sales activities can be carried out in different parts of the world. A direct bridge between producers and consumers is built, which improves transaction efficiency. Transactions are completely dependent on electronic bills as vouchers, reducing repeated links of buying enough.

## 3. Speed up marketing

In the new era, producers can improve the efficiency of product sales. E-commerce is characterized by convenience and high efficiency, and constraints such as time and space will not be a problem. Trading on the network effectively improves the sales efficiency, avoids the loss of products due to time and climate, and the products can be adjusted in time according to market feedback. Only with the help of the Internet can the producer know the latest demand of consumers at the first time. In the future market sales, consumers and enterprises will first choose the e-commerce marketing model. E-commerce platform enables consumers and sellers to communicate effectively and timely, and problems arising in transactions can be dealt with in time, effectively improving the efficiency of transactions.

### **1.2.3 Spillover effects of different forms of content marketing on e-commerce platforms**

With the rapid development of mobile Internet, mobile payment and big data, the social e-commerce based on the fractured communication of social relations comes into being. Consumers release the consumption experience of goods or services on the social e-commerce platform for different motives, and the consumption experience affects the purchase decision of potential consumers to varying degrees, thus affecting the products in the traditional e-commerce platform and social e-commerce platform. In terms of commodity sales in different shopping situations such as self-run mall, the impact of UGC in such social e-commerce platforms on the commodity sales of traditional e-commerce platforms is the spillover effect.

For consumers, social e-commerce platform is a reliable channel to obtain commodity information, because through the recommendation of others, users' trust in the product will reduce their dependence on the brand. For businesses, it is a fast and effective way to promote products, open awareness and establish brands. As long as the products are good enough and cost-effective enough, they can be spread by word of mouth, giving small and medium-sized long-tail goods broader space for development. Therefore, the importance of social e-commerce in the field of consumer behavior and marketing is self-evident, and all of these rely on user-generated content in social e-commerce platforms. With the development of the Internet, people have more convenient and diversified channels to obtain information, and most consumers choose to refer to other consumers' experience before making purchase decisions. Through the sharing and dissemination of user-generated content, it can promote the formation of consumers' cognition of a certain commodity or service and influence consumers' purchase intention. Many studies have shown that consumers perceive information from the general public as more credible than advertising slogans used to promote products. However, due to the existence of different factors such as users' motivation, environment and their own degree of professional knowledge when creating user-generated content, the quality of user-generated content information is uneven, and consumers need to invest a lot of time and energy to find out useful information for themselves, which seriously affects the realization and utilization of the value of user-generated content.

### **1.3 Research question**

At present, there are many studies of user-generated content on consumer consumption behavior and commodity sales. Godes and Mayzlin (2009) found that online reviews had a significant positive impact on the sales of online books, while Goh et al. (2013) compared the difference between merchant generated content and user-generated content for consumers' purchase intention and purchase behavior. However, the comparison of the relative influence of different forms of content and the spillover effect of content marketing for other categories of products are rarely involved.

Based on the above social background, two research questions of this paper are proposed:

Research question 1: What is the direct impact of different forms of content marketing on e-commerce?

The question will focus on the impact of consumers watching different forms of content on the consumption behavior of the same category of products. This paper takes the largest e-commerce platform of Taobao —— in China as an example, selects one of the first-class products, refers to the relevant research of content marketing, selects appropriate variables, establishes econometrics model, and compares the differences between consumers' influence of watching different forms of content on the consumption behavior of products of the same category of products.

Research question 2: What is the impact of different forms of content marketing on the spill over effect of e-commerce platforms?

On the basis of the research question 1, the main purpose of this question is to study the spillover effect of content marketing, that is, to explore whether there is impact of consumers watching different forms of content on their consumption of other categories of products. Another first-level category of product was selected to compare the difference between the effects of the consumers watching the different types of content on consuming the behavior of the other categories of products.

#### **1.4 Research objectives**

Consumers release their consumption experience of commodities or services on social e-commerce platforms for different motives, and the consumption experience affects the purchasing decisions of potential consumers to varying degrees, thus affecting the sales volume of commodities in different shopping situations such as traditional e-commerce platforms and self-operated shopping malls on social e-commerce platforms. This paper aims to study the influence of different forms of content marketing in e-commerce platforms on consumers' consumption of the same category of products, as well as the spillover effect on consumers' consumption of other related categories of products.

From the perspective of consumers, this study innovatively uses the econometric model to estimate the impact of different forms of content marketing on consumers' consumption behavior, hoping to fill the gap in the research on content marketing, and achieve the purpose of providing some reference for e-commerce platforms and merchants' marketing strategies.

### **1.5 Significance of Study**

This research has certain theoretical significance and commercial analysis value. Among them, the significance of theoretical research can be summarized as follows:

- 1) This article fills in some of the comparison about the impact of different forms of content in current content marketing A blank space;
- 2) This paper uses econometrics empirical modeling method, based on the concrete reality of consumer data, quantity. This paper analyzes the influence of content marketing on consumer behavior and enriches the quantitative analysis methods and empirical research results in the field of content marketing.
- 3) This paper not only verifies the direct impact of content marketing on the same category of products, but also studies. Its spillover effect across categories provides some insights into the fields related to spillover effect.

The value of business analysis in this paper can be summarized as follows:

- 1) For e-commerce platform, this paper provides the theoretical basis and analysis of consumer perspective modeling.  
Methods: To excavate the causal relationship between content marketing and consumption behavior, and compare the differences in the impact of different types of content on consumption behavior, so as to provide certain reference value for the subsequent promotion and operation of content platforms.
- 2) For sellers on e-commerce platforms, the analysis results of this paper will help them choose content marketing. The type provides a certain theoretical basis.
- 3) The analysis results of this study are found based on real user behavior data, so for the whole. The development and perfection of capacitive ecology has certain guiding significance.

## CHAPTER 2 LITERATURE REVIEW

### 2.1 Content marketing

#### 2.1.1 Definition of content marketing

Internet social media occupies the majority of consumers' online time, so both social platforms and merchants will focus on increasing their social media activity, and content marketing has become an important marketing method.

The definition of content marketing is not unified in the academic world. This definition shows how companies use online content marketing to attract customers, enhance interaction, and improve customer loyalty. According to Smith and Chaffey (2013), the content includes static graphic web pages, as well as dynamic media content (such as video, audio, etc.). Holliman and Rowley (2014) emphasize that content marketing is a marketing method for enterprises to achieve their business goals through content. Domestic scholar Kong Qingxi (2009) believes that content marketing is an invisible form of advertising, emphasizing its entertainment and story. In Ran (2011) believes that content marketing mainly refers to the enterprise through a variety of forms of media content (including graphic blog and dynamic film and television video, etc.) to do marketing communication, and the biggest difference between traditional marketing, content marketing from the perspective of providing answers to consumers transfer information to consumers, so as to reduce disgust, improve consumer acceptance of information. Zhou Yijin and Chen Jiahui (2013) believe that content marketing is a marketing method in which various forms of media content, disseminate valuable and entertaining products or brand information through various channels, and allow consumers to participate, to establish and improve the brand in the process of interaction.

To sum up, this study believes that content marketing is a way of marketing that conveys valuable content to consumers through different media in the form of pictures, text, video and live broadcast, and finally realizes the commercial purpose. The E-commerce platform vigorously develops the content ecology inside it, which is conducive to meeting the users' demand for product information, cultivating the consumers' trust, and thus promoting their purchase intention.

### 2.1.2 Marketing Party generates content

With the development of social networks, the popularity of social media provides a carrier for the spread of Content, which promotes the wide spread of Firm Generated Content (FGC) and MarketGenerated Content (MGC) by enterprises and merchants. Both emphasize that the content is created by the enterprise or professional marketing personnel, hereinafter referred to as the marketing party. Research on MGC mainly focuses on the influence of brand community in social media on consumer demand, consumer engagement and product sales.

Goh et al. (2013) analyzed the impact of social media brand community content on consumer demand from the aspects of text (information richness and titer) and communication mode (direct and indirect) by using the data of individual users in Facebook brand community. Research has found that content generated by marketers plays a Persuasive Effect on consumers.

Kumar et al. (2016) found that enterprises' investment in brand communities (such as the establishment of fan pages in Facebook) can significantly strengthen the connection between consumers and enterprises, and have a positive impact on the revenue of enterprises. They analyzed FGC's Spending on customers, cross buying behavior, and Customer Profitability from three dimensions: valence, receptivity, and customer sensitivity. Research shows that content receptivity has the greatest influence, followed by content titer and sensitivity. This shows that content marketing in social media provides consumers with the opportunity to participate in FGC interaction, which makes FGC more influential to consumers. In addition, the study found that FGC has a greater impact on customers who are willing to experiment with new technology and frequent users of social media. FGC has synergistic effect with TV marketing and email marketing. Lee et al. (2018) noted that content related to Brand Personality, such as content with emotional color or humor, would have higher consumer engagement. Direct Informative Content, such as referring to price and promotion, will reduce consumer engagement but will be informative if combined with brand personality. The results show that the combination of content information characteristics and brand personality will be beneficial to brand content marketing.

Wan and Ren(2017) made use of the data of Taobao content module "Wetao" and found that the overall product sales increased by 51.47% after the introduction of MGC. They classified MGCS as Informative, Persuasive, and Promotional. Informative content has been found to be more effective than persuasive or promotional content in promoting product sales. However, this effectiveness depends on the type of product. Product

involvement is an important attribute of a product, representing consumers' evaluation of the importance of a product based on their own needs and interests (Muncy&Hunt, 1984; Zaichkowsky, 1985). High product involvement means that the product has higher value or purchase risk for consumers (Lastovicka, 1979). The researchers selected beauty products as products with high involvement, stationery products as products with low involvement, and found that information content was more effective for products with high involvement. For products with low involvement, persuasion and promotion are more effective.

### **2.1.3 User-generated content**

In addition to the marketing Generated Content in social media and e-commerce platforms, there is also an important form of content -- User-generated Content (UGC). The Word Of Mouth (Word Of Mouth, WOM) generated content gets marketers' attention. For example, more than 1.5 million businesses have registered brand communities (such as fan pages) on Facebook for marketing purposes (Goh et al., 2013). Despite the widespread use of social networks, empirical research on user-generated content is still limited.

First, most of the existing research focuses on quantitative aspects of UGC (such as the volume of reviews and ratings) and studies the economic value of UGC at an overall level. For example, on the impact of user reviews on the sales volume of one-time purchased products (movies, books, video games, etc.) (Chintagunta et al. 2010, Duan et al. 2008; Liu, 2006), and the impact on sales volume of repeatable products (beer, beauty products, etc.) (Clemons et al. 2006; Moe & Trusov 2011). These studies generally conclude that online reviews (volume or rating of reviews) have a positive impact on overall product sales.

In addition to quantitative analysis, there are also some studies on the qualitative analysis of social media content marketing. Forman et al. (2008) found that disclosing reviewers' identity information and geographic location to reviewers and consumers would increase product sales, a conclusion that emphasized the influence of qualitative factors. To test the qualitative impact and economic value of UGC, researchers often use qualitative analysis methods (such as text mining) or tools to extract embedded information from text content. Pavlou and Dimoka (2006) extracted the information of "goodwill" and "credibility" from the feedback comments of sellers in the eBay online auction market. They found that the information of sellers' good performance in the past contained in the comments helped consumers build trust in the sellers, thus creating price



premiums for sellers with good reputations. Ghose and Ipeiritis (2011) constructed two measurement methods based on text attributes (subjectivity and readability) and found that both of these attributes had a positive impact on sales. Sonnier et al. (2011), Tirunillai, and Tellis (2012) further classified online communication into positive, negative, and neutral emotions and found asymmetric effects on firm sales and stock trading. In essence, this type of research reports the impact of social media UGCs on the economic consequences at the aggregate level.

Ugcs and MGCS don't play exactly the same role in content marketing. Although some studies (Mayzlin, 2006; Trusov et al., 2009) tried to evaluate the role of UGC, MGC or other marketing means in marketing activities, and empirical studies on the impact of UGC and MGC on consumer consumption behavior are still very scarce. Since consumers and marketers are constantly using social media, consumers' purchase decisions are often influenced by UGCs and MGCS. Potential conflicts come from different consumption motives, consumer demands and the degree of suspicion towards MGC (Escalas 2007; Obermiller & Spangenberg 1998). Combining the potential duality of UGC (e.g., positive and negative effects) and online WOM (Godes & Mayzlin, 2009), the existing literature is still limited to the impact of online reviews and online communication on product sales and consumer behavior, while ignoring the comparison of different forms of content marketing (short video, live broadcast, graphic, etc.).

## **2.2 Virtual Product Experience**

### **2.2.1 Development of virtual product experience**

Consumers need real product information to make purchase decisions (O'Keefe & McEachern, 1998). Such information requirements are particularly important in experiential products, because the real quality of experiential products can be best verified after direct consumption experience (Nelson, 1970). When consumers need more product information, they can Experience the product directly through real life, secondary information sources (such as labels) and VirtualProduct Experience (Li et al., 2002).

Traditional in-store shopping allows consumers to perceive product information from various aspects, such as the store environment, product display and service. However, e-commerce platforms mainly rely on the network to disseminate product information and manage customer relations. There are two important concepts in CRM, such as social presence and product perception. The former refers to the distance between consumers and e-commerce platforms, while the latter refers to the distance between

consumers and products. In order to narrow these two distances, e-commerce platforms launch various online product display and experience methods (mainly product visualization) to enable consumers to perceive and experience products online, which is virtual product experience (Jiang & Benbasat, 2004). The display of products in the form of VPE makes consumers better understand the products and lead to higher purchase intention (Li et al., 2002; Jiang & Benbasat, 2007; Daugherty et al., 2010).

Product visualization from multiple angles and distances enables consumers to better obtain product information (Then & DeLong, 1999). For this reason, social media and e-commerce platforms carry out various ways to convey information about products to consumers, such as displaying other consumers, comments from opinion leaders, and introducing various forms of content (graphics, short videos, live broadcasts, etc.). Previous studies have shown that sample display of experiential products (e.g. fashion, film, music) can help consumers understand product quality and influence demand (Bawa & Shoemaker, 2004; Oberholzer-Gee & Strumpf, 2007; Kumar et al., 2014).

### **2.2.2 Features of virtual product experience**

Steuer (1992) defined vividness and interactivity as dimensions for evaluating product experience in social media. Vividness refers to the media environment where content provides rich perception; Interactivity measures the extent to which a user can change and influence the form of content or media environment. Vividness means the richness of product information, and interaction provides consumers with more freedom to explore the content and form of product information.

In the wake of Steuer's (1992) groundbreaking definition, much research has emerged on the visual presentation of online products and their mechanisms. Vivid and interactive product displays provide consumers with virtual product experience, which can help consumers evaluate product attributes just like shopping in real life (Li et al., 2002; Klein 2003; Benbasat, 2004; Suh & Lee, 2005). This virtual product experience allows consumers to better evaluate and understand the features of the products and how they complement each other. Dahan and Srinivasan (2000) point out that web media with higher interactivity and richness perform better in improving users' product experience. Interactivity enables consumers to examine information of interest and aid their cognitive processes (Ariely 2000, Jiang & Benbasat 2004). Jiang & Benbasat (2007) found that increasing vividness and interactivity can promote the dissemination of relevant information about products.

### **2.2.3 Live streaming and short videos**

Klein (2003) pointed out that product video provides consumers with vivid product experience, which weakens the main limitation due to the lack of actual product experience. Compared with static graphics, more dynamic and interactive video displays help online consumers understand and evaluate product quality and performance. Video advertisements provide a more vivid display of product attributes (dynamic, 360-degree presentation, etc.), and the sound or background music of video advertisements also stimulates consumers' multiple senses. Moreover, video has interactive features, such as drag, pause, replay, fast forward, etc., which enable consumers to discover product features at their favorite speed. Suh and Lee (2005) proved through experiments that virtual reality interfaces can comprehensively improve consumers' understanding of products. Kumar and Tan(2015) believe that video brings limited interactivity to consumers, such as pause, image amplification, etc. These studies all show that video display with more vividness and interaction can reduce consumers' uncertainty of products and improve consumers' cognition of products.

Live streaming and short videos about products are all content forms of video product experience or advertising. Todd and Melancon (2018) pointed out that live broadcast is an open broadcast containing audio and video content, through which the anchor can communicate with the audience, and the audience can interact with the anchor through comments. However, there is no clear definition of short video in the literature. Based on the observation and investigation of existing platforms containing short videos, this paper believes that short videos are video content forms that have been recorded before release and can be transmitted in social media within 20 minutes. The main difference between live streaming and short video is that live streaming puts more emphasis on real-time interaction and presence (Li et al., 2018).

At present, the research on live streaming and short video is limited to audience interaction or motivation, and the influence of both on audience consumption behavior is rarely involved. Tu et al. (2018) analyzed the performance of virtual gifts given by users in live streaming platforms. 20% of the audience contributed 97% of the gifts, and 77% of the audience only gave gifts to the top three anchors. Sjöblom and Hamari(2017) studied users' motivations for watching live games, mainly from four aspects: information search, stress relief, social integration needs, and emotional needs.

Among them, the motivation of stress relief has the greatest impact on the duration of watching game live broadcast, the motivation of social needs has the greatest impact on subscription behavior, and the motivation of information search has a significant impact on the number of watching game anchors. Campbell et al. (2017) analyzed consumers' behavior of skipping pre-interstitial video ads and found that pre-interstitial ads with less obvious emotional characteristics were more likely to be skipped by viewers. Kumar and Tan(2015) found that the introduction of video display products would increase the sales volume of clothing products by 14.5% and accessories by 28.3%. To sum up, the existing literature has not yet studied the impact of comparing live broadcast and short video on consumer consumption behavior.

## **2.3 Spillover effect**

At present, there are mainly three kinds of research on spillover effect in the field of marketing in the academic circle :(1) spillover effect between products of the same brand; (2) spillover effect between competing products; (3) Spillover effect between cross-category products. In this section, literatures related to these three spillover effects will be reviewed respectively.

### **2.3.1 Spillover effect of same brand**

When a brand contains multiple products and is advertised separately, advertising spillover effect will occur. For example, product A and B share the same brand, and the advertising marketing of product A has an impact on the utility of consumers on product B, which is the spillover effect of same-brand advertising (Balachander & Ghose, 2003).

It is found that the demand for a sub-brand can affect the demand for other members of the brand (Aaker,2004). Goeree (2008) points out that good reputation of existing products will increase the demand for new products of the same brand (forward spillover), and new products with good quality can enhance brand image and promote sales of existing products of the brand (backward spillover)(Choi, 1998; Luis, 2000). Similarly, Hendricks and Sorensen (2009) found that the release of new albums by artists can increase the sales of their previous albums (backward spillover). Dong and Chintagunta(2016) studied the spillover effect of financial business satisfaction. They found that when a company provides both banking and investment services, consumers' dissatisfaction with one of the services will lead to a decrease in the possibility of retaining the other business.

### **2.3.2 Spillover effect of competitive products**

The advertising marketing of a product may have spillover effects on its competing products. Intuitively, it is believed that such spillover effect will be InterferenceEffect; that is, interferenceeffect will interfere with consumers' recall of similar products of competing brands (Keller, 1991; Burke & Srull 1988). Consumers affected by advertising will change the brands they buy (Deighton et al., 1994). Chae et al. (2017) found that Seeded Marketing campaigns of brands will reduce the online word-of-mouth of other competitive products.

However, there are also studies showing that advertising can have positive spillover effects on competitive products, that is, competitive brands may benefit from cross-brand word-of-mouth marketing (Libai et al., 2009). Shapiro (2018) found that advertising for new drugs has positive spillover effects on other drugs in the same category. Similarly, Liu et al. (2015) found the positive spillover effect of competitive brand advertising in the frozen yogurt market. These studies all fall into the CategoryExpansion spillover effect, in which advertising creates consumer awareness of products in a category. Lewis and Nguyen (2015) Samsung tablet ads have a positive spillover effect on the search volume of Apple iPad. A similar mechanism can be applied to social media platforms. When a user shares product consumption information on social media, their friends or fans may be influenced to follow the application he or she uses, which may stimulate the demand for this type of application. Li and Agarwal(2017) found that after Instagram was acquired by Facebook, the demand for the entire photo-sharing category of apps increased.

### **2.3.3 Cross-category spillover effect**

There are two kinds of cross-category spillovers, namely Complementarity Effect and Expenditure Effect. The former refers to the increase in the purchase of a certain category of products may lead to the increase in the consumption of other related products; The latter means that increased consumption of one product category may lead to reduced consumption of other products (Niraj et al., 2008).

Some economic literature examines the cross-category spillover effect of related products from the perspective of demand change. For example, the presence of software may affect the demand for hardware (Binken & Stremersch,2009). Niraj et al. (2008) found that the promotion of daily necessities has cross-category spillover effect, and the spillover effect is asymmetrical. The promotion of bacon had a bigger effect on egg profits than the promotion of eggs on bacon, i.e. the promotion of bacon was more profitable for

the retailer. Sridhar et al. (2012) studied the cross-category spillover effect of organic products. Increasing product awareness and introducing product raw materials and safety are not only beneficial to product focus, but also have a positive impact on other categories of products.

The above research is mainly about the marketing model of traditional retail industry. In the emerging e-commerce platforms, cross-category spillover effect also exists. Oestreicherhe and Sundararajan (2012) studied the spillover effect in the Amazon book co-purchasing network. Placing static pictures of co-purchasing books in the main book homepage affected the correlation between the sales volume of the two. Fashion is a kind of experience-oriented product, and consumers must try it on to perceive product quality. Video product display can provide consumers with virtual product experience, so as to help them understand and evaluate product features. Kumar and Tan (2015) conducted a phased randomized trial on a fashion retail website. In a fashion video, a real model would perform a dynamic, high-definition, 360-dimensional display of clothing samples, including some accessories. By comparing the static graphic product introduction and dynamic video product display in stages, it is found that the introduction of video will increase the sales volume of clothing products by 14.5% and the sales volume of accessories by 28.3%. That is, joint product display in video not only affects consumers' understanding of product features (direct impact), but also affects their demand for joint products, which comes from the discovery of complementarity between products (spillover effect).

#### **2.4 Factors affecting consumer consumption behavior**

Since the research content of this paper is the impact of content marketing on consumer consumption behavior, it is necessary to understand other factors that affect consumer consumption behavior.

Rishika et al. (2013) found that consumers' social media home pages of participating merchants had a significant positive impact on their offline shop visits, thus significantly increasing their consumption amount. When constructing the model, they added price sensitivity, user loyalty, and consumer demographic characteristics (such as age, income, gender, etc.) to control heterogeneity. Moe and Fader(2004) modeled the transformation behavior of e-commerce website consumers from access to purchase, and proposed key influencing factors, including the number of visits, purchase threshold, heterogeneity among consumers, changes of consumers over time, etc.

Among them, the purchase threshold of consumers may depend on their historical buying experience (Beatty & Ferrell, 1998). Therefore, factors influencing consumer behavior should include not only demographic characteristics (such as age, gender, etc.), but also characteristics that can measure their historical purchasing behavior.

## **2.5 Summary of this chapter**

This chapter reviews literature on content marketing, virtual product experience, spillover effect, and factors affecting consumer behavior. Current relevant studies have confirmed that content marketing has a positive effect on consumers' attitudes and behaviors towards brands. Content marketing can influence other consumers' purchase intentions and behaviors through social networks (Godes & Mayzlin, 2009; Goh et al., 2013), but at the same time, in the field of content marketing, there is a lack of more specific research on the comparison of different forms of content, and there is still no consistent conclusion on the strength of the relative influence of different forms of content. At the same time, the main research content of these studies is the impact on the sales volume of the products contained in the content, instead of the spillover effect between other products or categories. Based on the existing research, this paper will propose research questions and hypotheses in the following content, and build an empirical model by referring to relevant literature.

## CHAPTER 3 RESEARCH METHODOLOGY

### 3.1 Research project

At present, there are many studies on the impact of user-generated content on consumer consumption behavior and commodity sales. Godes and Mayzlin(2009) found that online reviews have a significant positive impact on online book sales. Goh et al. (2013) compared the difference between business-generated content and user-generated content on consumers' purchase intention and behavior. However, the comparison of the relative influence of different forms of content and the spillover effect of content marketing on other categories of products are rarely involved.

Based on the literature review, two research questions are put forward.

Research question 1: The direct impact of different forms of content marketing on e-commerce platforms

Specifically, this part studies whether consumers watching different forms of content of a certain category on e-commerce platforms has a significant impact on their consumption of products of the same category. This study selects a first-level category product, refers to relevant studies on content marketing and processing effects, selects appropriate variables, builds an econometric model, and compares the differences in the influence of different forms of a category content on consumers' consumption behaviors of the same category products. This issue concerns the direct impact of different forms of content on the consumption of products within the same category.

Research question 2: Spillover effect of different forms of content marketing in e-commerce platform

Specifically, this part studies whether different forms of content viewed by consumers on e-commerce platforms have a significant impact on their consumption of other categories of products. Based on research question 1, this study selects another first-level category product, refers to relevant studies on processing effect and spillover effect, and compares the difference of influence of different forms of content on consumers' cross-category product consumption behavior.



The research hypothesis model is shown in the figure below:

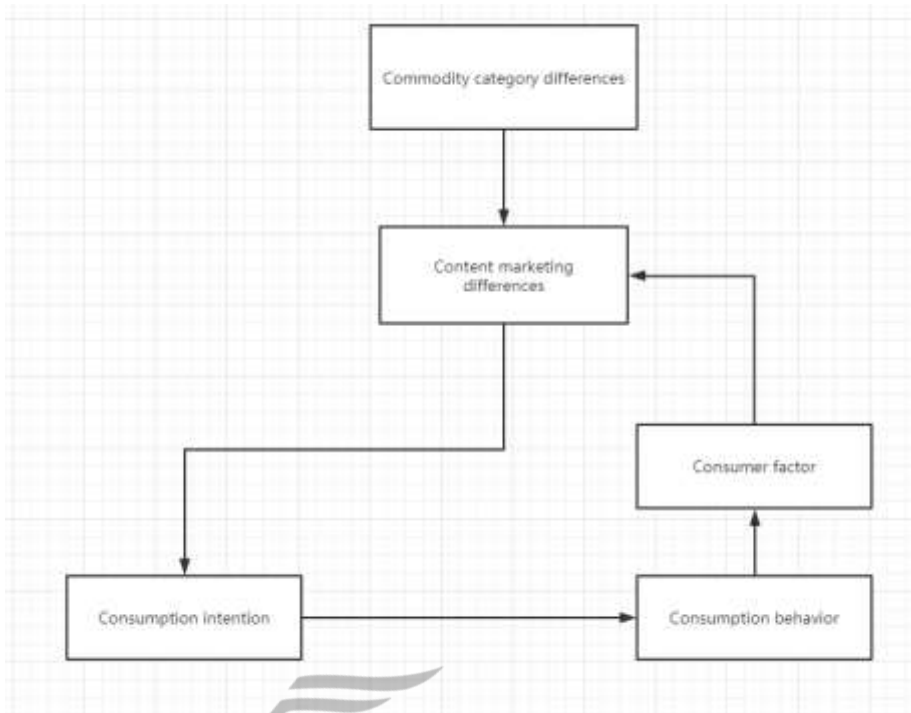


Figure 3-1 studies the hypothetical model

### 3.2 Sample & Sampling Technique

#### 3.2.1 Instructions of study sample selection

Based on the definition of market segments and the selection of variables required by the research question, this study randomly selected the daily viewing content records and daily consumption records of 237 active users from November 30, 2022 to December 30, 2022, as well as the demographic characteristics of consumers, and obtained sample data by writing codes through online query and data table connection. The original data of the whole sample is described as follows:

1. Record of viewing contents (daily times of watching live broadcasts of women's wear, daily times of watching short videos of women's wear, daily times of watching pictures and texts of women's wear, daily times of watching live broadcasts of non-women's wear, daily times of watching short videos of non-women's wear, daily times of watching pictures and texts of non-women's wear, preference characteristics)
2. Record of commodity consumption (amount of women's clothing purchased daily)
3. Content characteristics (form of content and number of commodities contained in content)

4. Demographic characteristics of the sample (gender, age, registration duration, purchasing power level and buyer letter) Use score, buyer star ID, naughty value)

### **3.2.2 Accessibility and Ethical Issues**

For the sake of network information security, this study will use the questionnaire method, rather than select the controversial data crawler. After determining the categories, the research released questionnaires on wechat, forum, Post bar and other social platforms, the main purpose of which was to obtain the real data of Taobao users. Participants of this study will be informed in the questionnaire that this survey is for the purpose of academic research, and the survey data will be kept strictly confidential and will not be made public or used for other purposes. The survey will be anonymous, the personal information of the respondents will not be disclosed, and only the data needed by the research will be selected, and the survey data will only be used for statistical analysis purposes.

The respondents can choose whether to participate in the survey or not according to their own wishes, or they can choose to answer the questions freely, without any form of pressure. The respondent can request to stop the survey at any time, and the data will be destroyed and no longer used. A total of 300 questionnaires were distributed in this study, and 237 valid questionnaires were collected. Detailed questionnaires are shown in the appendix.

### **3.2.3 Descriptive statistics of the questionnaire**

The key data used in this survey is about user behavior. In addition, personal information only selects a general category, and this part of data is processed in the form of coding in the later stage. Sample demographic characteristics are shown in the following table:

Table 3.1: Basic information about the survey object

Variables	Categories	Frequency	Percent(%)
Gender	Male	24	22.8
	Female	183	77.2
Age	Under the age of 18	35	1.4
	18~25	73	30.1
	26~30	39	16.4
	31~40	65	27.4
	41~50	14	5.9
	51~60	11	4.6
	Over 60	0	0
Education	High School/Vocational/Technical Secondary/Skill Worker School	15	6.3
	College	80	33.7
	Undergraduate	108	45.5
	Postgraduate and above	34	14.3
Taobao registration year	1 year or less	3	1.2
	1~2 years(including 2 years)	16	6.7
	2~3 years(including 3 years)	44	18.5
	3~5 years(including 5 years)	78	32.9
	5~8 years(including 8 years)	92	38.8
	8~10 years(including 10 years)	4	1.6

### 3.3 Data and variables in study question 1

The data in this paper come from Taobao, the largest e-commerce platform in China. Since 2015, Taobao has made great efforts to develop its content ecosystem and transform itself into a social e-commerce platform.

Taobao content ecology includes three parts of users, which are sellers, Taobao experts and consumers. Sellers: they can create content on the platform by themselves or directly carry out content marketing through cooperation with experts to increase product exposure and promote sales.

Taobao Talent: Taobao Talent refers to influential users certified by Taobao. Such users are opinion leaders in Taobao and have a fan base. By cooperating with sellers, they can generate content containing products to attract fans' attention and gain returns. Sellers themselves can also register as masters.

Consumers: Watch related product content through subscription or system recommendation to learn more product information and help make purchase decisions.

The Taobao content platform provides an opportunity for sellers to cooperate with Dantes, and distributes the content generated by Dantes to consumers by way of subscription or recommendation. The impact of different forms of content marketing on consumer behavior has become the focus of attention of platforms, sellers and talent.

Taobao content platform includes six main forms of content, two of which are video and four of which are text and text. They are:

- (1) Live broadcast: real-time video information stream, the content is usually the introduction of multiple products by real anchors. During the live broadcast, the audience can interact with the anchors through comments and other ways. The left picture in the table below is a screenshot of Taobao Live streaming. Anchors can interact with users in real time by viewing user comments in real time. Viewers can click the button in the lower left corner to view the products included in the live streaming. Livestreams tend to be long and often include multiple items.
- (2) Short video: recorded product introduction video. The average length of short videos on Taobao's content platform. It is 37 seconds and usually contains only one item.
- (3) Single product: introduce the content of a product in graphic form.
- (4) Post: introduces the content related to the product in the form of text and text, including the number of products.
- (5) List: introduces the graphic content of a group of products, including an indefinite number of items.
- (6) Collocation: The graphic content of the relevant product collocation is introduced, and the number of products is indefinite. The above six forms of content all contain commodity links, and consumers can jump to their home page directly by clicking the commodity links.

Among them, single item, post, list and collocation are all in graphic form, that is, only contain pictures and text, so I call these four categories unified as graphic form of content. This paper focuses on three forms of content: live broadcast, short video, text and text.

Next, this paper will select the market segment of the product category.

Taobao divides all products into 150 first-level categories. This study will focus on a first-level category of Taobao products for two reasons:

(1) From an academic point of view, focusing on a market segment will reduce the possibility of missing variables, and researchers cannot fully take into account the differences between all product categories;

(2) From the perspective of practice, merchants on Taobao platform tend to focus on selling single or related categories of goods, and select specific first-level categories of goods for research, which has higher reference value for merchants; The operation of commodities on the platform is also divided into market segments, so the research on the field of segmentation is of more reference value for both the merchants and the platform.

The following is a breakdown of the top 20 Category I and the number of items under this category from November 30 to December 30, 2022:

Table 3.2 Statistics of Taobao

Category name	The number of goods
Women's wear / women's boutique for self-use idle transfer	2674062
women's shoes	815974
Children's / baby / parent-child wear	457936
men's clothing	425229
Accessories / popular jewelry / fashion accessories new bags	384394
Leather goods / hot-selling girls / boys bags	361969
3C Digital Accessories	301294
Women's lingerie / Men's lingerie / home wear	299736
Toys / buggy / puzzle / building blocks / models	289066
Beauty / body / essential oils	263195
Cars / supplies / accessories / modifications	254950
Colkeup / perfume / beauty tools	243498
Residential furniture	236032
Catering utensils	189677
Electronic dictionary / e-book / stationery	179827
Books / magazines / newspapers	176473
Home cloth art	173722
Snacks / nuts / specialties	155471
Outdoor / mountaineering / camping / travel supplies	154307
Sports / yoga / fitness / fan supplies	147472

As can be seen from the above table, the number of "women's/women's fine products" on Taobao platform is the largest. While women's wear is a typical experience-oriented product (Li Zongwei & Zhang Yanhui, 2013), consumers often need personal sensory awareness to comment and measure, so the impact of content marketing on such products is more worth discussing. Kumar and Tan(2015) found that the introduction of dynamic video display products would increase the sales volume of clothing products by 14.5%. Therefore, I choose women's clothing category as the market segment of question 1.

Therefore, I can get my research objects, including the influence of women's live broadcast, short videos and pictures on consumers' purchase of women's products.

So far, the specific market segment of research question 1 has been determined, that is, to study whether consumers watching different forms of women's wear content has a significant impact on their purchase of women's wear products.

### **3.4 Study the data and variables in Question 2**

This research focuses on the influence of different forms of viewing of specific category content on the consumption of other related categories. There were previous studies on the spillover effect of content marketing across categories. Kumar and Tan(2015) found that the introduction of dynamic video display products would increase the sales volume of accessories by 28.3%.

With the development of science and technology and economy, people's pursuit of beauty is constantly improving, and beauty products are playing an increasingly important role in consumers' consumption field. According to the "2017 China Beauty Care Consumption Trend Report" jointly released by CBNDData and Tmall Beauty, with the upgrading of consumption, consumers have strong demand for makeup. Makeup, especially online makeup, is growing rapidly and has become the "incremental responsibility" of the development of online makeup. The sales growth rate has exceeded 50% in the past four years. With the gradual maturity of users' online consumption behaviors, old users' contribution to online beauty consumption will be greatly enhanced. And their online consumption behavior is also extending to more categories. The online consumption behavior of beauty consumers is active, and the per capita cross-category consumption times continue to rise, and the sales growth rate is more than 10% in the past two years. Cross-category products have a direct relationship with different groups of people. Among them, the proportion of women's wear, phone charge recharge, 3C digital, snack nuts in different groups is worthy of attention. For the overall beauty market, 2016

is the first year of crossover development. More and more professional skin care brands are entering the field of makeup; Comprehensive skin care brand to expand makeup product line; Non-beauty merchants have entered the field of makeup, especially fast fashion brands have launched their own beauty products (Zara, HM, etc., have established their presence in the beauty market).

In the highly competitive beauty market, not only direct marketing is needed, but also marketing in related products should be explored. As an experience-oriented product, beauty products are similar to women's wear, requiring consumers to accept more intuitive product information before making purchase decisions. Complete makeup and hair and clothing collocation, for consumers, more referential significance. Research shows that, no matter in traditional offline marketing or online marketing activities, consumers pay more attention to content marketing for women's wear than women's wear itself, including the whole makeup and hair matching of models and so on. Therefore, I choose beauty products on Taobao platform as the object of spillover effect of women's content marketing.

### **3.5 Setting of model variables**

This section describes the selection and preprocessing of model variables.

The purpose of this study is to compare the direct influence of consumers watching different forms of women's clothing content on the purchase of women's clothing products and the spillover effect on the purchase of beauty products. Therefore, it is necessary to extract the basic characteristics of sample users, the consumption records of women's wear products and beauty products, and the records of watching various forms of content.

In order to control the influence of the contents watched in the past on the consumption behavior later, I adopted the sliding window method to process the data. That is, from November 30, every 10 days will be taken as a time period, and 50 time periods of 10 days will be obtained. Then the sum of the viewing content records and commodity consumption records of the samples in the 50 time periods is made to obtain the aggregate data of every 10 days.

#### **(1) Basic characteristics of sample users**

There is heterogeneity among consumers, whose needs for products and related information vary from person to person. Rishika(2013), Moe and Fader (2014) all added the demographic characteristics of samples to control the heterogeneity when constructing models related to consumption behavior. Moe and Fader (2014) point out

that consumers' purchase threshold is a key factor influencing their conversion behavior from access to purchase, and consumers' purchase threshold may depend on their historical purchasing experience (Beatty & Ferrell, 1998).

Therefore, this study selected the demographic characteristics of the control samples as the control variables, including the gender, age, registration duration, historical behavior characteristics (including purchasing power level, credit score) and activity (naughty value) of the samples. The following table is descriptive statistics of basic characteristics of sample users:

Table 3.3 Descriptive statistics of sample characteristic variables

<b>variable</b>	<b>Mean value</b>	<b>Standard deviation</b>	<b>Min</b>	<b>Max</b>
gender	1.11	0.32	1	2
Purchasing power class	3.69	1.67	0	7
Buyer's credit score	471	717	0	11112
Naughty value	860	436	432	4012
Duration of registration (year)	5.18	3.00	0	15
age	3.47	1.61	1	8

Among them, the meaning of characteristic age 1-8 is :1-18 years old, 19-25 years old, 26-30 years old, 31-35 years old, 36-40 years old, 41-50 years old, 51-60 years old, and over 60 years old.

Since gender, purchasing power level and age in the original data are classified data, dummy variables will be introduced into the model in the following research.

## (2) Consumption records of sample users

The problem of this study is the influence of viewing content on the consumption of the same category and the spillover effect of cross-category consumption. Therefore, the dependent variable selected is the consumption amount of women's and beauty products of the sample users during the sampling time, and then the natural logarithm of consumption amount will be adopted in the measurement model for the convenience of interpretation.

Table 3.4 Descriptive statistical analysis of sample consumption amount

<b>variable</b>	<b>Mean value</b>	<b>Standard deviation</b>	<b>Min</b>	<b>Max</b>
Amount of consumption of female products	245.4	1051	0	111379
Consumption amount of beauty products	25.87	287.2	0	28747



### (3) Record of content watched by sample users

The purpose of this paper is to compare the difference in the influence of different forms of content on consumer behavior. Based on the selection of women's wear and beauty makeup, this paper will study the influence of watching different forms of women's wear content on the purchase of women's wear products and the influence on beauty makeup products (spillover effect). The content is divided into live broadcast of women's wear, short video of women's wear, text and text of women's wear, live broadcast of non-women's wear, short video of non-women's wear and text and text of non-women's wear. This study counted whether consumers watched women's clothing content and the viewing times of each type of content during the sampling time.

In this study, "whether to watch a certain form of content" is taken as the explanatory variable of attention, and "the number of times to watch other forms of content" is taken as the control variable. The following table is descriptive statistics of viewing records of sample content.

Table 3.5 Descriptive statistics of viewing records of sample contents

<b>variable</b>	<b>Mean value</b>	<b>Standard deviation</b>	<b>Min</b>	<b>Max</b>
Whether the user watches live broadcast of women's wear	0.138	0.345	0	1
Whether the user watches short videos of women's wear	0.059	0.236	0	1
Whether the user watches the text and text of women's wear	0.431	0.495	0	1
Number of live broadcasts of women's wear	3.162	21.48	0	87
Watch short videos of women's wear	0.115	0.688	0	35
The number of times to watch the women's clothing category	5.850	19.54	0	62
Number of non-women's wear live streams watched	4.027	31.18	0	91
The number of non-women's short videos watched	0.438	2.880	0	25
Times of viewing non-women's clothing graphics	7.969	23.71	0	70

(4) Users' recent preferences

According to relevant literature, the consumption frequency of different categories of products can help explain the process of reducing product uncertainty (Kim et al., 2015; Goodhardt et al., 1984). Therefore, a control variable representing consumer preference is added in this study. This feature is automatically calculated by the background of Taobao and is the preference weight of consumers for first-level commodities.

The above are the relevant variables involved in this study, including the dependent variable "natural logarithm of consumption amount of women's clothing (beauty) products", the independent variable "whether to watch live/short videos/pictures of women's clothing, and the control variable. The following table is a description of the model variables.

Table 3.6 Description of model variables

<b>Variable name</b>	<b>Variable symbol</b>	<b>Variable specification</b>
Time number	t	The t time period used in the study
Sample number	i	Sample i of the consumer
gender	Gender_dumnyi	Virtual gender reference of sample user i
Purchasing power class	Purchass_level_dumnyi	Purchasing power level of sample user i
Buyer's credit score	Buyer_sumi	Buyer's credit score for sample user i
Naughty value	Tq_scorei	The active score of sample user i
Duration of registration (year)	Reg_yeari	Registration time of sample user i
age	Age_dumnyi	The virtual age variable of sample user i
The natural logarithm of the consumption amount of women's clothing	Ln_cloth_pay_amt(it)	The natural logarithm of the amount of goods purchased by sample user i in the women's clothing category within t
The natural logarithm of the amount of money spent on beauty products	Ln_mk_pay_amt(it)	The natural logarithm of the amount of beauty products purchased by sample user i in t
Whether to watch live/short video/text of women's wear	Has_read_cloth_X(it)	Whether sample user i watches live/short video/text/text of women's clothing in time t, 1 means watch, 0 means not watch
Whether to watch non-women's live/short video/text/text	Has_read_nocloth_X(it)	Whether sample user i watches non-women's clothing live/short video/text/text within time t, 1 means watch, 0 means not watch

Times of watching live/short videos/pictures of women's wear	Read_cloth_cn(it)	Whether sample user i watched live/short videos/texts of women's clothing in time t
Times of watching live/short videos/pictures of non-women's wear category	Read__nocloth_cn(it)	Whether sample user i watched live/short videos/texts of non-women's clothing in time t
Category preference characteristics	L1cat_prefer_Y(it)	Sample user i's preference weight for primary category Y in time t


**UNIRAZAK**  
 UNIVERSITI TUN ABDUL RAZAK  
 Copying, modifying, or reprinting, is not permitted.

## CHAPTER 4 RESULT DESCRIPTION AND DISCUSSION

### 4.1 To confirm the model

In economics, it is usually expected to evaluate the Effect after the implementation of a project or policy. Such research is often called Program evaluation or Treatment Effect. The samples participating in the project constitute a Treatment Group, while the samples not participating in the project constitute a Comparison Group or Control Group (Chen Qiang, 2014).

Matching method is a common method to estimate the causal processing effect, which is suitable for evaluating the processing effect in non-randomized experiments, that is, it is necessary to generate control group samples and treatment group samples. This approach is often used in studies evaluating labor market policies (Heckman et al., 1997; Dehajia & Wahba, 1999), and has been widely used in empirical studies in other fields. For example, Perkin et al. (2000) discuss the use of matching methods in pharmacoepidemiology; Hitt and Frei (2000) analyzed the impact of online banking on consumer income; Bryson (2002) studied the influence of union membership on employee salary. Many studies in the field of marketing have adopted matching methods to verify the impact of content marketing on product sales or consumer behavior (Wan & Ren, 2017; Kumar & Tan, 2015; Goh et al., 2013).

The research content of this paper is to compare the influence of consumers viewing different forms of specific category content on their consumption behavior of the same category content and the influence of other related categories. In essence, it is also a study on the effect of Treatment. "Treatment" refers to "viewing different forms of content". The main difficulty is to solve the endogenous problem of sample users' viewing behavior. For example, consumers with higher incomes may be more willing to buy, so they need to watch more content to get information to support their purchase decisions. Viewing content is a kind of self-selection behavior, so the estimation of its influence has the selection problem. Therefore,  $has\_read\_cloth\_X$  (X represents the form of content) needs to solve the selection problem of whether there is a causal relationship between the content viewing behavior and the consumption amount.

In the data set of this study, the basic characteristics of sample users and their historical preferences can be observed. The basic characteristics of consumers include age, gender, purchasing power level and activity, which can effectively control the time-independent heterogeneity of consumers. In addition, through the analysis and calculation of consumers' historical behavior, consumers' preference characteristics for first-level products in different time periods are obtained, which reflects the characteristics of consumers changing over time. In addition, when studying the impact of each form of content on consumption behavior, the model will use the number of times the sample views other types of content to reflect some other unobservable variables.

Therefore, this paper argues that, based on the above known features, the content viewing behavior of the sample can be predicted fairly accurately, thus satisfying the Ignorability Assumption, namely, given the above observable variables, The amount of money consumers spend in time  $t$  is independent of whether they watch a certain type of content (Heckman & Robb1985; Holland 1986). Based on the ignorability assumption, self-selection bias can be solved by propensity score matching.

Therefore, the empirical model of this study consists of two stages. First, the matched samples were obtained through propensity score matching -- the control group was the samples that did not watch a certain type of content during  $t$  period, and the experimental group was the samples that watched a certain type of content during  $t$  period. Then, through the multiple linear regression model, the influence of `has_read_cloth_X` ( $X$  represents different forms of content) on the consumption amount of women's clothing and beauty products was estimated.

#### **4.2 The propensity score matches**

First, this study will confirm whether the available data can satisfy the ignorability assumption. Uchihashi and Kanemura (2016) conducted experiments on multiple data sets and found that The accuracy of Gradient BoostingDecision Tree (GDBT) matching in propensity score is higher than that of traditional Logistic Regression, especially when faced with relatively complex data. Therefore, gradient lifting tree will be adopted in this study to calculate propensity score.

We divided the sample into 80% training set and 20% test set for training and testing. In machine learning, AUC (Area Under Curve) is used to measure the performance of "binary problem" machine learning algorithm. The results show that the AUC of whether to watch live broadcast of women's wear, short video of women's wear and text of women's wear in the test set are 0.92, 0.91 and 0.89 respectively, which proves that the

assumption of negligible can be satisfied by using the current data and gradient lift tree classifier.

Next, we performed one-to-one nearest neighbor matching between the treatment group -- the sample that viewed women's X content -- and the control group -- the sample that did not view women's X content, according to the propensity score obtained from the gradient lifting tree (Rosenbaum & Rubin 1985).

It should be noted that in the previous chapter, it has been explained that the aggregate data of 51 time periods was obtained by aggregating the data for 7 days. Therefore, dynamic matching will be carried out here -- that is, once for each time period, so as to more accurately estimate the impact of viewing content on consumption.

After viewing different forms of content, the processing group and control group of "whether to watch live broadcast of women's wear", "whether to watch short videos of women's wear" and "whether to watch pictures and texts of women's wear" were obtained respectively. The kernel density function graph after matching shows that the propensity score distribution of the samples of the treatment group and the control group is similar, which proves the rationality of the matching result.

After dynamic matching, the following models are estimated using least squares regression.

Firstly, the measurement model of question 1 is studied. After matching the samples, the influence of watching different forms of women's wear content on the consumption amount of women's wear products is estimated.

$$\begin{aligned} & \ln\_cloth\_pay\_amt_{it} \\ = & \alpha + \text{Bohas\_read\_cloth\_X}_{it} + \text{Bread\_cloth\_Y\_cnt}_{it} + \text{Bread\_cloth\_Z\_cnt}_{it} + \\ & \text{Bread\_nocloth\_live\_cnt}_{it} + \text{Bread\_nocloth\_video\_cnt}_{it} \\ & + \text{Bread\_nocloth\_other\_type\_cnt}_{it} + \text{Bgender\_dummy}_{it} + \\ & \beta_{zage\_dummy}_{it} + \text{Bepurchase\_level\_dummy}_{it} + \text{Byreg\_year}_{it} + \text{Bbuyer\_sum}_{it} + \text{B.tq\_score}_{it} \\ & + \text{Bzperiod\_dummy}_{it} + \text{B311cat\_prefer}_{it} \end{aligned}$$

Where,  $\ln\_cloth\_pay\_amt_{it}$  represents the amount of women's products purchased by consumer  $i$  during the period  $t$ , and  $\text{has\_read\_cloth\_X}_{it}$  represents whether to watch a certain form of women's content (live broadcast, short video, text and text) during the period  $t$ , which is the explanatory variable concerned in this study. In the control variables,  $\text{read\_cloth\_Y\_cnt}_{it}$  and  $\text{read\_cloth\_other\_Z\_cnt}_{it}$  respectively represent the viewing times of other two forms of women's clothing content by consumer  $i$  during the time

period  $t$  (for example, when  $X$  is live,  $Y$  and  $Z$  represent short videos and graphics, respectively).

Then, the measurement model of question 2 is studied. After matching the samples, the influence of watching different forms of women's wear content on the consumption amount of beauty products is estimated.

$\ln\_mk\_pay\_amt_{it}$

$=\alpha + \beta_{1}has\_read\_cloth\_X_{it} + \beta_{2}read\_cloth\_Y\_cnt_{it} + \beta_{3}read\_cloth\_Z\_cnt_{it} + \beta_{4}read\_nocloth\_live\_cnt_{it} + \beta_{5}read\_nocloth\_video\_cnt_{it}$

There are:  $\beta_{6}read\_nocloth\_other\_type\_cnt_{it} + \beta_{7}b\_ender\_dummy_{it} + \beta_{8}age\_dummy_{it} + \beta_{9}purchase\_level\_dummy_{it} + \beta_{10}reg\_year_{it} + \beta_{11}buyer\_sum_{it} + \beta_{12}tq\_score_{it} + \beta_{13}period\_dummy_{it} + \beta_{14}cat\_pref_{it}$

Where,  $\ln\_mk\_pay\_amt$  represents the amount of beauty products purchased by consumer  $i$  during  $t$  period, and  $has\_read\_cloth\_X_{it}$  represents whether to watch a certain form of women's content (live broadcast, short video, text and text) during  $t$  period, which is the explanatory variable of this study. In the control variable,  $read\_cloth\_Y\_cnt_{it}$  and  $read\_cloth\_other\_Z\_cnt_{it}$ , where  $t$  respectively represents the viewing times of other two forms of women's clothing content by consumer  $i$  during the time period  $t$  (for example, when  $X$  is live broadcast,  $Y$  and  $Z$  respectively represent short videos and graphics). To avoid heteroscedasticity, we will use least square regression + robust standard error.

### 4.3 The results of the study in question

This section presents empirical results on the direct impact of different forms of content in e-commerce platforms.

(1) The impact of watching live broadcast of women's wear on the consumption amount of women's wear products

Table 4.1 Regression results of the impact of watching live broadcast of women's wear on the consumption of women's wear products

<b>variable</b>	<b>coefficient</b>	<b>standard deviation</b>	<b>t</b>	<b>P&gt; t </b>
Whether the user watches live broadcast of women's wear	0.517	0.027	19.11	0
Whether the user watches short videos of women's wear	0.145	0.017	8.42	0
Whether the user watches the text and text of women's wear	0.009	0.005	17.35	0
Number of live broadcasts of women's wear	0.002	0.002	9.87	0
Watch short videos of women's wear	-0.003	0.175	-2	0.046
The number of times to watch the women's clothing category	-0.03	0.053	-6.87	0
Number of non-women's wear live streams watched	-0.027	0.069	-8.2	0
The number of non-women's short videos watched	0	3.97	4.91	0
Times of viewing non-women's clothing graphics	0.969	5.48	18.18	0

The results show that the coefficient of "whether to watch live broadcast of women's wear" is 0.517, which is significant at the 1% level. This indicates that watching live broadcast of women's wear has a significant positive impact on consumers' purchase of women's wear products, and watching live broadcast of women's wear will increase the consumption amount of women's wear products by 51.7%.

(2) The influence of watching short videos of women's wear on the consumption amount of women's wear products

Table 4.2 Regression results of the impact of watching short videos of women's wear on the consumption of women's wear products

<b>variable</b>	<b>coefficient</b>	<b>standard deviation</b>	<b>t</b>	<b>P&gt; t </b>
Whether the user watches live broadcast of women's wear	0.145	0.042	3.46	0.001
Whether the user watches short videos of women's wear	0.008	0.095	8.92	0
Whether the user watches the text and text of women's wear	0.011	0.079	14.41	0
Number of live broadcasts of women's wear	-0.001	0.007	-2.47	0.014



Watch short videos of women's wear	-0.025	0.425	-5.58	0
The number of times to watch the women's clothing category	-0.001	0.069	-1.71	0.088
Number of non-women's wear live streams watched	0.013	0.125	1.32	0.189
The number of non-women's short videos watched	8.59	4.79	1.79	0.073
Times of viewing non-women's clothing graphics	0.001	8.02	15.21	0

The results showed that the coefficient of "whether to watch short videos of women's wear" was 0.145, and was significant at the 1% level. This indicates that watching short videos of women's wear has a significant positive impact on consumers' purchase of women's wear products, and watching short videos of women's wear will increase the consumption amount of women's wear products by 14.5%.

(3) The influence of watching pictures and texts of women's wear on the consumption amount of women's wear products

Table 4.3 Regression results of the influence of viewing images of women's wear on the consumption of women's wear products

variable	coefficient	standard deviation	t	P> t
Whether the user watches live broadcast of women's wear	0.721	0.145	49.68	0
Whether the user watches short videos of women's wear	0.120	0.005	21.7	0
Whether the user watches the text and text of women's wear	0.125	0.097	12.9	0
Number of live broadcasts of women's wear	0.004	0.051	-9.28	0
Watch short videos of women's wear	-0.026	0.193	-2.45	0.014
The number of times to watch the women's clothing category	-0.106	0.033	-3.22	0.001
Number of non-women's wear live streams watched	-0.312	0.035	-8.86	0
The number of non-women's short videos watched	0.013	1.97	6.57	0
Times of viewing non-women's clothing graphics	0.109	0.003	36.52	0

The results show that the coefficient of "whether to watch the pictures of women's clothing" is 0.721, and is significant at 1% level. This indicates that viewing women's clothing graphics has a significant positive impact on consumers' purchase of women's clothing products, and viewing women's clothing graphics will increase the consumption amount of women's clothing products by 72.1%.

In summary, under the same model setting, the results show that whether to watch women's videos has the greatest significant influence on consumers' purchase of women's products, followed by women's live streaming and short videos.

#### **4.4 Analysis and discussion of the results**

This section answers the two research questions of this paper separately, discusses whether the research hypotheses of the two questions hold, and cites relevant studies to analyze the possible reasons for this result.

##### **4.4.1 Research Question 1: The direct impact of different forms of content marketing in e-commerce platforms**

The direct influence of different forms of content, that is, whether consumers watching different forms of a certain category of content in e-commerce platforms has a significant influence on their consumption of products of the same category. In this paper, whether consumers watch different forms of content as the main variable, get the control group and processing group through the tendency score matching method, so as to estimate the processing effect of "watch different forms of content", and finally through the linear regression model to estimate the influence of the category of products, namely the users and the form of the content consumption amount difference (consumption amount take natural logarithmic). Based on the data of consumers' personal consumption behavior, the impact of watching a certain form of content on the consumption amount of products of the same category can be directly calculated. This study only takes the women's clothing market in the content e-commerce Taobao platform as an example. Researchers can use the research methods used in this paper to evaluate the impact of different forms of content on consumer consumption behavior in other market segments.

The results show that different forms of content have different effects on the consumption behavior of consumer products in the same category. In this paper, the content of Taobao content platform is counted into three forms: live broadcast, short video and text. Three forms of content watched by consumers have a significant positive impact on the consumption amount of their products in the same category. Among them, watch the influence of the graphic form content biggest —— watch women's class graphic consumers will not watch than consumers in women's products consumption 72%, live-watch women's class live consumers will watch consumers than in women's products consumption 52%, the influence of the short video smaller —— watch women's graphic consumers will watch than consumers in women's products consumption 15%.

#### **4.4.2 Research Question 2: The spillover effect of different forms of content marketing in e-commerce platforms**

The second research question also takes whether to watch a certain category of different forms as the main concern variable, and the dependent variable is the consumption amount of other related products (take the natural logarithm). In the same method as in research question 1, the processing effect of "watching different forms of content" on the consumption amount of related categories is estimated through the propensity score matching method. In this paper, the consumption amount of beauty products is selected as the research object of spillover effect, and researchers can evaluate the spillover effect of other market segments according to the research methods proposed in this paper.

The results show that different forms of content have differences on consumers' consumption behavior of products in other related categories. The results of the model show that consumers watching the women live broadcast has a significant positive impact on the consumption amount of beauty products; the consumers watching women live broadcast will spend 4.39% more on beauty products; the consumers watching short videos of women's products have no significant influence on the consumption amount of beauty products; consumers watching women pictures have a significant negative impact on the consumption amount of beauty products, and the consumers watching women live broadcast will consume 7.57% less than the consumers not watching beauty products.

#### 4.5 Results discussion

According to the above research results, combined with relevant literature and theories, make possible explanations. Firstly, literature in the field of content marketing has proved that content marketing has an impact on consumer behavior or product sales (Lee et al., 2018; Wan and Ren, 2017; Kumar et al., 2016; Goh et al., 2013;) . This study further studies the impact of different forms of content marketing on consumer behavior.

The results of question 1 show that the three forms of content marketing have a positive impact on the consumption of the same category of products, among which the graphic content has the largest positive impact on the consumption of specific categories, followed by live broadcast, short video has the least impact. Different forms of content, in essence, are different media, through the review of media richness related literature, to provide some theoretical support for the results of this study. There are four criteria for MediaRichness, of timely feedback, transmission of multiple leads, personalization of message, freedom of language style (Daft & Lengel, 1986). When content information is uncertain and ambiguous, a richer medium may be needed. However, richer and more phonetic media are not necessarily better than poor written media in expressing ambiguous information (El-Shinnawy & Markus, 1998; Markus, 1994; Grudin, 1988).

When the consumer is presented with richer content, this content may motivate the consumer to process information about other options; When media richness is low, consumers will deal with fewer choices (Maity, 2018). Obviously, in terms of media richness, it is live broadcast, short video, and graphic. However, graphics and text make consumers face less information processing, and consumers are more focused on the current product rather than other competitive products. Therefore, it has the greatest impact on the consumption amount of products of the same category. Live streaming and short video are both video media. Live streaming has a higher richness and can reduce the uncertainty and ambiguity of information, so the impact of live streaming is greater than that of short video.

According to relevant theories of information flow control, when it is uncertain whether the content provided can meet the needs of consumers, the content should give consumers the ability to control the information (Alba et al., 1987; Bettman & J.,1975). Ariely (2000) demonstrated through experiments that consumers attach higher value and practicability to information when controlling the content and order of online information flow. It is found that when users are in the condition of highly controlling information flow (they can freely choose the product information to watch and adjust the viewing time), users perform better in acquiring, integrating and remembering information. Highly

interactive information systems can help consumers integrate information and express utility more precisely. The controllable information flow can better adapt to the heterogeneity among viewers and satisfy the different needs of viewers for information.

The content in the form of text and text has higher controllability, this controllability is reflected in - (1) the user can choose the text and text information they need at will. Because the content creation in the form of text and text is relatively simple and does not require additional technical equipment, the content in this form is the most in the content platform at present; (2) Can be repeated browsing, consumers can arbitrarily slide the screen when watching graphic content, independent control of viewing time; (3) Consumers can copy text and zoom pictures when watching graphic content. To sum up, graphic content has the highest controllability and can help users integrate and evaluate information, thus affecting users' purchase decisions.

From the perspective of product experience, different forms of content bring different product experience to consumers. Steuer (1992) defined vividness and interactivity as dimensions for evaluating product experience in social media. Vividness refers to the media environment where content provides rich perception; Interactivity measures the extent to which a user can change and influence the form of content or media environment. Interactivity and richness can improve consumers' product experience and promote the dissemination of product information (Jiang & Benbasat, 2004; Dahan & Srinivasan, 2000), has a significant impact on consumer trust building (Lee, 2005). Although both live broadcast and short video are video content, they can provide consumers with more vivid virtual product experience (Klein, 2003), and they have different characteristics. Live broadcasting has stronger interactivity and richness, emphasizing real-time interaction and presence (Li et al., 2018; Todd and Melancon, 2018). When broadcasting live, anchors can see the audience's real-time comments, so as to adjust the live content. This interaction gives the audience control over the content information to a certain extent. However, due to the heterogeneity of audience demands, it is impossible for the live broadcast to meet all consumers' demands for information. In terms of richness, due to the long duration of live broadcast, which usually lasts for several hours, it can display product information in more detail and provide more support for consumers' purchase decisions. However, due to the long duration, few users will play back the operation.

From this perspective, the controllability of live broadcast is not as high as that of graphic content. Due to the limited length of short videos (according to statistics, the average length of short videos on Taobao content platform is 37 seconds), they are weaker than graphic videos and live broadcasts in terms of interactivity, richness and controllability. Therefore, short videos have the least positive impact on consumers' consumption behaviors of products of the same category.

According to related literature on spillover effect, there are two kinds of spillover effect, namely complementary effect and expenditure effect. The former is positive and the latter is negative (Niraj et al., 2008). In the field of e-commerce, relevant studies have verified the positive spillover effect of picture display on books (Oestreicherhe & Sundararajan,2012), and the positive spillover effect of video display of fashion on accessories (Kumar & Tan,2015).

The results of the second research question show that the live broadcast of a certain category of products has a significant positive impact on the consumption amount of other related products. In terms of vividness and interactivity defined by Steuer (1992) above, the audience can interact with the anchor in the process of watching the live broadcast, and the vividness of the live broadcast is higher, and the audience can accept various information. At the same time, richness and interactivity are important factors to build consumer trust (Lu et al., 2014). Therefore, consumers may have consumer demand for livestreaming products in the process of watching livestreaming. Short video, however, has no spillover effect because of its weak interactivity and richness. Due to weak interactivity, graphic content often only shows specific details of specific categories, so that consumers pay more attention to the products with current contents and lose their attention to other categories of products. Therefore, it may have a negative impact on the consumption of other related categories of products.

## CHAPTER 5 CONCLUSION AND OUTLOOK

### 5.1 Conclusion

Major e-commerce platforms have made great efforts to develop content ecology, providing a platform for merchants to carry out content marketing directly on the platform, and attracting consumers to watch content to support purchase decisions. The content marketing of e-commerce platform has become the focus of the industry. Based on the research of relevant literature, this paper combined with the viewing content records and product consumption records of consumers in the women's wear and beauty market segment on Taobao content platform, and proposed an estimation method to compare the influence of different forms of content on consumers' consumption of the same category and other related categories.

Based on the data at the consumer level, this paper innovatively uses the propensity score matching method to obtain the experimental group and the control group of "viewing different forms of content", and estimates the "processing effect" of viewing different forms of content on the consumption amount of consumers of the same category and other related categories. The results showed that watching live broadcast, short video and text of a certain category of products had a significant positive impact on the consumption amount of the same category of products, among which text and text had the greatest impact, followed by live broadcast and short video. The spillover effect of watching live broadcast, short video and text of a certain product on the consumption amount of other related products is quite different. Live broadcast has a significant positive spillover effect, short video has no significant spillover effect, and text and text have a significant negative spillover effect.

### 5.2 Theoretical contributions to the study

The theoretical contributions of this study are included in that:

(1) Most existing literatures start from the data at the merchant level to study the impact of content marketing on product sales

(Wan & Ren, 2017; Lee, 2018; Kumar & Tan, 2015; Goh et al., 2013). Based on data from the consumer level, this study compares the impact of different forms of content marketing on consumer consumption behavior, and explains the differences in results from the perspective of information flow control and media richness theory.

(2) Currently, the cross-category spillover effect in the academic circle usually only includes a single marketing strategy or within

Open form (Kumar & Tan, 2015; Niraj et al., 2008). This study compares the direct impact and spillover effect of different forms of content marketing on consumer consumption behavior, and explains the differences in results through media richness theory.

### **5.3 Practical significance of the research**

The practical significance of this study lies in that the research results have certain reference value for e-commerce platforms and merchants' marketing strategies. In terms of the direct impact of content marketing, although the interactive content of text and text is weak, it still has a high promotion effect on consumers' consumption behavior. Although the content in the form of short video can display the product more intuitively from various angles, the content richness and flexibility are limited by the time, so the content richness and interactivity can be improved. Among the three forms, live broadcasting has the strongest interactivity, but due to its real-time performance and long time, consumers lack the controllability of information flow. Based on the results of the model, the following suggestions are put forward for the e-commerce platform and the merchants in the platform.

Suggestions for content marketing on e-commerce platforms:

(1) It can increase the interactivity of text, text and short video. For example, the "question" in Taobao platform is

It is a form with strong interactivity. How to enhance the interactivity of users in watching pictures, texts and short videos is worth thinking about.

(2) The interaction of live broadcast is strong, but because of the long time, it is often difficult to play back, so it can be mentioned

The controllability of high users for live broadcasting, for example, after live broadcasting, the main content is extracted and converted into short video or text for users to browse again.

(3) Encourage marketing cooperation between merchants of different categories. The results show that content marketing exists



Category spillover effect, so different categories of product merchants can achieve win-win through cooperation. Suggestions for merchants in e-commerce platform:

(1) Marketers should not just pursue richer forms of content, but choose the right ones

Marketing strategy (Maity et al., 2018). For the marketing of experience-oriented products (such as women's wear, beauty makeup, etc.), it is best to use graphic form to display appearance and collocation, use live broadcast to show specific usage methods, short video can be used as an auxiliary form.

(2) Merchants with multiple product categories can carry out main product categories and related product categories through live streaming

Product joint marketing.

(3) Businesses of different categories can cooperate, such as women's wear and beauty makeup

Marketing cooperation to achieve a win-win situation.

#### **5.4 Research deficiency and prospects**

Although this paper compares the influence of different forms of content in e-commerce platform on consumer consumption behavior through quantitative analysis, and obtains significant results, it still has the following deficiencies:

(1) There are many categories in the e-commerce platform. This paper only focuses on the women's wear market and Taobao platform

In the beauty market, due to the lack of data on other market segments, this paper cannot verify the universality of the research results in other fields.

(2) The data used in this paper is from June 3, 2018 to July 29, 2018.

The time interval is short, and the results cannot be verified on a longer time span due to the difficulty of obtaining data. The follow-up research can refer to the method in this paper for modeling analysis in a longer time interval.

(3) From the perspective of consumers, this paper tries to obtain enough sample features, but the model is fitting

The goodness of agreement is not high, although the explanatory variables of interest are significant, further studies need to obtain more control variables for further analysis.

(4) From the perspective of econometrics, this paper analyzes the impact of watching different forms of content on consumers

The difference of the influence of fee behavior, and according to the existing theories to make certain speculation on the reasons, the subsequent research can be analyzed by machine learning and other methods of different forms of content text, image, and so on, to further compare the difference between them.



## APPENDICES

### Taobao user survey questionnaire

**Hello, everyone! Thank you very much for taking time out of your busy schedule to fill in this questionnaire and cooperate with us to complete this survey! This is a research questionnaire about the user behavior detection of Taobao APP. You can choose whether to participate in the survey voluntarily. The results of this survey are only used for academic research, and the researchers will not disclose the information. We attach great importance to each user's valuable suggestions and look forward to your participation.**

\* I, multiple choice

1. Your gender:

- Male
- Female

\*2. Your age:

- Under 18 years old
- 18~25
- 26~30
- 31~40
- 41~50
- 51~60

3. Do you shop online?

- Yes
- No

\*4. How many times do you shop online in a month on average

One to three times

Three to five times

- 5 to 9 times
- More than 10 times

\*5. How much do you spend on Taobao each month?

Less than 100

100-500

500-1000

More than 1,000

\*6 How long have you been registered on Taobao?

- 1 year or less
- 1 to 2 years(including 2 years)
- 2 to 3 years(including 3 years)
- 3 to 5 years(including 5 years)
- 5 to 8 years(including 8 years)
- 8 to 10 years(including 10 years)

\*7 Will you browse women's clothing?

- Yes
- No

\*8 Will you browse the goods of beauty clothing?

- Yes
- No

\*9 Will you buy women's clothing?

- Yes
- No

\*10 Will you buy beauty products?

- Yes
- No

\*11 When did you browse the products/short videos/texts/texts of women's wear and

beauty makeup?

- November 30, 2022 -- December 10, 2022
- December 11, 2022 - December 20, 2022
- December 21, 2022 - December 30, 2022

\* II. Fill in the blanks

\* From November 30, 2022 to December 10, 2022, how many times have you viewed live/short videos/texts of women's wear and beauty makeup?

\* What times have you browse live / short videos of women's wear and beauty makeup on December 11,2022 to December 20,2022?

\* What is the number of times have you viewed live broadcasts / short videos / pictures of women's wear and beauty wear from December 21,2022 to December 30,2022?

\* What amount did you spend on the goods during this time period?

\* Is your Taobao credit rating equal to?

\* Your TQ value is:?

UNIRAZAK  
UNIVERSITI TUN ABDUL RAZAK  
Copying, modifying, or reprinting, is not permitted.

## REFERENCES

- [1] Aaker, D. A. . (2006). Brand portfolio strategy. *Strategic Direction*, 22(10), 468-468.DOI□10.1108/sd.2006.05622jae.001
- [2] Alba, J. W. , & Wesley, H. J. . (1987). Dimensions of consumer expertise. *Journal of Consumer Research*(4), 411-454.DOI□10.1086/209080
- [3] Amazon Influencers . [http://affiliate-program .amazon.com/influencers](http://affiliate-program.amazon.com/influencers).and Functional Control of Products on Perceived Diagnosticity and Flow inElectronic Shopping.*Journal of Management Information Systems*,21(3),111-147.
- [4] Ariely, D. . (1999). Controlling the information flow : on the role of interactivity in consumers' decision making and preferences /.
- [5] Bawa, K. , & Shoemaker, R. . (2004). The effects of free sample promotions on incremental brand sales. *Marketing Science*, 23(3), 345-363.DOI□10.1287/mksc.1030.0052
- [6] Beatty, S. E. , & Ferrell, M. E. . (1998). Impulse buying: modeling its precursors. *Journal of Retailing*, 74(2), 169-191.DOI□10.1016/S0022-4359(99)80092-X
- [7] Beatty, S. E., & Smith, S. M. . (1987). External search effort: an investigation across several product categories. *Journal of Consumer Research*(1), 83-95.DOI□10.1086/209095
- [8] behavior: An empirical analysis. *Management Science*,2015,61(10),2449-2467.
- [9] Chae, Inyoung, Stephen, Andrew, T. , Bart, & Yakov, et al. (2017). Spillover effects in seeded word-of-mouth marketing campaigns. *Marketing Science*..DOI□10.1287/mksc.2016.1001
- [10] Chun, H. , Park, C. W. , Eisingerich, A. B. , & Macinnis, D. J. . (2015). Strategic benefits of low fit brand extensions: when and why?. *Journal of Consumer Psychology*, 577-595..DOI:10.1016/j.jcps.2014.12.003
- [11] Classes.Advances in Consumer Research,1979,6(1),174-179.Effectiveness.[J]. *Journal of Marketing*, 1961,25(6),59-62.
- [12] Environments. *Journal of Consumer Research*,1991,17(4),463-476.[49] Kim, Y.,& Krishnan, R. On product-level uncertainty and online purchase
- [13] Evidence from a mobile social media platform.*Journal of Electronic CommerceResearch*, 18(4),288-302.
- [14] Gan C., Wang w., Cheung C., 2017, "The influence of perceived value on purchase intentionin social commerce context", *Internet Research*, Vol .27(4), PP772-785.
- [15] Gang R., Taeho H.,2018,"Examining the relationship between specific

negative emotions and the perceived helpfulness of online reviews", *Information Processing & Management*, Vol.56(4), PP1425-1438.

[16] Ghose A., Ipeirotis Panos., 2011, "Estimating the Helpfulness and Economic Impact of Product Reviews: Mining Text and Reviewer Characteristics", *IEEE Trans. Knowl. Data Eng.* □ Vol.23, PP1498-1512.

[17] Hlee S., Lee J., Yang S B., Koo C., 2018, "The moderating effect of restaurant type on hedonic versus utilitarian review evaluations", *International Journal of Hospitality Management* □ Vol.77, PP195-206.

[18] Hong H., Xu D., Wang G A., Fan W., 2017, "Understanding the determinants of online review helpfulness: A meta-analytic investigation", *Decision Support Systems*, Vol.102, PP1-11.

[19] Hong W., Yu Z., Wu L. □ Pu X., 2020 □ "Influencing factors of the persuasiveness of online reviews considering persuasion methods", *Electronic Commerce Research and Applications*, Vol.39, 100912.

[20] Horng S.M., Wu C.L., 2019, "How behaviors on social network sites and online social capital influence social commerce intentions" , *Information & Management*, Vol.57(2), PP311-323.

[21] Information Systems, 2010, 11(1), 34-59. Involvement and Purchase Intention. [J]. *Journal of the Association for*

[22] Jiang, Z., & Benbasat, I. (2004). Virtual Product Experience: Effects of Visual Journal of Interactive Marketing, 2003, 17(1), 41-55.

[23] Kang J W., Namkung Y., 2019, "The information quality and source credibility matter in customers' evaluation toward food 020 commerce", *International Journal of Hospitality Management*, Vol.78, PP189-198.

[24] Kang K., Lu J., Guo L., Li W., 2020, "The dynamic effect of interactivity on customer engagement behavior through tie strength: Evidence from live streaming commerce platforms", *International Journal of Information Management*, Vol.56, 102251.

[25] Lee S., Lee S., Baek H., 2020 □ "Does the dispersion of online review ratings affect review helpfulness?", *Computers in Human Behavior*; Vol.117, 106670.

[26] Lee Y.K., Kim S. Y, Chung N., Ahn K., Lee J. W., 2016, "When Social Media Met Commerce: A Model of Perceived Customer Value in Group-Buying", *Journal of Services Marketing*, Vol .30(4), PP-

[27] Lin J., Guo J., Turel O., Liu, S., 2019, "Purchasing organic food with social commerce: An integrated food-technology consumption values perspective", *International Journal of Information Management*, Vol.51, 102033.

[28] Malik M, Hussain A.. 2018, "An analysis of review content and reviewer variables that contribute to review helpfulness", *Information Processing & Management*, Vol.54(1), PP88-104.

- [29] Mamonov S., Benbunan-Fich R., 2017, "Exploring factors affecting social e-commerce service adoption: The case of Facebook Gifts" *International Journal of Information Management*, Vol.37(6), PP590-600. marketers' perceptions of best practice. *Journal of Research in Interactive Marketing*, 2014, 8(4), 269-293.
- [30] Mudambi S. M., Schuff D., 2010 "What Makes a Helpful Online Review? A Study of Customer Reviews on Amazon.com", *MIS Quarterly*, Vol.34(1), PP185-200.
- [31] Nelson P., 1970 "Information and Consumer Behavior" , *Journal of Political Economy*, Vol.78(2), PP311-329.
- [32] Ostman J., 2012, "Information, expression, participation: How involvement in user-generated content relates to democratic engagement among young people" , *New Media & Society* Vol.14(6), PP1004-1021.
- [33] Pan Y., Zhang J Q., 2011 "Born Unequal: A Study of the Helpfulness of User-Generated Product Reviews", *Journal of Retailing*, Vol.87(4), PP598-612.
- [34] Peng L., Zhang W., Wang X., Liang S., 2019 "Moderating effects of time pressure on the relationship between perceived value and purchase intention in social e-commerce sales promotion: considering the impact of product involvement", *Information & Management*, Vol.56(2), PP317-328.
- [35] Pe-Than E.P.P., Goh H. L., Lee C. S., 2014, "Making work fun: investigating antecedents of perceived enjoyment in human computation games for information sharing", *Computers in Human Behavior*, Vol.39(10), PP88-99.
- [36] Petty R. E., Cacioppo J. T., 1988, "Communication and Persuasion: Central and peripheral routes to Persuasion", *The Public Opinion Quarterly*, Vol.52(2), PP262-265.
- [37] Schnotz W., Ktirschner C., 2007, "A Reconsideration of Cognitive Load Theory", *Educational Psychology Review*, Vol.19(4), PP469-508.
- [38] Shahbaznezhad H., Dolan R., Rashidirad M., 2020, "The Role of Social Media Content Format and Platform in Users' Engagement Behavior" , *Journal of Interactive Marketing*, Vol.53(2), PP47-48
- [39] Tu, W., Yan, C., Yan, Y., Ding, X., & Sun, L. (2018). Who is earning?
- [40] Wong A., Leahy W., Marcus N., Sweller J., 2012, "Cognitive load theory: the transient information effect and e-learning", *Learning and Instruction* Vol.22(6), PP449-457.

**APPROVAL PAGE**

**TITLE OF PROJECT:** RESEARCH ON THE INFLUENCE OF E-COMMERCE PLATFORM CONTENT MARKETING ON CONSUMER CONSUMPTION BEHAVIOR

**NAME OF AUTHOR:** CHEN JIAMIN

---

The undersigned is pleased to certify that the above candidate has fulfilled the condition of the project paper prepared in the partial fulfilment for the award of the degree of Master of Business Administration.

**SUPERVISOR**

Signature

Name

Date

: \_\_\_\_\_  
:  
:  
:



**ENDORSED BY:**

---

Dean

Graduate School of Business

Date: