

Research on the operation mode and mechanism of cross-border e-commerce enterprises under digital trade

Bingyi Chen¹, Jiani Wang^{2,*}

¹*Sheffield University Management School, The University of Sheffield, Sheffield S10 2TN, United Kingdom*

²*International School of Hospitality and Tourism Management, City University of Macau, Macau 999078, China*

**Corresponding author*

Keywords: Cross-border e-commerce; digital trade; business operating model

Abstract: In the rapid development of digital trade today, the smooth development of foreign investment has an important role in regional development, and digital trade has a significant positive enabling effect on China's competitiveness in the field of economic development. In this paper, digital trade is divided into digital technology, cross-border trade platform, digital operation mode, etc. Based on the analysis of the dimensional level, this paper researches the cross-border e-commerce mode mechanism from multiple angles. At the same time, this paper analyzes the cross-border e-commerce enterprise development mode and motivation in the context of digital trade development in a multi-dimensional way. This paper aims to explore the development of China's cross-border e-commerce industry, with a view to providing theoretical support for the future development of traditional retail industry.

I. Introduction

In the course of future development, e-commerce is predicted to be one of the most important projects that can drive the global economy to develop at a high speed in the future. Currently, countries are actively promoting the legal cooperation of e-commerce to improve the construction of e-commerce, aiming to lay a good social environment for the development of e-commerce, so that the e-commerce economy can develop stably. The characteristics of e-commerce, coupled with the rapid development of digital information technology, the domestic e-commerce industry is also covered in various different fields, providing impetus for the recovery of the development of some industries. In recent years with the development of science and technology, technology is constantly updated, the efficiency of cross-border transactions is rising, cross-border e-commerce is able to integrate the ability of trade resources, for cross-border transactions to inject new vitality.

The cross-border e-commerce industry can help the market build a multi-regional circular mechanism. Analyzed from different perspectives, the cross-border e-commerce industry can help upgrade and update all aspects of the transaction process, including manufacturing, product transportation and distribution, and consumption.

2. Literature Review and Prospects

Digital technology has shown its advantages in the present time, and the uniqueness of digital trade allows it to inject a new mode of international trade in the present time. With economic globalization as the background, we can find that e-commerce has made irreplaceable contributions to global economic growth. Data in the current era has become a new type of energy under international competition, which can help the country to achieve a huge advantage in international competition. The research on cross-border e-commerce, digital trade, enterprise operation mode and other related topics have also been emphasized by more scholars. This paper refers to the research conclusions of some scholars and puts forward new ideas for the related industries.

2.1 Digital trade

Table 1: The digital trade in a particular perspective on the global trade

Scholars	Year of publication	Point
Zhan Jingbin, Wang Chen	2024	After the high-speed enhancement of digital technology, the development of digital trade is mainly embodied in the promotion of enterprises to carry out business model innovation, while the development of digital trade can also be reflected in the effectiveness of the trade supply chain, market feedback and other aspects. In the current era, enterprises can rely on digital technology to optimize their own mode of operation, so that the operation of enterprises is more efficient.
Lü Tengfei	2024	By presenting the experimental analysis, it is proved that the digital economy itself has a non-negligible positive empowering effect on China's trade, and at the same time, after experiencing the innovation of related technologies, it will strengthen the advantages of the digital economy, and further bring a positive effect on China's trade competitiveness.
Jin Zehu, Xie Wenyu	2022	A large amount of data was collected for experimental analysis, and the conclusions they drew proved that the digital economy would directly affect the quality of the relevant trade services, and through the conclusions drawn, suggestions were made from multiple perspectives on how to maximize the use of digital trade-related to promote economic development.
Qian Hongping	2023	The current digital-related industries have been the main cornerstone for the construction of global factor resources, and have also played an important role in the global economy in terms of reshaping the relevant aspects.
Zhang Yu, Jiang Tengchun	2021	The digital economy has a clear long-tail effect. As a result of this effect, there are more possibilities for supply exchanges between trades, while the digital economy-related effects also broaden the diversity and personalization of consumer demand.
Peng Yu et al.	2021	Based on the statistical approach proposed in the content of the Extended Balance of Payments Services Classification (EBOP), scholars can compute the relevant trade data for the sectors involved and further explore the development of digital trade in different areas.

For the industry related to digital trade, scholars in China have put forward many thoughts and possibilities for its future development. From the perspective of the definition of digital trade-related concepts to analyze, there are many scholars have summarized it. In this paper, we have read a large number of articles from a variety of perspectives, scholars from a variety of perspectives, including the definition of digital trade-related, the development of digital trade so far to the impact of different

industries, and how the digital trade in a particular perspective on the global trade and economy to make an impact and so on (Table 1).

2.2 Cross-border e-commerce

Table 2: The policy perspective on the development of cross-border e-commerce

Scholars	Year of publication	Piont
tsang yee tong, tam chun fai	2023	The development of cross-border e-commerce industry under the policy, they believe that the support from the policy can quickly help stabilize the market economy, but also promote the rapid development of enterprises, promote the double cycle at home and abroad, to the policy point of view to explore the policy-driven behind the rapid development of cross-border e-commerce.
Jing Guowen, Wang Da	2024	Foreign direct investment in domestic economic growth and industrial development and renewal have played a role in promoting the economic development of the region can play a great role in promoting the policy is also recommended to guide more enterprises to participate in the cross-border e-commerce industry, maximizing the policy effect.
Zhang Yanqin	2024	Based on the theoretical foundation of cross-border e-commerce in the business circulation industry to carry out further experiments, dedicated to accelerating the business circulation in China to put forward more theoretical support.
Ma Shuzhong, Guo Jiwen	2022	The construction of comprehensive cross-border e-commerce pilot zones has an important role to play in advancing the development of commerce and trade, and can provide high-quality practical experience for other regions to promote the domestic economic cycle in terms of results.
Tang Wanhuan	2023	Boldly proposed the double difference method to measure the cross-border e-commerce platform, confirmed the role of the platform in promoting the scale of export trade, and further explored the mechanism of the relevant role to make data support for the development of the platform.
Wang Rui et al.	2020	The reduction of transaction costs will directly promote the development of economic circulation goods and services, and the development of the cross-border e-commerce industry has so far promoted the efficiency of regional commerce and trade circulation.

E-commerce relies on the technical development of the Internet, and cross-border e-commerce, as an international business behavior, can be regarded as a kind of international business behavior in which both parties to the transaction in different regions use the Internet e-commerce platform to complete the consumer behavior, use the platform for the delivery of money, and ultimately rely on the transnational logistics to deliver the goods to the hands of consumers. The current scholars for cross-border e-commerce field of analysis will often be for multiple dimensions, including the policy perspective on the development of cross-border e-commerce, cross-border e-commerce can be for the domestic and international economic cycle system to make the leading effect, and the mechanism of import and export of foreign trade and so on (Table 2).

2.3 Enterprise operation mode

Nowadays, along with the gradual development of Internet-related technologies, its application areas are also constantly updated and expanded. Based on the development of the times, enterprises in the process of development and transformation compared with the traditional business model will be more inclined to utilize emerging technologies for development. This business model makes the

products have a certain brand competitiveness in the development and competition of globalization. Certain brand competitiveness in the globalization competition (Table 3).

Table 3: Certain brand competitiveness in the globalization competition.

Scholars	Year of publication	Point
Guo Li Bin, Yu Xiao, Wang Yiju	2023	It examines how cross-border e-commerce companies can utilize the overseas warehouse model for development, and also suggests some possibilities for the development of the overseas warehouse model for cross-border e-commerce companies.
Wang Shanshan	2020	In her article, she also studied the innovation of the business operation mode of the traditional retail industry in China. At the same time, the article emphasizes the role of big data background for the promotion of business model innovation, but also for the enterprise's business model characteristics of the summary and thinking, that the future of the digital development will continue to promote the continuous innovation and reform of enterprises.
Tan Chunqiao et al.	2022	Propose ideas for a new business model, analyze the situation in terms of the aggregation effect, aim to maximize the benefits of the company, and propose a theoretical basis related to pricing for the company.
Lui Meng Ning	2024	The concept of supply chain concentration is introduced, and it is argued that firms should clarify the moderating advantages that the relevant concepts play on the relationship between dynamic capabilities and firms' operational performance to help firms further enhance their competitive development advantages.
Ma Jianyang	2024	Using the regression threshold, based on the development data of different firms in recent years, it is explored that supply chain development has a direct impact on the operational efficiency of firms.

2.4 Synthesis of comments

From the current domestic research data, the current domestic research for cross-level e-commerce industry has certain shortcomings, still waiting for more scholars to explore it. The possible risks and negative impacts of the cross-border e-commerce industry are rarely mentioned in articles. For example, whether the cross-border e-commerce industry has different behaviors from the traditional market in the past, and whether there is a possibility of loopholes within the political regulation. From the policy point of view, part of the policy has not been formulated with the actual development of the enterprise to study, there may be the case of paper, but instead, causing difficulties in the development of enterprises. Secondly, the theoretical analysis about cross-border e-commerce is more aimed at macroeconomic indicators such as exports, investment, economic growth, etc., while scholars of non-industry-specific indicators pay less attention to it and rarely study it.

3. Analysis of the Problems and Motivations Encountered by Digital Trade in Cross-Border E-Commerce Externally

3.1 Cross-border e-commerce external issues

Nowadays, cross-border e-commerce is in the process of rapid development in every country in the world, but the cross-border e-commerce industry still has more development problems. In order

to better understand the development of the cross-border e-commerce industry, the following summarizes some of the problems that may be faced in the cross-border e-commerce industry.

3.1.1 Problems caused by logistics and transportation

The current cost of cross-border logistics is still high, and the long transportation time of cross-border transportation may cause the rise of logistics and transportation costs. At the same time, the excessively long transportation process will increase the uncertainty of transportation, resulting in a rise in transportation time, leading to an increase in the operating costs of cross-border e-commerce, and bringing additional burdens to enterprises. At the same time, the problem also comes from the customs inspection links in different countries, cross-border transportation taking into account the different customs inspection habits of goods between different countries, involving customs inspection, cross-border delivery and other links may be complicated procedures during the inspection, the inspection time is long, the most direct result of the goods from the order to the hands of the consumer to deliver the goods to the hands of the consumer for a long time, so that consumers' enthusiasm for consumption slipped.

3.1.2 Laws and regulations of different countries on foreign trade

The laws and regulations of different countries and regions will be influenced by local culture and concepts, and there are large differences in laws between different countries. The cross-border e-commerce industry relies on the markets of different countries and regions, and enterprises and consumers need to comply with local laws and regulations when carrying out trade activities, which puts forward higher requirements for enterprises to carry out trade, and enterprises must understand the laws and regulations of different regions. Changes in regional policies and laws and regulations may have a greater impact on the sale of goods. National policies may change, and the cross-border e-commerce industry's regulatory act may wait for changes with the time, region, and industry development status to affect the future policymaking, the original policy may also be adjusted, if the enterprise is not sensitive enough to the relevant policy changes, it may result in the enterprise information is not updated in a timely manner, resulting in the loss of the transaction. Therefore, for enterprises, they need to pay more attention to different regions on trade-related policies and industry development, in order to obtain the advantage of foresight in the future changes that may occur, so that their own industry to profit from[1].

3.1.3 Demand from the market side

Marketing and customer service from the market will put forward higher requirements on the relevant communication personnel and enterprises. Consumers from different countries and regions have different cultural backgrounds, and consumption habits and product preferences are different between different countries and regions, which puts higher demands on cross-border e-commerce enterprises in terms of marketing and publicity and how to serve consumers and other cultural aspects, as well as bringing new challenges. Enterprises also need to improve the localization of some of the products, do the relevant industry enterprises need to pay more attention to localized product development, when necessary, also need to upgrade the development of localized products, to ensure that the products have more local cultural characteristics, so that the products have a competitive advantage in the local area, but also to meet the needs of consumers from different regions[2].

3.2 Analysis of the drivers of cross-border e-commerce development

To understand the reasons for the changes behind the growth of the industry, this article has been

analyzed around a number of key dimensions.

3.2.1 Perspective based on market demand

In order to analyze the market-related demand, this article refers to some market data. In order to analyze the current development status of cross-border e-commerce, according to the data released by China's customs department, the total import and export value of China's trade in goods reached RMB 17.5 trillion by May 2024, with a year-on-year growth of 6.3%.

Analyzed from the perspective of trading partners, customs trade data show that ASEAN, Europe and the United States are still the three major regions/countries for China's trade in goods, accounting for a relatively large amount of trade. However, it is worth noting that in recent years, the Association of Southeast Asian Nations and Hong Kong, China, with China's trade in the total amount of data showing a rising trend, which also shows the importance of regional economic cooperation and re-export trade in the future.

And the General Administration of Customs released data on the types of enterprises import and export situation is also worth analyzing. The import and export data related to private enterprises showed obvious growth momentum, the first five months of private enterprises import and export 9.58 trillion yuan, an increase of 11.5%, accounting for 54.7% of China's total foreign trade value. The import and export of state-owned enterprises also grew, but the growth rate was lower compared to private enterprises. China's foreign trade imports and exports showed a steady growth trend in the first five months of 2024, mainly thanks to the growth of general trade, processing trade, bonded logistics imports and exports, as well as the strong performance of imports and exports of private enterprises and state-owned enterprises. Meanwhile, in terms of the import and export of some specific commodities, China's international competitiveness in high value-added products has continued to grow, with notable growth in exports of products such as ships, integrated circuits and automobiles[3].

3.2.2 Based on the perspective of supply chain logistics

The development of logistics-related industries provides more development possibilities for the cross-border e-commerce industry. We can find part of the data about the logistics industry from the financial report.

In the data of 2023, it seems that the total import and export data of cross-border e-commerce in China is 2.38 trillion yuan, which shows the growth momentum year-on-year, and the year-on-year growth data is 15.6%. This also shows the exact fact that the cross-border e-commerce market is expanding. In order to expand the advantages of enterprises in the logistics industry, before entering the market, enterprises need to conduct sufficient market research to understand the culture and consumption habits of the target market, including competitors, potential cooperative enterprises, etc. Enterprises in product sales should pay more attention to the platform to provide consumer group data, through the data algorithm analysis to learn more about the needs of their own target groups, at the same time, you can use the platform to take the initiative to understand the search for foreign high-quality products, with the relevant brands for cooperation, to ensure that the diversification of related products, to increase the competitiveness of their own brands. At present, there is also a variety of competition between the major multinational logistics platforms, enterprises can learn from the process of platform competition to the provisions of different platforms, select the most suitable for the development of their own products to cooperate with the platform to connect with consumers, so that products can be seen by consumers in different regions.

3.2.3 Perspectives based on the policy environment

After the impact of the public crisis, the current government are more emphasis on public health and safety related issues, for enterprises, the relevant departments need to pay more attention to the sales process may produce relevant problems, while paying close attention to the government for different products import and export policy, to avoid unnecessary losses caused by policy changes. At the same time in the understanding of the relevant policies and regulations, enterprises can also cooperate with local enterprises, increase the publicity of their own products, and actively seek the possibility of common development, so that their own enterprises to enter the local market faster.

In China, for example, various regional governments have shown a supportive attitude towards the cross-border e-commerce industry. For example, some time ago, the State Post Bureau proposed a new possibility for the logistics industry. The “Express to the Sea” project led by the Postal Bureau has laid a cornerstone for the development of enterprise logistics transportation. On the whole, China's domestic express logistics industry has a strong guiding role, the government in the formulation of policies will be considered from various perspectives, in the policy guidelines to support and guide the development of express delivery enterprises for the neighboring countries and regions of the business, and at the same time, actively communicate and cooperate with different national and regional governments, to help enterprises to better integrate into the local market environment[4].

4. Operational model mechanism for cross-border e-commerce

First, considerations are raised for the mechanism of cross-border e-commerce operation mode. With the development of cross-border e-commerce field, more enterprises have noticed the development potential of cross-border e-commerce industry. In order to ensure the development of cross-border e-commerce, it is necessary to analyze its operation mode and make suggestions on how relevant enterprises can efficiently conduct relevant trade activities. In this paper, based on the relevant theories of global value chain, the cross-border e-commerce business model is explored, and several different operation model mechanisms are analyzed and illustrated.

4.1 Self-operated mode of operation

The basis for the development of the self-managed model is the concept of standardization. Under the development of this concept, the enterprise's production and operation of products for unified procurement, production tends to template, support for electronic means of trade, and the use of high-speed development of logistics to ensure that the product can be successfully realized cross-border transportation. Cross-border e-commerce operation mode in the form of self-management has strong characteristics, including the mastery of its product quality, the understanding of the e-commerce exchange process, and the grasp of risk-related content.

The foreign trade industry itself has a certain threshold, which also directly promotes the development of globalization strategy, advancing the rapid development of the global e-commerce industry. Under the basis of self-owned cross-border e-commerce development, cross-border e-commerce can establish a complete set of development processes, including supply chain development, to ensure that the products have personalized customization attributes to meet the needs of various consumer groups. Analysis of products from the perspective of self-management, it can be found that the types of products favored by consumers often have small class goods and centralized products [5].

4.2 Operating model provided by the platform

The operation mode of the platform provides a wide range of application scenarios. Under this mode of operation, buyers and sellers can exchange and communicate information through the platform and achieve synchronized integration of information. Afterwards, suppliers or consumers can view relevant product and operation information during the transaction process, realizing an increase in the transaction rate. A part of the platform to provide the mode of operation of the relevant enterprises will be categorized under its products or services, so that users can clearly understand the information that may be used in the procurement process. In the platform operation mode, cross-border e-commerce only provides a trading platform for enterprises and consumers, and does not participate in the transaction itself.

4.3 Operational model from an enterprise perspective

Looking at past data, the global financial crisis of 2008 has set higher requirements for businesses, which need more development to meet future challenges. On this basis, some enterprises may consider the cross-border e-commerce sector and quickly refer to the business operation model. Many trade-related enterprises have discovered the trend of economic development and gradually carry out cross-border e-commerce related industry transactions. In the cross-border e-commerce enterprise operation mode, enterprises may adopt the means of purchasing and selling on behalf of others to market their products. Under this means, civilianized consumption has become the core of the development of enterprise marketing. At present, we are in the scene of globalization development, with the increase of exchanges and exchanges between various countries and regions, the number of people who have the need for overseas transactions is also showing an upward trend, under this trend, some people outside the country and in different regions may become the agents of some enterprises' purchasing and selling mode to help enterprises carry out product promotion and sales[6].

4.4 Integrated Service Provider Perspective Operating Model

The overall operation model of the integrated service provider model is more complete and functional than other operation models. This type of operation mode has the development advantages of platform operation mode, at the same time, compared with the platform operation mode, the integrated service provider has expanded and upgraded a number of functions, including digital payment means, transnational logistics and transportation, and product upgrading and reform, which directly makes up for the development defects of the platform operation mode. In the process of actual platform promotion, many domestic e-commerce platforms in China have adopted the operation mode of similar integrated service provider perspective for trial and error. This type of model can ensure the diversified attributes of the product sales and marketing process, while ensuring the convenience of product dumping.

5. Conclusion

At the present time, we are in an era of increased global trade activity, and the demand for foreign trade has risen globally, and there are signs of a rebound in external demand as a whole. Under the current international economic and trade system, e-commerce has become one of the key programs of the WTO. Under the influence of the public health incident in early 2020, some countries rely on e-commerce for economic recovery in the process. With the development of science and technology, big data, AI, knowledge graph and other digital technology advances, commodity trade and so on are in the development of digital change road. At present, more enterprises are involved in the operation

of the information technology platform, the development of each environment of the value chain, the different conditions for the coherence, to ensure that the quality of the product service is more perfect, and increase the global competitiveness of enterprises.

First, the cross-border e-commerce industry is summarized from the policy environment. Regarding the future development of the cross-border e-commerce industry, we can analyze the current domestic policy environment. The current domestic policy system for the cross-border e-commerce industry has been initially formed. Various related departments and legal provisions for cross-border e-commerce related regulations have been gradually improved. These policies can ensure the basic order of the industry and promote the development of the industry. At present, all local governments and relevant departments are actively involved in promoting the integration and development of cross-border e-commerce industry with other industries, aiming to utilize cross-border e-commerce industry to market their own basic products, promote the efficient upgrading of other local industries, and obtain effective and successful experience. After the success of cross-border e-commerce in a region, other regions can also refer to the successful experience of upgrading and optimizing their own industries, which reduces the cost of trial and error and helps other regions to improve their development efficiency. The development of the industry cannot be separated from the support of policies, and the development potential of the cross-border e-commerce industry is huge under the strong support of relevant policies and regulations.

Second, the cross-border e-commerce industry is summarized from the market environment. In the present time, with the rise of exchanges between various countries and regions, the cross-border e-commerce industry also shows its unique competitiveness. The future cross-border e-commerce industry still has high development potential. With the rising development of the global e-commerce related market, more consumers tend to make product purchases online, which also brings more development opportunities to the cross-border e-commerce industry. As the penetration rate of e-commerce market continues to increase, and the related infrastructure supporting logistics and transportation and online communication continues to improve globally, the future market scale of cross-border e-commerce industry is huge.

Under the current market environment, the cross-border e-commerce industry has shown its huge development potential and pattern, which brings new development opportunities for enterprises and also presents new challenges. In order to better seize the opportunities and overcome the challenges, enterprises not only need to pay attention to the policy, but also to ensure the brand competitiveness of their products and product innovation, to ensure that their products in the future more complex challenges invincible.

References

- [1] Liu Yaping. *Challenges and realization path of rural cross-border e-commerce development in the context of digital economy* [J]. *Business and Economic Research*, 2022(12):138-141.
- [2] Huang Hua, Lin Xiushui. *The impact of cross-border e-commerce development on the innovation efficiency and innovation quality of distribution enterprises* [J]. *Business and Economic Research*, 2024(4):143- 146
- [3] Fang Hao, Zheng Houtian. *Logical followings and practical mechanism of realm e-commerce empowering digital transformation of agricultural industry* [J]. *Agricultural Economy*, 2024(3):132-134
- [4] Wang Yan, Sheng Xiaodan. *Research on the influence of digital economy development of countries along the “Belt and Road” on China's cross-border e-commerce exports*[J]. *Modern Finance and Economics (Journal of Tianjin University of Finance and Economics)*, 2024(5):22-44
- [5] Tang Qingqing, Lv Desheng, Wang Jue. *Does digital trade promote export product quality upgrading?* [J]. *Modern Finance and Economics (Journal of Tianjin University of Finance and Economics)*, 2023, 43(8):64-81.
- [6] Wang Yu, Hao Mano, Qing Cheng Peng Fei. *Cross-border e-commerce empowers firms to improve supply chain resilience: Micro evidence from Chinese listed companies*[J]. *Research on the World Economy* 2024 (6): 105-119