The impact of e-commerce live streaming on China's apparel industry - an exploratory study based on value chain analysis

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Abstract. E-commerce live streaming (ECLS) has been a huge success in China's consumer goods industry, and the economic benefits of live streaming + e-commerce are widely discussed. Numerous researchers are intrigued by this burgeoning sales channel, but they prefer to examine how ECLS influences consumers' purchasing decisions from a psychological standpoint. Little is known about the influence of ECLS on industries such as the apparel sector. All elements that drive industry trends can have an impact on the profitability and sustainability of a business. China is the greatest producer and consumer of clothes in the world, with a significant number of apparel enterprises and international workers. Consequently, evaluating the success of ECLS in China's apparel business has significance for encouraging the strategic upgrading of global apparel enterprises. Due to the paucity of relevant empirical studies, the paper collects secondary data from ECLS reports and data analysis websites to perform an exploratory study based on Porter's value chain theory. The paper seeks to get a basic understanding of the primary elements that drive value creation in the value chain of ECLS in China's garment industry and to provide guidance and hints for future researchers. The findings show that: first, ECLS promotes consumer purchase intention; second, ECLS enhances consumer bargaining power; third, ECLS reduces upstream distributors' marketing costs; and fourth, ECLS promotes downstream suppliers' productivity improvement. Finally, the paper also provide some suggestions for the strategic upgrading of apparel companies.

Keywords: Apparel industry; Value chain; E-commerce; Live steaming; Key opinion leader (KOL).

1. Introduction

The rapid growth of e-commerce has integrated new consumption patterns into people's online entertainment. In China, you can see tens of thousands of viewers gathered in an influencer's live streaming room, and with a "buy it" from him/her, tens of thousands of items are successfully sold in the next few seconds. This developing type of online business is known as e-commerce live streaming (ECLS). ECLS transforms the traditional product-focused buying environment of e-commerce into a social, hedonic, and customer experience-focused shopping environment [1]. The number of ECLS users in China reached 464 million by December 2021, representing 44.9% of the total number of Chinese Internet users [2]. In conventional online purchasing, consumers can only receive information via images and text, but in ECLS, information is delivered as real-time video. In addition, viewers can interact with the merchant in real time by sending pop-ups and messages. As a result, it is easier for sellers to build good interpersonal relationships and stimulate impulse spending with consumers. Generally, merchant is more inclined to cooperate with key opinion leader (KOL) than to conduct live-streaming to sell goods themselves. Because each KOL is an influencer in a certain field, he/she have his/her own live streaming style and expertise, thus attracting a large number of followers and fans [3]. In September 2020, China's leading KOL Jiaqi Li achieved sales of US$1.4 billion on the Taobao live streaming platform [4]. With over 40 million followers in China, Jiaqi Li places great importance on building a close relationship with his viewers, even calling them "family". In addition, the largest number of KOLs sold apparel and cosmetic categories. The Taobao Live 2020 annual report shows that the proportion of apparel KOLs and cosmetics KOLs is 14% and 12.9% respectively [5].

The apparel category has always been the main sales category in ECLS. In Taobao's data, for example, the apparel category accounted for over 30% of sales in ECLS between January and May 2020 [6]. Since the outbreak of COVID-19, a large number of Chinese apparel brands with a

predominantly offline business have actively undergone digital transformation to mitigate the negative impact of COVID-19. However, compared to most traditional apparel brands that are struggling, some smart young brands have used ECLS as a breakthrough, actively partnered with KOLs and achieved counter-trend growth during the epidemic, such as Bosideng, Ubra. The success of ECLS in the Chinese apparel industry has positive implications for the future development of the global apparel industry. Because China is the largest producer and consumer of apparel in the world, the apparel market in China is estimated at US$ 427,154 million in 2021 [7]. While ECLS has become an important new sales channel for the apparel industry, few studies have analyzed what specific changes it has brought to the apparel industry. It is difficult for business operators to uncover key information from the available research that can contribute to the strategic upgrading of their businesses. Previous research has focused on how e-commerce can help the apparel industry upgrade its value chain [8] and how to integrate the new marketing models that e-commerce brings [9]. Besides, Jialing Li explored the opportunities for the development of ECLS in different countries [10]. The business scope of e-commerce is vast, and it is evident that live streaming in e-commerce has not been thoroughly examined in these research. Moreover, the majority of existing studies and academic publications on ECLS have analyzed the purchasing motivations and influencing variables of live viewers from a broad psychology standpoint [11]. Therefore, the purpose of this study is to fill the void in the academic literature regarding the influence of ECLS on the apparel business and provide direction for future research. In order to better comprehend these implications, the paper poses two research questions: first, how ECLS impacts product sales and marketing in China's apparel industry; and second, how ECLS impacts product design and production in China's apparel industry. In addressing the aforementioned concerns, the framework of the industry value chain is the optimal analytic tool. Based on Porter's theory of value chain analysis, the paper analyses the impact of ECLS on the value chain of China's apparel industry by focusing on four major value chain nodes. The remaining sections are organized as follows. In the following section, the paper describes the concept of ECLS, introduces the framework for the industrial value chain, and develops a study methodology. The analysis and discussion of the findings follow. The report concludes by examining future research directions based on the author's conclusions.

2. Theoretical Foundation and Research Design

2.1 E-Commerce Live Streaming

E-commerce live streaming (ECLS) refers to e-commerce activities conducted through a live streaming platform. Specifically, based on traditional e-commerce, live streaming technology creates an online shopping environment similar to the live shopping experience, creating a real-time interactive channel between merchants and consumers. As a result, ECLS differs significantly from traditional e-commerce in terms of product presentation, time costs, social attributes and purchase intentions (see Table 1).

Table 1. Traditional e-commerce vs E-commerce live streaming

	Traditional e-commerce	**E-commerce live streaming**
Product presentation	Often relies on post-processed images and text; low authenticity of information	Product information delivered via live video; high authenticity of information
Time costs	High	Low
Social attributes	Weak	Strong
Purchase intentions	Usually planned purchases with low willingness to spend on other products	Merchants can guide consumers' purchase intentions

Traditional e-commerce usually relies on post-processed images and text to deliver product content, the authenticity of which cannot be verified in a timely manner and is prone to customer trust crisis.

In contrast, ECLS can deliver product information through sight, sound and action, thus enriching the product content and improving the authenticity of the information. In traditional e-commerce, there is an asymmetry of information between the merchant and the consumer, and the consumer usually spends a lot of time gathering information about the product in order to buy the product he/she really want, which may come from consumers who have already purchased the product or from the media. Consumers compare information before making a purchase decision, which leads to high time costs. In contrast, KOLs generally have stronger product selection skills and will present product attributes in more detail based on their experience, thus reducing the time consumers spend gathering information [12]. In traditional e-commerce, consumers can only communicate about products through product review sections or customer service channels, which is a monotonous form of communication and feedback is not timely enough. The social attribute is therefore weak. In contrast, consumers are able to interact with KOLs or merchants in real time in live streams. Consumers can ask questions to sellers via bullet chat, and sellers can answer questions in a variety of ways, resulting in highly personalized service and guidance. In addition, consumers can also discuss products with each other. This form of communication is easy to build intimacy and increases user stickiness, and therefore has a strong social attribute. In traditional e-commerce, consumers usually make planned purchases and they ignore all unplanned items. In contrast, most consumers (58.5%) usually have no clear shopping goals when watching a live stream, and merchants can actively present their products to stimulate their purchase intentions [13]. Some KOLs will use the products they sell to put on a show, such as eating food and selling the same products to viewers during a live stream. In addition, some KOLs will invite viewers to participate in their performances, for example by taking suggestions from viewers to taste food that interests them. These methods can increase consumer engagement and interest in the product, which in turn increases their purchase intentions.

2.2 Industry Value Chain Framework

Michael Porter established the value chain theory in 1985. According to Porter, a business is a collection of actions performed in the course of designing, producing, selling, distributing, and supporting its products. These diverse yet interdependent industrial processes create a value chain, a dynamic process of value generation. Initially, value chain theory was primarily used to determine the origins of a company's competitive edge; however, it is now now commonly used to analyse an industry's profitability. When the object of value chain theory study shifts to an industry, an industrial value chain is produced. The industry value chain is a much bigger value system that incorporates the value operations of all industry chain companies. Before the formation of the industrial value chain, each company's value chain existed in isolation. Now, the industry value chain connects all the enterprises in the industry and uses novel links in the value chain to produce new industry value [14]. The industry value chain involves an evaluation of profits and costs at each stage of the product lifecycle, such as the procurement of raw materials, the costs connected with production and distribution, and the reasons that motivate consumers to purchase the final product. The quality of each node influences the entire cost and anticipated profitability of the given product [15]. In summary, the industry value chain framework is the most appropriate tool for studying the impact of ECLS in the apparel industry.

2.3 Research Approach

The paper poses two research questions above: firstly, how ECLS affects product sales and marketing in China's apparel industry; and secondly, how ECLS affects product design and production in China's apparel industry. This study is dedicated to the analysis of a new topic for which there is little existing relevant literature, and to ensure the credibility of the findings, the authors chose to use secondary data analysis as the research approach. Secondary data analysis refers to the analysis of data that has been collected by others for another primary purpose. Using these existing data provides researchers with limited time and resources with a viable option for researching other topics that lack relevant data [16]. Therefore, the author aims to collect high quality data from industry

reports of Chinese e-commerce giants such as Taobao and Tiktok, specialist data analysis websites, industry consultancies and other sources to enhance the credibility of the analysis results in order to answer both research questions comprehensively. In addition, the value chain framework is split below into four key nodes, which are consumer intention, consumer bargaining power, upstream distribution capability and downstream production capability. Subsequent analysis based on the secondary data collected is conducted to explore how ECLS affects value creation at these four nodes.

3. Data Analysis and Findings

3.1 Consumer Purchase Intention

The data shows that in the first quarter of 2020, the payment conversion rate of mobile Taobao live users was 55.6%, and the payment conversion rate of non-live users was 49.7% [17]. The conversion rate for Taobao Live is calculated as: Conversion rate = (number of customers who made a purchase / number of visitors to the shop) x 100%. EO Intelligence released a report in 2020 showing that ECLS significantly boosts user conversion rates. In KOL-hosted live stream, the purchase conversion rate is 20%; in merchant-hosted live stream, the purchase conversion rate is 6% to 10%; and in traditional e-commerce, the purchase conversion rate is only 0.37% [12]. EO Intelligence's conversion rate formula is: Conversion rate = (viewers who made a purchase / viewers who entered the live room) x 100%. Besides, through interviews with some clothing merchants, huxiu.com found that their daily live streaming conversion rate of purchase is between 7% and 10% [18]. Clearly, the purchase conversion rate of ECLS is much higher than that of traditional e-commerce, which means that consumers are more intent to purchase under the ECLS model.

3.2 Consumer Bargaining Power

A report released by Fastdata in 2021 shows that over 70% of ECLS users earn less than RMB 5,000 per month, making them very price sensitive [19]. As a result, they usually want to bargain with merchants to spend less money. A product manager at woshipm.com mentioned in her 2020 posting that she had purchased two products from the ECLS and they were 30% cheaper than the retail price [20]. The power of the individual consumer is weak, but KOLs, with their large fan bases and platform traffic preferences, are able to leverage their large user purchasing power and high conversion rates to win bargaining power and continue to gain the "lowest price on the web" label from merchants, thus continuing to attract users and creating a virtuous cycle.

3.3 Upstream Distribution Costs

In e-commerce live streaming, the traditional AISAS shopping model is beginning to shift to the AFAS shopping model. In the AISAS shopping model, consumers go through five steps from knowing a product to buying it, they are attention, interest, search, action and share. Whereas in the AFAS shopping model consumers only go through four steps, which are attention, fans, action and share. A report by JD Logistics shows that for an item costing 10 RMB, the merchant's revenue is 32 RMB and the consumer's purchase price is 68 in the traditional e-commerce model, while in the ECLS model the merchant's revenue is 36 and the consumer's purchase price is 63 [21]. Since the interest and search steps are replaced by the fans step, the merchant's marketing chain is shortened and more marketing costs can be saved.

3.4 Downstream Productivity

The impact of ECLS on the traditional e-commerce supply chain is that the addition of KOLs is more clearly transmitting consumer demand and feedback to the upstream of the apparel industry chain. As KOLs attract a large amount of consumer fans, consumers gain greater influence in the consumption of goods, meaning that mass product customization can be achieved. KOLs are able to analyse viewer preferences through live streaming data and provide feedback to merchants, which in

turn determines product formats and production quantities. As a result, one of the characteristics of ECLS is multiple styles and small inventory, which places high demands on supply chain speed. Zhao Yuanyuan, former Principal Investigator of Taobao Live, has pointed out at the first Taobao Women's Clothing Supply Chain Conference that a KOL usually needs to shelve 40 styles of clothing in each live stream, and 20 live streams a month need 800 styles. As there is also fierce competition among KOLs, they usually do not choose suppliers with low production efficiency, which forces suppliers involved in the ECLS business to improve production efficiency [22].

4. Conclusion

Based on Porter's value chain framework, this paper explores how ECLS has influenced the status and development of China's apparel industry. In response to the two questions posed in this paper, the results of the study found that ECLS has a positive impact on the sales, marketing, design and production of products compared to traditional e-commerce. Firstly, the live streaming model increases consumers' purchase intentions and directly contributes to sales growth; secondly, the shift from the AISAS to the AFAS consumption model shortens the marketing chain for merchants and directly reduces marketing costs; thirdly, KOLs become a bridge between consumers and merchants, and with the increase in consumer voice, KOLs can collect consumer demand and guide merchants' product design; and fourthly, the fierce competition between KOLs and the multiple styles and small inventory of the head e-commerce live platform have forced suppliers to improve production efficiency. There is no doubt that ECLS is an important tool for the apparel industry to upgrade its value chain, and it offers new growth opportunities for apparel companies' revenues in many ways. However, business managers also need to be aware of the potential risks and problems associated with live e-commerce. In terms of KOLs, while KOLs can bring in a large number of consumers and high conversion rates for merchant, it can become difficult to manage the behaviour of KOLs as their voice increases. In terms of products, most live merchants currently incentivize consumers to make purchases in some way.

Overall, ECLS makes up for some of the shortcomings of the apparel industry in traditional e-commerce. The real-time output of live information gives consumers a greater sense of authenticity and presence when shopping, without having to worry about pictures not matching the real thing in the traditional graphic mode. The addition of KOLs has shortened the marketing chain and the time it takes to sell goods, increasing conversion rates. The apparel industry chain has also been upgraded from upstream to downstream, allowing for large-scale customization services. However, the concept of ECLS is relatively new to academics, and some of its problems are not well explained for the time being. This paper is an exploratory study that only preliminarily discusses the impact of ECLS at four apparel value chain nodes. In addition, this paper only analyses the apparel industry in China and therefore has geographical limitations. In future research, scholars can further explore the application of ECLS in other countries around the world based on the value chain framework, and also analyse the impact of ECLS from new value chain nodes.

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