

How customer behavior has transformed as e-commerce has developed in the digital economy

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Abstract. The growth of e-commerce, a brand-new category of networked economic activity, has significantly impacted the Internet's expansion. Also, people purchase and sell goods through the Internet and other informational networks. It contributed to the development of the physical and virtual economy. It plays a significant role in advancing the rise of digital industrialization, the industrialization of business, the digitization of government, the enhancement of the quality of life for the populace, and the expansion of the national economy and social progress. Since e-commerce has been promoted as the primary national strategy in recent years, more people are aware of it and are attempting to engage in it. This paper will examine the characteristics of e-commerce and its rapid development from the standpoint of the digital economy. This paper will examine how customers' consumption patterns evolved during the same period. In addition, this paper will examine consumers' selection, consumption, and utilization of goods and services, as well as their emotional, psychological, and behavioral responses, from the standpoint of consumer behavior. Marketers may impact customers most by analyzing consumer behavior to determine how to sell their products.

Keywords: E-commerce development, Consumer behavior, Digital economy, Marketing strategy, Live streaming.

1. Introduction

In China, e-commerce is becoming digitalized and informatized due to the current boom in information technology development. The government, academic institutions, and IT businesses have been supporting the promotion of e-commerce because of its late start and the benefits it has demonstrated. As a result, e-commerce in China has grown significantly. Young shoppers like online buying because it offers a convenient purchasing experience. It has even developed into one of the sectors that help our nation's economy grow. However, as a result of a unique global trend in people's consumption patterns and preferences, online purchasing is steadily evolving. Customers who preferred offline buying in the past were compelled to try online shopping because of the circumstances.

On the other hand, online retailers have more creative techniques to draw customers, spur the desire to buy, and bring customers closer to the retailer. Live broadcasting, marketing campaigns, and platform promotion are a few examples. This article investigates how the digital economy is impacting the consumer behavior and fueling the rapid expansion of e-commerce against this backdrop.

1.1 Research Background

The growth of e-commerce in recent years has been accelerating, and its scope has expanded. Online shopping is the new method of shopping as compared to conventional methods. Consumers are simultaneously experiencing the speed and convenience of online purchasing thanks to the noteworthy worldwide trend. Fewer and fewer consumers are making purchases at traditional brick-and-mortar establishments. People's average consumption level rises along with the economy, and with the help of particular trends, the demand for consumer goods also steadily rises. E-commerce in China has impacted a wide range of production and daily life, and the country's economy and society need to transition to the digital era.

1.2 Literature Review

E-commerce is the term for the distribution and consumption of digital and digitized things. The foundation of the digital economy is e-commerce. Therefore, Guo Jingjing et al. (2018) find that it is essential to comprehend how the digital economy is evolving. E-commerce is another factor fueling this expansion [1]. In 2016, Jiang Yuanyuan (2017) found that total income exceeded 2 trillion yuan, totaling 245 million yuan, a growth of 23.7% from the prior year. Among them, the market size of electronic payment, shipping, and certification services reached 950 billion yuan, the revenue scale of e-commerce trading platforms reached 400 billion yuan, and the derivative service industry maintained expansion, reaching 1.1 trillion yuan. This is sufficient evidence that the e-commerce market is expanding significantly and has shifted into the center of China's new economic development [2]. Consumer behavior is slowly changing as a result of the growth of e-commerce, which has drawn many consumers. Younger consumers are more concerned with e-commerce service quality.

In contrast, older consumers are more interested in the quality of the products, according to a study by Fang, Jiaming, et al. (2016) [3]. Furthermore, Xiang Bei (2011) said that If the marketing plan is well-executed and enables greater involvement and connection, social media marketing can be a valuable platform for businesses. Along with offering direct sales to businesses, it also improves brand promotion by bringing clients and clients together [4]. From He Liangkai's (2022) research, it is clear that the "live-streaming with commodities" concept has been fully incorporated into people's daily lives with the emergence of the era of integrated media. This model's adoption has given consumers a new purchasing experience and given e-commerce businesses a new direction [5].

1.3 The meaning and content of research

According to previous research, the development of e-commerce is crucial for the digital economy. Currently, the digital economy has aided the growth of numerous industries, especially e-commerce. In this paper, we will study the development characteristics of television in China and analyze how e-commerce is developing rapidly in the digital context. Second, we will examine how consumer behavior has changed regarding age distribution, how live streaming draws viewers, how promotions affect shoppers' need to shop, and how e-commerce marketing methods influence impulse buying. For this reason, researching the evolution of e-commerce in the digital economy will aid in transforming our economy into a digital society. Studying how consumer behavior is impacted by e-commerce can assist e-commerce businesses or merchants make adjustments to or strengthening their relationships with customers.

2. The digital economy promotes the development of e-commerce

2.1 The characteristics of e-commerce development

Nowadays, the digital economy is the most critical economic form, after the agricultural and industrial economies. On the other hand, the digital economy is a brand-new economic structure that emphasizes data resources as the fundamental element, modern information networks as the primary medium, and integrated ICT applications as the foundation. Moreover, the digital transformation of each component is the primary driving force in promoting a new economic structure with greater unity of justice and efficiency. The Internet has significantly impacted China's industrial and commercial sectors since it was first introduced there in 1994. The Internet has impacted traditional industrial marketplaces and fundamentally altered how they conduct business. During the "14th Five-Year Plan," e-commerce will fully implement the new development concept, encourage new development with renewed vigor, and play a significant role in bolstering the domestic market. It also encourages a higher level of opening to the outside world, grabbing the initiative in global competition, and assisting in creating new development.

Comparatively speaking and more innovatively, China's e-commerce development stands out from other nations. First, shoppers in China have a variety of shopping sites to choose. Taobao and Jingdong are no longer in charge of the market. Figure 1 displays a sample of 5,500 valid surveys about live-streaming with product consumption that were gathered by the Beijing Consumer Association and the Hebei Consumer Rights Protection Commission. The majority of consumers uses Taobao, Jingdong, and Jindo. Because the remaining platforms are still in development, they do not have as many users as the original three. Second, the selection of goods is broad enough for the consumer to get anything they need without leaving their house. According to data from the Ministry of commerce people's republic of CHINA, there are 15 products available for purchase on the leading marketplaces, and these categories can completely satisfy consumers' everyday needs. Third, the growth of e-commerce has created a solid foundation for business owners and significantly reduced the labor shortage. The most effective of them, albeit it also aids in economic growth in rural or underdeveloped areas, is support for rural e-commerce development. The government has also implemented several support measures, such as one-time job subsidies, social security subsidies for college graduates, and one-time company startup social security subsidies. Fourth, e-commerce is developing quickly. It has immediately impacted all spheres of existence, not only the retail sector but also the future of the health care and education sectors.

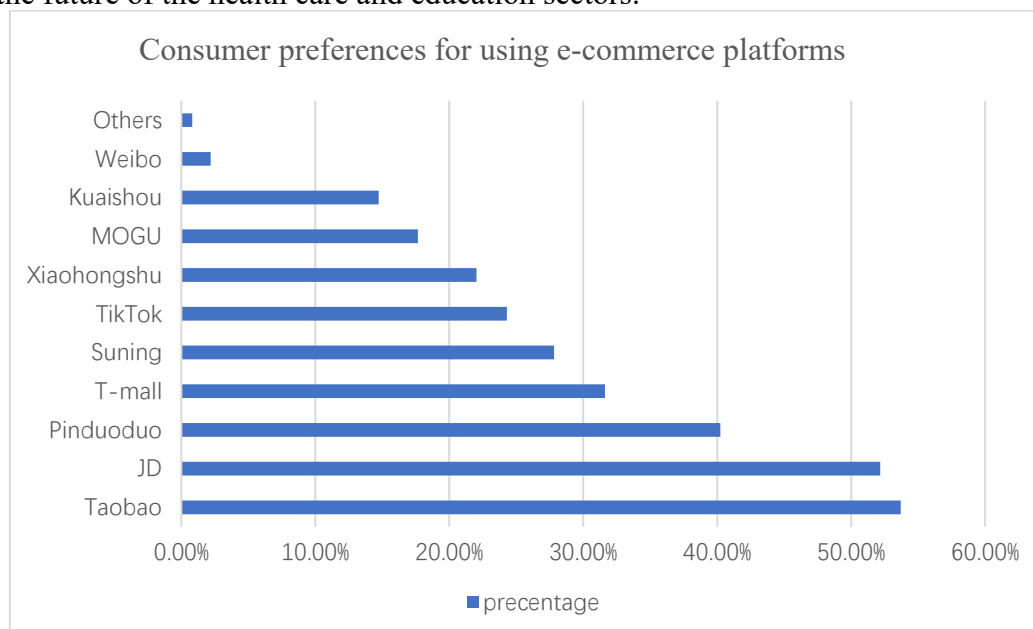


Figure 1. Consumer preferences for using e-commerce platforms
(Data from Beijing Consumer Association and the Hebei Consumer Rights Protection Commission:
http://hebei.hebnews.cn/2021-06/22/content_8554892.htm)

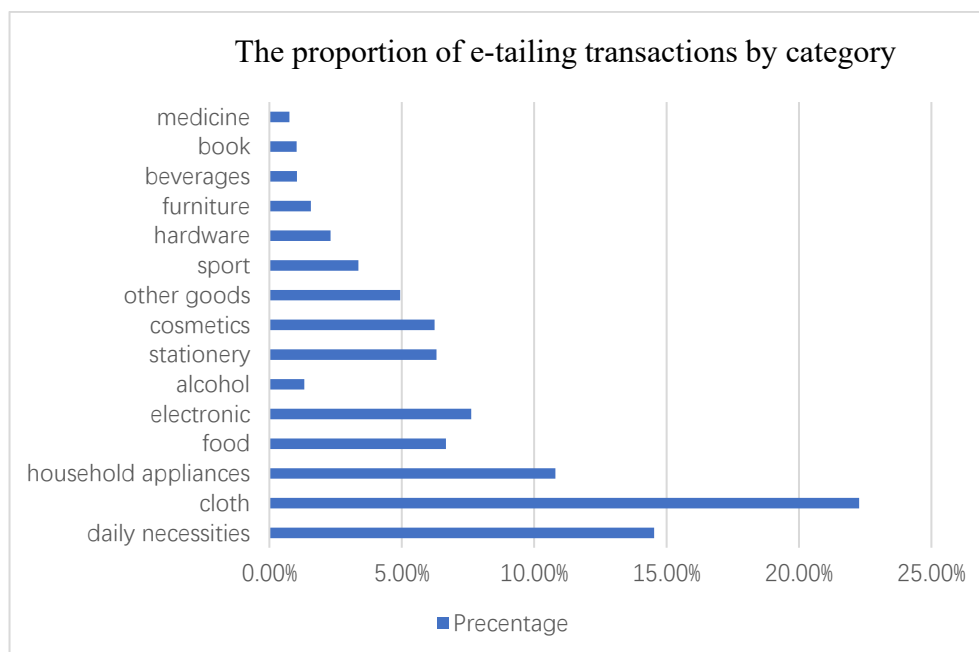


Figure 2 . The proportion of e-tailing transactions by category
(Data from: Ministry of commerce people's republic of CHINA)

2.2 The development of e-commerce in the digital economy

Since 2019's unique global trend, it has pushed a number of businesses to "halt output." As a result, suppliers are experiencing financial difficulties, and e-commerce companies are left with an abundance of inventory. The difficulties e-commerce businesses face serve as a stimulus for the industry's growth. First, the desire for internet purchasing has increased while offline shopping has been limited. At the same time, Taobao and Jingdong no longer control the majority of e-commerce firms. Consumer demand must be fulfilled and met as cities continue to close deals and new e-commerce enterprises emerge. Second, e-commerce is constantly evolving, both in terms of content and form. Because of the distinctive trend, people's entertainment activities have also become singular. The Internet is where everyone gathers for enjoyment. Thus it is always evolving, such as mobile games, popular platforms for short videos, live exercise, live commodities, community group purchases, cloud travel, and distance learning. Consumer purchase patterns have generally evolved and moved from offline to internet buying. As a result, e-commerce will only expand in scope. At the same time, the growth of e-commerce has gained momentum and become a crucial factor in developing the digital economy.

2.3 How the digital economy is accelerating the growth of e-commerce

Over the past three years, the structure of e-commerce has grown increasingly comprehensive. It is not confined solely to purchasing clothing, electronics, and household goods. Online fresh food stores and programs to alleviate poverty have also been significant drivers of e-commerce growth [6]. According to Aimedia Consulting's figures, e-commerce is expanding and becoming more comprehensive, while the click and sales rates of sizeable online shopping malls are also rising. It can also symbolize a notable trend during the e-bonus commerce period, a good time for expanding the business and gaining a positive reputation. It leads to more consumers of all ages being knowledgeable and savvy, and even those who were previously biased against internet buying are beginning to experiment with it. It indicates that consumer shopping preferences shift from brick-and-mortar stores to internet retailers. Simultaneously, there are more innovative approaches to attract more consumers, such as live streaming of celebrities, live fitness, and live cloud streaming. Travel bloggers will be among the types of anchors trained by MCN companies. Travel bloggers will visit impoverished places with unique characteristics to film films, which will be widely disseminated on

the platform, hence driving traffic to the video, which is also the most direct approach to inform people about the region. At the same time, the blogger can live-stream regional specialties. It also promotes the region's features, draws visitors to the region, and sells regional specialties, but it also lessens the economic pressure on local farmers and businesses. These effects on consumers are nearly always beneficial and influential for the growth of e-commerce.

Additionally, e-commerce is rapidly adopting new technology. As a result, new e-commerce scenarios driven by new technologies are emerging, accompanied by significant breakthroughs in B2B services, production, logistics, and consumer payments. B2B refers to the Internet-based exchange of goods, services, and data between merchants and businesses. Diversification and resource consolidation is one of the most significant B2B advancements, with some websites opting to diversify their business models to discover additional funding sources. Alibaba Group is also currently developing and implementing a diversification strategy. The primary source of revenue for B2B websites is the model's originality. Entrepreneurs can only be successful in the e-commerce industry if they have a thorough awareness of the market's peculiarities and employ novel profitability models.

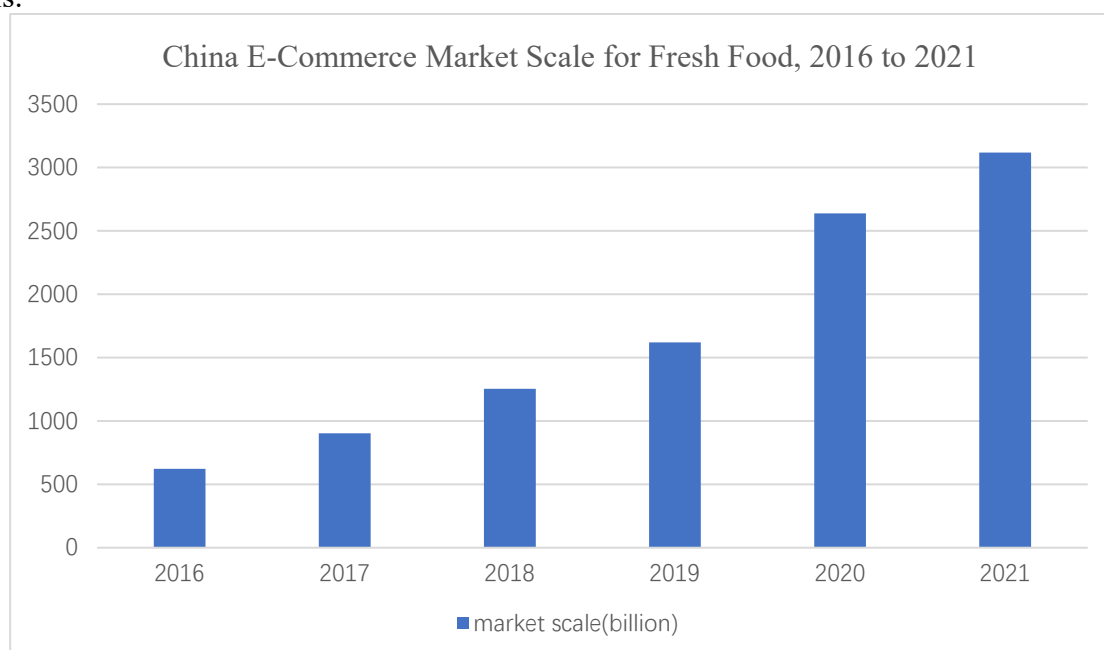


Figure 3. China E-Commerce Market Scale for Fresh Food, 2016 to 2021
(Data from iiMedia: <https://www.iimedia.cn/c400/84894.html>)

3. How the advancement of e-commerce influences consumer behavior

3.1 Distribution of online customer ages

Consumer behavior is the study of consumers and their selection, consumption, and utilization of goods and services, along with their emotional, psychological, and behavioral responses.

At different ages, each individual's perspective, choice, purchase criteria, purchasing decision, and purchasing power vary. According to the Aimedia Data Center figures, the majority of individuals are aged 24 and younger, 25 to 30 years old, and 31 to 35 years old. The reason is that consumers in these three age groups have experienced the growth of e-commerce, are familiar with the Internet, and readily embrace new products [7]. This age group has the most significant demand for apparel and other things. In addition, this age group has the most purchasing power because, due to the psychology of following the trend, many young customers would engage in impulsive consumption. In addition, the prices of internet products are typically lower than those of physical products. Young consumers are just beginning their careers. Thus their incomes are not exceptionally high. However, they will find the prices in online shopping malls more tolerable.

Moreover, shoppers have a vast selection of things from which to choose. Consumers do not need to spend extra time visiting offline shopping centers to find the right things. It saves time, and the costs are affordable for young consumers. As customers age, they spend less on lifestyle and entertainment, spend more judiciously, and plan their purchases rather than shopping impulsively. In addition, unlike younger consumers, they will become more concerned with brands and product quality than with pricing. In addition, they will assess variables such as practicability and utility.

Consequently, older consumers prefer offline buying. Since most elderly consumers do not utilize gadgets and have little interest in fashion, very few engage in online shopping. Seniors are particularly interested in health care products, which are also in great demand. However, this type of goods will not be acquired online by itself, but rather by family members or the purchasers, who will visit offline stores to hear an explanation before making a purchase. It is a severe problem because online shopping defrauds senior clients, which is also the phenomenon that causes the most anxiety in modern society. Consequently, the elderly do not have a demand for online buying and are not the focus of e-commerce.

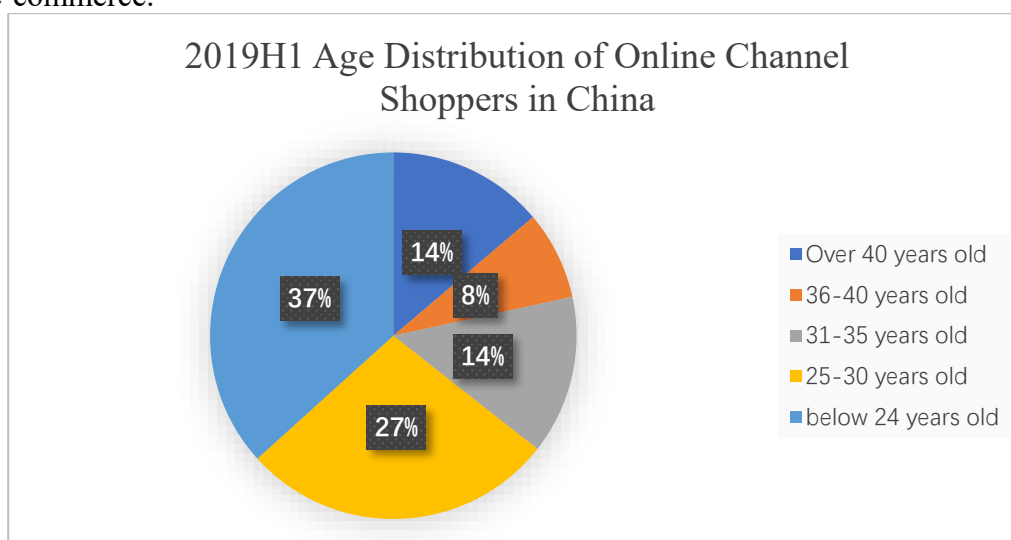


Figure 4. 2019H1 Age Distribution of Online Channel Shoppers in China
(Data from iiMedia: <https://xueqiu.com/9582690951/135384642>)

3.2 The allure of live-streaming with goods for customers

Live-streaming has arisen from a unique global trend, capturing the public's attention and becoming a modern fad. Live streaming is a new service that employs live-streaming technology to present products in an up-close and personal manner and offers advice and direction. Consumers often utilize this strategy. Among them, this sales technique can strengthen the relationship between the merchant and the consumer, increase the interaction rate between the merchant and the consumer, and foster a sense of affinity in the consumer. Even consumers can "negotiate" with the merchant, creating a sense of participation among shoppers. The three most crucial aspects of live streaming are product selection, traffic development, and anchor style. In the first place, the selection of products and the merchants themselves must be scrutinized at all levels. It is vital to confirm the suitability of the merchandise and the merchant's ability to manage after-sales issues brought by customers. Second, the anchor is also the most significant, and it can be claimed that the anchor is the determining element in whether or not consumers spend money. The corporation must first provide rigorous training for the anchor. For instance, all major platforms have laws restricting certain anchor behaviors, and specific language is prohibited during live broadcasts. Then, anchors must determine their positioning, i.e., which things they are best suited to promote. In addition to being able to recommend products and seed products, they must also have a thorough understanding of the items.

Additionally, it is essential to be approachable and responsive, as these factors motivate consumers to purchase products. When consumers ask a series of questions regarding a product, the anchor must answer them honestly and honestly to acquire their trust. Thus, consumers will be more likely to

purchase, and the repurchase rate will increase significantly. According to Hebei Consumer Rights Protection Commission, 53.33 percent and 51.83 percent of the live-streaming questionnaires are based on an anchor's affection and trust. It also demonstrates that the factors mentioned above are the primary sales drivers. The aesthetic of live streaming is one of the reasons why people watch and spend money on live streaming. Many live-streaming bloggers with products have a solid ability to agitate, enabling them to draw a substantial audience and generate substantial market value. As the price of goods in the live stream is significantly less than the typical purchase price, the offer's attractiveness is also a vital factor for consumers. In addition to offering a lower price than usual, the vendor will provide buyers with numerous product samples or gifts. There are no significant restrictions on the items sold via live streaming. As long as qualified, dependable merchants can supply clients with excellent after-sales support, the goods can be offered for sale. Live streaming has aided numerous impoverished regions and farmers. They also use live broadcasts to introduce their hometown and advertise their unique items, thereby boosting the local economy [8].

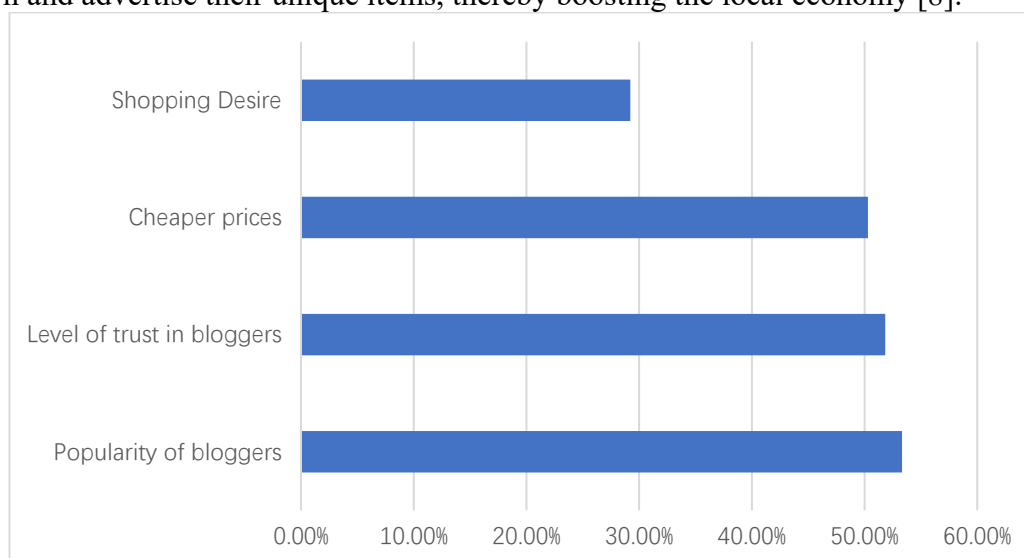


Figure 5. Live-streaming questionnaires
(Data from Hebei Consumer Rights Protection Commission:
http://www.bj315.org/xxyw/tpxw/202106/t20210616_28821.shtml)

3.3 The impact of promotion on consumers' desire to shop

Some shoppers cannot refrain from spending when they hear "discount" and "promotion." Examples include "Singles' Day," "618," and "Queen's Day." When these promotions begin, the desire for consumption will increase dramatically. In addition to the price, consumers receive discounts, reductions, and allowances for shopping. According to data from the Foresight Industry Research Institute - the sales of T-mall "Singles' Day" from 2016 to 2020 are expected to increase annually. This suggests that promotional activities have significantly encouraged consumer spending and that the spending fever is increasing yearly. From the perspective of shopping desire, consumers have actual shopping demands; they prefer to preserve life's essentials and high-priced items to purchase during sales to minimize the cost of goods [9]. Second, discounts and subsidies of each merchant are impossible outside of promotions, which provide consumers with a psychological "buy or lose" implication. Concurrently, the checkout page will display the purchase of x yuan, followed by X yuan off, giving consumers the impression that they are purchasing more and more at a discount. This is a marketing approach to attract consumers to spend more. At the end of the checkout process, shoppers will not only stock up on everyday essentials but also take advantage of the discount to test a variety of new items. Because the transaction is not conducted face-to-face, consumers do not feel the weight of "cash payment" and view the price as only a figure. As a result, consumers experience less stress and relaxation than while making offline transactions.

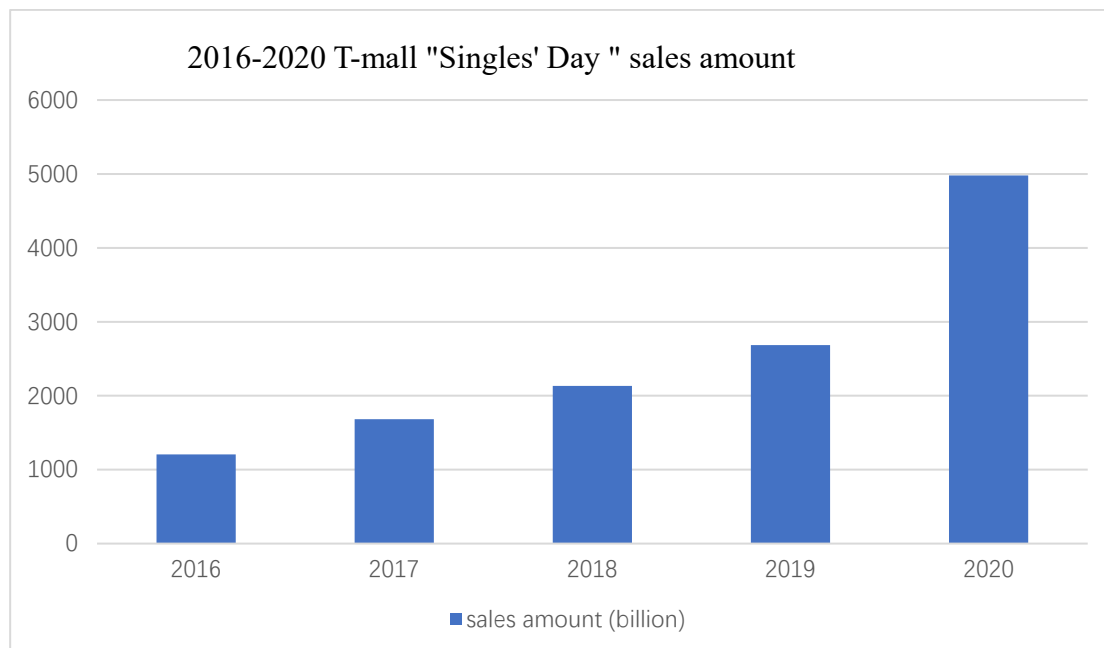


Figure 6. 2016-2020 T-mall "Singles' Day " sales amount
(Data from ARCHINA:

<https://baijiahao.baidu.com/s?id=1683759770756585129&wfr=spider&for=pc>)

3.4 The impact of e-commerce marketing strategies on customer impulsive purchases

The definition of impulse spending is purchases made without prior planning, typically in response to a stimulus. It is characterized by impulsive and unplanned activity [10]. Theme marketing, content marketing, and IP marketing are prevalent marketing methods that most e-commerce businesses and online retailers use today. The influence of theme marketing is relatively more significant. The majority of theme marketing comprises advertising events done around specific holidays. This marketing tactic has relatively significant consequences. At this time, impulsive consumption is most visible. In addition to purchasing daily necessities, consumers will unthinkingly order products they have never tried before or recommended by the platform based on their preferences. Content marketing is advertising, as brief videos, live streams, and photos are widely circulated across all major platforms [11]. The objective is to acquire and maintain an audience.

Nowadays, short videos are so popular that many bloggers incorporate adverts in various ways into their films. For instance, food bloggers who film themselves eating food do not hesitate to divulge the brand name and introduce the meal as they consume it. They may even include a purchase link at the video's conclusion. If a blogger or consumer believes that the blogger eats well after watching the video, they will purchase the goods without hesitation. In addition, live streaming is the medium most affected by consumers' impulse purchases. Live streaming differs from typical e-commerce in that consumers no longer actively search and compare products but passively learn about the products through the anchor's introduction and explanation. With the anchor's descriptive introduction and interactive Conversation, this method is more realistic than typical e-commerce, in which customers view images and describe the products independently. IP marketing is developing and disseminating IP to strengthen the relationship with consumers and entice diverse consumer groups to interact with the merchant [12]. In addition, it is essential to collaborate with well-known intellectual properties that have a good brand fit, cross-screen diversity, and a significant fan base. This year, the beauty brand colourpop collaborated with Disney. According to Xiaohongshu Mall's statistics, 87 eyeshadow sets were sold for the co-branded model, while 301 eyeshadow sets were sold for the co-branded model with Disney. This demonstrates that cooperating with a large fan following or a well-known IP is more appealing than regular products. Consumers who see "co-branded" or "limited edition" are more likely to purchase IP-containing products without much thought. Moreover, eighty percent of businesses offer "7-day no-reason return" and "shipping insurance" services, which promote

consumers' impulsive buying behavior and the psychological activity of "return if you do not like or it does not fit." This service encourages impulsive consumption, and consumers' psychological activity will be "return the product if they do not like it or it does not fit."

4. Suggestions

4.1 Systematic pre-job training for blogger

Currently, live streaming is the preferred method of purchase for the majority of consumers, and most bloggers are already working 24 hours in 7 days. However, live streaming is a platform for traffic promotion. Therefore, the age groups of those who watch the live stream vary. A substantial portion of the reason why consumers purchase products are due to bloggers. The product is acquired due to the explanation or interaction of the bloggers. Therefore, the quality of the blogger and training prior to the live broadcast is crucial. During training, the blogger should be cautioned not to overstate the introduction of goods and to make reasonable product recommendations. It is prohibited to deceive consumers or encourage juveniles to purchase products.

4.2 Adoption of relevant policies to tighten live streaming platform regulation

The platform is not only a trading platform for merchants and consumers but also a communication hub. When merchants and customers have irreconcilable disagreements, the platform must intervene immediately. Assist both parties in resolving the conflict so merchants and customers will significantly improve the platform's reputation. This will allow consumers to easily consume on the platform and collaborate with the business to resolve the issue. Although sales have increased, the product quality does not meet expectations for various reasons, and merchants continue to raise the rate of product returns. Do not let consumers lose faith in e-commerce because merchants and platforms failed to vet their suppliers thoroughly. If the complaint rate for a particular product or retailer is excessive, the relevant departments must act and make adjustments to protect the rights and interests of consumers. In addition, the platform must improve oversight and discipline. However, an incentive scheme is also required to incentivize merchants. For instance, decrease the store take a cut.

4.3 Using big data to implement accurate consumer attraction

The majority of big data is obtained through social media. From the billions of daily active users of social platforms, artificial intelligence, automated bots, and analytics collectors collect vast volumes of data. This information can improve marketing campaigns and the online user experience. The information associated with big data is large and intricate. Moreover, it produces ambiguity and uncertainty.

Moreover, today, traffic is everything regardless of the industry in which buying or selling. Because merchants are constantly seeking customers, retailers must collect users' search words. Users will only search when they need it, advertisements and content will be provided after the search, and users will actively seek. Thus the accuracy is unquestionable. In addition, it must be implemented according to the precise situation of characteristics such as district, age, gender, interests, and equipment.

5. Conclusion

5.1 Key findings

The steady rise of e-commerce contributes to our nation's digital transformation. The growth of e-commerce in China is defined by numerous factors, including pace, scalability, coverage, the provision of a solid platform, and the encouragement of entrepreneurship. Not only has the expansion of e-commerce stimulated the digital economy, but it has also created jobs and helped many underdeveloped regions thrive. Consumers' purchase decisions are influenced by their affection for

the anchor, faith in it, and promotion size. Age affects consumers; for instance, their product preferences vary based on occupation. Moreover, this is one of the reasons why consumers are inclined to make impulsive purchases.

5.2 future studies

After conducting an in-depth analysis, this paper concludes that the current e-commerce evolution is plagued mainly by a lack of credibility between merchants and consumers. There is still the chance that executing the recommendations given in this study will be challenging. For instance, regardless of platform control, the merchant only conducts a single sale. This might lead consumers' confidence in e-commerce to either increase or drop, but not grow. Concurrently, the expansion of the digital economy to support the growth of live e-commerce also poses a threat to the supply chain and the absence of industry laws. In the future of the e-commerce market, more emphasis will be placed on the brand creation of products inside each market and platform, as opposed to the technological end. Branding is a future trend that will boost consumer confidence in goods purchases. Suppose the enterprise can find a new beginning point, locate the proper development path, and work diligently to enhance its core competitiveness. In that case, it will achieve sustained growth and reap great rewards.

References

- [1] Go Jingjing. Chai Yueting:E-commerce is the most important part of digital economy[J]. China Information Community,2018(04):12-15.
- [2] Jiang Yuanyuan. New opportunities for e-commerce development in China as digital economy "overtakes"[J]. China Ocean Shipping,2017(11):20-21+8.
- [3] Fang, Jiaming, When, Chao, George, Benjamin, Prybutok, Victor R. Consumer heterogeneity, perceived value, and repurchase decision-making in online shopping: the role of gender, age, and shopping motives[J]. Journal of electronic commerce research, 2016, Vol.17 (2), p.116-131
- [4] Xiang Bei. Four trends of e-commerce marketing[J]. Market Observation, 2011(12):28-39
- [5] He Liangkai. How the "live broadcast + e-commerce" model can promote the development of China's economy[J]. China Business Journal,2022(13):18-20.DOI:10.19699/j.cnki.issn2096-0298.2022.13.018.
- [6] Xu Shushuang,Pan Tiantian,Tang Antelope,Jin Jiale. Survey Report on Consumer Shopping Mode Choice-Based on Offline and Online Shopping[J]. China Market,2021(06):118 119.DOI:10.13939/j.cnki.zgsc.2021.06.118.
- [7] Yan Jing. Research on consumer behavior of online shopping and response strategies [J]. Economist,2010(05):49-50.
- [8] Zhao Shumei,Liang Bo. Characteristics, challenges and development trend of direct broadcasting with goods[J]. China Distribution Economy,2021,35(08):61-71.DOI:10.14089/j.cnki.cn11-3664/f.2021.08.006.
- [9] Ma Xingquan,Chen Wei. Analysis of the Motivation of Impulsive Consumption in Online Shopping[J]. Economic and Trade Practice,2016(06):59.
- [10] XING Ziyan, MENG Xuanzhu, LI Xinhang. Analysis of online shopping characteristics of consumers in "Double Eleven"[J]. Modern Marketing (Next Issue),2019(08):67.DOI:10.19932/j.cnki.22-1256/f.2019.08.037.
- [11] Wang Yannan. Content marketing strategy based on social network environment [J]. Shanghai Business,2022(08):56-58.
- [12] Hu Zifang,Peng Jiaying. Research on the influence of IP marketing of Netflix brands on consumers' purchase intention[J]. Journal of Guangdong Open University,2020,29(01):102-106.