

Research on the Future of Cross-border E-commerce from the Perspective of Sustainable Development

Yuezhen He^{1,a,*}

¹*Dongtai Middle School, Jiangsu Province, 224226, China*

a. 18752209322@163.com

**corresponding author*

Abstract: With the popularization of the Internet and the rapid development of mobile technology, e-commerce has not only changed people's consumption habits, but also profoundly affected the business model and industrial structure. However, due to the involvement of laws, regulations, and policy environments from different countries and regions, cross-border e-commerce still presents numerous uncertainties and risks. In the future, it is necessary to strengthen the research on cross-border e-commerce laws and policies to provide guidance for the standardized development of cross-border e-commerce. This article aims to examine the enhancement of cross-border e-commerce-related policies and the achievement of sustainable development through PEST analysis and other methods. With the continuous improvement of globalization, it is imperative to strengthen trade cooperation between countries. The trend of economic globalization is irreversible. The Chinese government must formulate policies in line with the development trend of the times, constantly improve the level of opening up to the outside world, absorb foreign investment funds, learn advanced science and technology from other countries, and promote the optimization and upgrading of industrial structure and the improvement of production efficiency. Therefore, the Chinese government has accelerated the establishment of a new pattern of opening up to the outside world in accordance with the requirements of the times, and gradually formed a new development pattern with the domestic cycle as the main body and the mutual promotion of the domestic and international double cycle to achieve more efficient, higher quality, fairer, safer and more sustainable development in order to promote global economic prosperity.

Keywords: e-commerce, sustainable development, dual circulation, cross-border policy.

1. Introduction

As an important part of the digital economy, the research background of e-commerce is closely related to the development of informatization. China's e-commerce emerged earlier than in other countries, and with the continuous advancement of information technology, it rapidly permeated all aspects of social life. The improvement of information network infrastructure and the growth of market demand have both promoted the development of the e-commerce industry. In recent years, China's information network infrastructure has significantly improved, providing strong support for the rapid development of e-commerce. With the increasing number of netizens and the change of consumers' shopping habits, the demand for e-commerce market continues to grow, providing a wide space for the rapid

development of e-commerce. At the same time, the e-commerce industry has also made progress in technological innovation and supply chain management optimization. Artificial intelligence, big data, blockchain and other technologies have been widely used in the field of e-commerce, which has improved transaction efficiency, reduced operating costs, and promoted the innovation of business models[1]. By building an efficient supply chain management system, e-commerce enterprises have realized the whole process of control commodity production, circulation, sales and other links, and improved the market response speed and customer satisfaction. However, due to the involvement of laws, regulations, and policy environments from different countries and regions, cross-border e-commerce still presents numerous uncertainties and risks. In the future, it is necessary to strengthen the research on cross-border e-commerce laws and policies to provide guidance for the standardized development of cross-border e-commerce. This article aims to explore the enhancement of cross-border e-commerce-related policies and the promotion of its sustainable development through PEST analysis and other methodologies.

2. The Development Process of the E-commerce Economy

First of all, the notion and importance of the sustainable development of e-commerce are to be presented. E-commerce represents a business activity based on computer and network communication technology. Its rise and development are closely related to the development of network technology. E-commerce in a narrow sense refers to business transaction activities realized through the Internet, mainly including buyers and sellers, e-commerce platforms and logistics service providers. On the other hand, e-commerce in a broad sense generally encompasses all commercial activities carried out through electronic means, including the electronic process of business communication within the company and business transactions between enterprises, in order to improve the efficiency of each link. The sustainable development of the e-commerce industry refers to the coordination and unification of economic benefits, social benefits and environmental benefits through the scientific, reasonable and effective use of resources in e-commerce activities. With the rapid development of the e-commerce industry, resource consumption and environmental problems are prominent, and sustainable development has become an inevitable trend in the development of the industry[2]. Throughout the development process of e-commerce in China, it has experienced four periods, including the beginning of the period, the period of rapid development, the period of explosion and growth, and the period of stable development. Although there are many obstacles and setbacks on the road to development, it has still made proud achievements and has entered the stage of intensive innovation and steady development so far. With the popularization of the Internet and the development of mobile communication technology, e-commerce has increasingly become an important force in driving the growth of China's consumer demand, constantly promoting the upgrading of industrial structure and the optimization of modern service industry. China's e-commerce industry has made many achievements since its development in 1977 with great potential for development. The online retail sales of domestic e-commerce have ranked first in the world as early as 2013 and have lasted for 9 years. The China E-commerce Report 2020 released in 2021 shows that the total operating income of China's e-commerce industry in 2020 reached 5.45 trillion yuan, while the total operating income of China's e-commerce industry in 2011 was only 0.04 trillion yuan has increased by nearly 136 times in 10 years. There are leading enterprises that have achieved excellent development results in various modes of domestic e-commerce B2B, C2C, O2O and B2C. Taobao, Tmall, Alibaba, and JD.com have all secured positions in the top ten of the "Top 100 Most Valuable Retail Brands in the World" ranking list released by Brand Finance, a renowned British brand agency. Notably, Taobao holds the third position, indicating that domestic e-commerce enterprises wield significant popularity and influence within the international market. [3]

2.1. An Overview of the Global E-commerce Market

In terms of regional distribution, the Asia-Pacific region is the fastest-growing region in the global e-commerce market, followed by North America and Europe. Emerging markets such as Latin America, Africa and the Middle East are also accelerating their development, which is expected to become an important driving force for future growth.

The United States and China are the world's largest e-commerce markets, with a huge consumer group and a mature e-commerce ecosystem. In Europe, the United Kingdom, Germany and France are the most developed countries in e-commerce, while Eastern Europe shows the potential for rapid growth. In Asia, in addition to China, India, Southeast Asian countries, etc. are also rapidly developing e-commerce and becoming an important market force.

With the popularity of the Internet and mobile devices, consumers' shopping behavior is undergoing profound changes. More and more consumers choose to shop online and enjoy the convenient and personalized services brought by e-commerce. Consumers pay more attention to the quality and reputation of products in the shopping decision-making process, and are willing to pay higher prices for high-quality products. At the same time, environmental protection and social responsibility have also become important aspects of consumers' attention[4].

The main competitors in the global e-commerce market include Amazon, Alibaba, JD.com, etc. These enterprises occupy a dominant position in the market with strong logistics systems, rich commodity resources and advanced technical advantages. In terms of competitive strategy, enterprises pay attention to technological innovation, logistics system construction and ecosystem construction to provide a more convenient and personalized shopping experience.

Social e-commerce and content-driven e-commerce have emerged as new trends in the consumer market. Nowadays, consumers are increasingly relying on content recommendations from social media and e-commerce platforms to discover and purchase goods. New technologies such as artificial intelligence, big data, virtual reality and augmented reality are being applied more and more widely in the field of e-commerce, providing consumers with a more immersive shopping experience. The concept of green environmental protection has been valued in the field of e-commerce, and more and more enterprises have begun to promote environmentally friendly and sustainable products and services.

2.2. Main E-commerce Models and Platforms

B2B platform: e-commerce model between enterprises, data information exchange and business activities through private networks or the Internet, such as Alibaba International Station and China Manufacturing Network

B2C platform: the business model of enterprises selling products and services directly to consumers, such as JD Mall and Tmall

C2C platform: user-to-user mode, buying and selling through online platforms, such as Taobao, Paipai

O2O platform: the combination of offline business and the Internet to realize the mode of service online publicity and offline transaction

C2B platform: the model of consumers to enterprises, consumers customize products or services according to their needs

Cross-border e-commerce model: including B2B, B2C, C2C, etc. The model for end consumers is collectively referred to as cross-border online retail, such as AliExpress, eBay, Amazon, etc[5].

2.3. The Impact and Transformation of E-commerce on the Traditional Economy

The change of marketing concept prompts merchants to pay more attention to consumer needs and realize personalized and diversified marketing strategies. It takes advantage of the high efficiency and low cost of the Internet to help merchants quickly respond to market changes and improve the efficiency of information feedback.

The change of business mode has broken the time and space restrictions, shortened the distance between merchants and consumers, reduced intermediate links, enabled manufacturers to communicate directly with consumers, reduced costs and improved efficiency.

By eliminating intermediate links, e-commerce can provide more competitive prices, which puts pressure on the traditional retail industry and impacts the traditional commercial price system.

Electronic payment has gradually become mainstream due to its convenience and security, posing a challenge to traditional payment methods.

The "14th Five-Year Plan" E-commerce Development Plan emphasizes the new mission of e-commerce in the national economic and social development in the new era, and puts forward the new goal of e-commerce to promote the high-quality development of the digital economy and help achieve common prosperity[6]. Traditional enterprises can cooperate with e-commerce platforms, develop high-end markets and introduce big data. Transform and upgrade by analyzing the system and updating product types. At the same time, the digital transformation of e-commerce has also promoted the transformation and upgrading of traditional industries. For example, the latest achievements in intelligent manufacturing, digital marketing and other fields are combined with the e-commerce industry to help the transformation and upgrading of traditional e-commerce and promote the transformation of the e-commerce industry from a "new business form" to "new normal".

3. Relevant Measures for the Sustainable Development of E-commerce

In order to better grasp the macro environment and development trend of the whole e-commerce industry, ensure that the conclusions of the research have certain reference value for domestic enterprises or individuals engaged in e-commerce, and help domestic e-commerce enterprises seize future opportunities and reduce potential risks, this article uses PEST analysis method to analyze the e-commerce industry. The PEST model refers to the macro-environmental analysis of the development of something, including politics, economy, society and technology, which is often used to study the external environment faced by an economy or enterprise. The economy mainly includes the status and level of economic development, inflation rate and government income and expenditure. Politics mainly includes a country's political system and policies, relevant laws and regulations, etc. Society includes population, religion, values, and customs. In terms of popular culture and other aspects, technology refers to the progress of high-tech and emerging science and technology.

The rise in packaging waste has led to the squandering of resources and environmental pollution. Although efforts have been made to use recyclable or biodegradable packaging materials, the associated costs are high and widespread adoption is challenging. It is recommended that relevant policies be proposed for supervision and cooperation with supply chain partners. A significant amount of carbon emissions is generated through distribution, which can be mitigated by utilizing electric or hydrogen energy vehicles. Additionally, implementing stringent carbon emission standards and promoting green logistics can help address this issue.[7].

Overconsumption and wastage are pressing concerns. To combat this, a second-hand commodity trading platform should be established to encourage consumers to purchase environmentally friendly products and cultivate a mindset of sustainable consumption.

4. Current Challenges and Coping Strategies

4.1. Technical Challenges

E-commerce provides a convenient online shopping experience, changes consumers' shopping habits, and makes consumers more inclined to online shopping than traditional physical stores.

On the online platform, commodity prices and information are easy to compare, which increases the transparency of the market and forces traditional retailers to improve their price competitiveness.

Through data analysis and real-time inventory management, e-commerce enterprises have optimized the supply chain and reduced inventory backlog and logistics costs.

E-commerce breaks geographical boundaries, making it easier for small and medium-sized enterprises to enter the global market and compete with traditional large enterprises.

The rise of e-commerce has created new employment opportunities, such as online marketing, data analysis and logistics, but it may also lead to a decrease in employment in the traditional retail industry.

In order to adapt to the challenges of e-commerce, many traditional enterprises have begun to adopt new business models, such as O2O (online to offline), subscription services and personalized customization.

E-commerce has promoted the popularization of digital and mobile payments, reduced cash transactions, and improved payment efficiency and security.

Although e-commerce reduces the need for people to travel to physical stores, thus helping to decrease carbon emissions, it also brings about new environmental challenges in terms of packaging waste and logistics transportation. E-commerce enterprises can collect a large amount of consumer data and use this data for market analysis and decision-making to improve operational efficiency.

The low threshold of e-commerce enables new entrants to quickly gain market share, intensifying market competition and putting pressure on traditional enterprises.

4.2. Recommendations for Sustainable Development

E-commerce enterprises are encouraged to increase investment in technology research and development, especially in cutting-edge technology fields such as artificial intelligence, big data, blockchain and the Internet of Things, in order to improve operational efficiency, optimize user experience and enhance security.

The integration and application between different technologies should be promoted, such as combining AI and big data for accurate marketing and personalized recommendations, and applying blockchain technology to supply chain management and commodity traceability, to create new commercial value.

Establish a sound market supervision mechanism to combat unfair competition, such as false propaganda, price fraud, etc., and maintain market order and consumer rights and interests.

Through policy support, financial subsidies, tax incentives and other means, difficulties of small and medium-sized enterprises in capital, technology, talents and other aspects will be overcome, and the diversification and vitality of the e-commerce market will be promoted. Close cooperation between e-commerce enterprises and upstream and downstream enterprises such as suppliers and logistics providers should be enhanced, realize information sharing, resource optimization and allocation and process coordination, and improve the overall efficiency of the supply chain.

E-commerce enterprises should be encouraged to adopt environmentally friendly materials, energy-saving and emission-reducing technologies, implement green packaging, green logistics and other measures to reduce the impact on the environment and achieve sustainable development.

The construction of the after-sales service system is to be strengthened, the response speed and problem-solving ability of customer service are to be improved, and consumer trust and satisfaction

are to be enhanced. The website/APP interface design, shopping process, payment method, etc. are to be continuously optimized to improve the convenience and comfort of user experience. At the same time, pay attention to changes in consumer demand and launch new products and services that meet market demand in a timely manner.

E-commerce enterprises are encouraged to actively develop international markets, participate in international competition and cooperation, and improve brand influence and international competitiveness.

Exchanges and cooperation with other countries and regions in the field of e-commerce are to be strengthened to jointly promote the sustainable development of the global e-commerce economy.

In accordance with the new trends and characteristics of e-commerce development, relevant laws and regulations should be revised and improved in a timely manner to provide legal guarantees for the healthy development of the e-commerce economy.

A sound supervision system is to be established, the supervision of e-commerce platforms is to be strengthened, and the stability of market order and the protection of consumer rights and interests are to be ensured. At the same time, the protection and management of e-commerce data is to be strengthened to prevent data leakage and abuse[8].

4.3. The Research Direction and Prediction of the Future E-commerce Industry

With the in-depth advancement of globalization and the growing demand of consumers for high-quality and diversified goods, the cross-border e-commerce market will usher in a golden period of rapid development. The e-commerce platform will actively expand overseas markets and meet the needs of consumers in different countries and regions through localization strategies.

The popularity of social media and the rise of social e-commerce have provided new growth points for e-commerce platforms. Through social media platforms, consumers can more conveniently share shopping experiences, evaluate products and recommend products to friends. This social shopping experience not only improves consumers' sense of participation and interactivity, but also generates increased traffic and exposure opportunities for e-commerce platforms.

The omni-channel retail model of online and offline integration will become the mainstream of the e-commerce industry. E-commerce enterprises will provide consumers with a seamless shopping experience through online and offline integration. Consumers can try on and experience the product in the physical store and place an order through the e-commerce platform. Additionally, they can choose to visit the physical store to pick up their goods after browsing and comparing products on the e-commerce platform. With the increasing diversification and personalization of consumer needs, e-commerce platforms will pay more attention to providing personalized products and services. By deeply exploring consumer needs and behavioral habits, e-commerce platforms will be able to provide products and services that are more in line with consumers' preferences.

The government will continue to introduce relevant policies to support the development of the e-commerce industry. These policies will cover technological innovation, market access, tax incentives and other aspects to provide a more relaxed and favorable development environment for e-commerce enterprises.

With the rapid development of the e-commerce industry, supervision will also be strengthened. The government plans to enhance the supervision of e-commerce platforms to ensure the stability of market order and the protection of consumer rights and interests.

5. Conclusion

Cross-border e-commerce involves navigating the laws, regulations, and policy environments of different countries and regions, leading to numerous uncertainties and risks. With the continuous

improvement of globalization, it is imperative to strengthen trade cooperation between countries. The trend of economic globalization is irreversible. The Chinese government must formulate policies in line with the development trend of the times, constantly improve the level of opening up to the outside world, absorb foreign investment funds, learn advanced science and technology from other countries, and promote the optimization and upgrading of industrial structure and the improvement of production efficiency. Therefore, the Chinese government conforms to the requirements of the times to accelerate the establishment of a new pattern of opening up to the outside world, gradually forming a new development pattern with the domestic cycle as the main body, and the domestic and international double cycles promote each other, so as to achieve more efficient, higher quality, fairer, safer and more sustainable development and promote the common prosperity of the world economy. In the future, with the development of science and technology and society, some policies still need to be improved[9]. At present, there are still numerous deficiencies in this thesis and areas that require improvement. For example, there is insufficient evidence to model or analyze certain financial statements in order to support one's perspective, as well as a lack of scientific rigor and accuracy. Due to the relatively wide and diverse factors affecting the cross-border issues of e-commerce, and the current limited capacity, only some simple influencing factors are analysed and some targeted countermeasures and suggestions are put forward. The depth and breadth of the research still need to be improved. Other scholars are needed to continue the expansion.

References

- [1] Fan Yuzhen. Zhuo Debao. *Empirical research on the role of e-commerce in China on economic growth*. [J] *Industrial Technology and Economy*. 2010:40-44
- [2] Wang Jiayi. Briefly talk about financial accounting problems and countermeasures in the development of e-commerce enterprises. [J]. *Contemporary Accounting*. 2021.2A:126-128
- [3] Yu Ziwei. (2023). *Knowledge Empowerment: "Oriental Selection" Live Broadcast of Identity Construction and Emotional Connection of Goods Actors* (Master's Thesis, Hubei University). Master's degree <https://link.cnki.net/doi/10.27130/d.cnki.ghubu.2023.000067>
- [4] Tian Tian. Wang Hai. Looking at the live marketing strategy of agricultural products from the rise of "Oriental Selection". [J] *Journal of Anhui Vocational and Technical College*. 2022:33-38
- [5] Yang Xinyi. Why did the net profit in the middle of fiscal year 2024 increase revenue but not profit? [J]. *Daily Economic News*. 2024:1-3
- [6] Bai Rui. Guo Li. *Analysis of Oriental Selection Marketing Model*. [J] *Cooperative Economy and Science and Technology*. 2023:51-53
- [7] Sun Hua. (2019). *Research on the Development of E-commerce of Yinpeng Company* (Master's Thesis, Wuhan Engineering University). Master's degree <https://link.cnki.net/doi/10.27727/d.cnki.gwhxc.2019.000264>
- [8] Li Qiong. *Common problems and countermeasures of China's cross-border e-commerce financial and tax compliance in the context of digital finance*. [J] *Finance, Taxation and Finance*. 2024:4-6
- [9] Li Shujun. (2023). *Research on the development of cross-border transformation and development of e-commerce in China under the background of double cycle* (master's thesis, Harbin University of Commerce). Master <https://link.cnki.net/doi/10.27787/d.cnki.ghrbs.2023.000545>