EXPLORING OPPORTUNITIES AND CHALLENGES OF CROSS-BORDER E-COMMERCE IN RURAL CHINA IN THE POST-PANDEMIC ERA BASED ON POVERTY ALLEVIATION THROUGH E-COMMERCE

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A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMNTS FOR THE DEGREE OF MASTER OF SCIENCE IN DIGITAL INNOVATION AND FINANCIAL TECHNOLOGY

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MASTER OF SCIENC
IN DIGITAL INNOVATION AND FINANCIAL TECHNOLOGY

Examination Committee :

……Chairman
(Asst.Prof.Dr Pongosutti Phuensane)

……Member
(Dr. Anukul Tamprasirt)

……Member
(Dr. Mu Lei)

……Member
(Dr. Piyachat Udomwong)

Advisory Committee :

……Advisor
(Dr. Anukul Tamprasirt)

……Co-advisor
(Dr. Mu Lei)

23 April 2024

To

Dr. Anukul Tamprasirt

Dr. Mu Lei

my parents

I sincerely appreciate all the guidance, advice, and support you have provided throughout my academic career.

ACKNOWLEDGEMENT

During my academic journey at the graduate level, I received assistance and support from numerous individuals, enabling me to successfully complete this thesis. Hereby, I express my most sincere gratitude to all those who have offered me aid and support.

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Furthermore, I would like to express my gratitude to my fellow students in ICDI. During my graduate studies, we have mutually learned from each other, encouraged one another, and progressed together. Their companionship and assistance have enriched my graduate life and made me cherish these beautiful moments even more.

In conclusion, I would like to express my gratitude to the institution and the department for providing an excellent academic environment and resources. The university's libraries and laboratories have significantly facilitated my thesis writing. The academic lectures and seminars organized by the department have allowed me to stay abreast of the latest developments in the field, thereby broadening my academic horizon.

I am grateful to all those who have offered me assistance and support. Their companionship and contributions have reinforced my commitment to the academic journey. I will persist in my efforts to continually enhance my academic standards and make my own contribution to the academic enterprise.

Huilin Lei

หัวข้อปริญญานิพนธ์ สำรวจโอกาสและความท้าทายของอีคอมเมิร์ซข้ามพรมแดนในชนบทของจีนในยุคหลังโรคระบาด-การบรรเทาความยากจนโดยอีคอมเมิร์ซ

ผู้เขียน นางสาว เรย์ ฮุ่ยเหลิน

ปริญญา วิทยาศาสตรมหาบัณฑิต
(นวัตกรรมดิจิทัลและเทคโนโลยีการเงิน)

คณะกรรมการที่ปรึกษา อาจารย์ ดร.อนุกูล แต้มประเสริฐ อาจารย์ที่ปรึกษาหลัก
ดร.มู่ เหล่ย อาจารย์ที่ปรึกษาร่วม

บทคัดย่อ

ในช่วงไม่กี่ปีที่ผ่านมา ด้วยความลึกซึ้งและนวัตกรรมของเศรษฐกิจดิจิทัลCBECได้กลายเป็นกำลังหลักในการส่งเสริมการเติบโตการค้าต่างประเทศและการพัฒนาเศรษฐกิจของจีน รัฐบาลยังมองว่าเป็นแรงขับเคลื่อนสำคัญของการเติบโตทางเศรษฐกิจและส่งเสริมความเจริญรุ่งเรืองในประเทศจีน โดยเฉพาะในปี2558 ยุทธศาสตร์ฟื้นฟูชนบทแห่งชาติ (National Country Revitalization Strategy) ที่ใช้อีคอมเมิร์ซลดความยากจนเป็นเครื่องมือในการช่วยให้ชุมชนยากจนร่ำรวย รูปแบบคลัสเตอร์อุตสาหกรรมของหมู่บ้านTaobaoมีความโดดเด่นเป็นพิเศษ และนำการเปลี่ยนแปลงที่สำคัญมาสู่เศรษฐกิจในชนบทผ่านการทำงานร่วมกันของบุคลากรนโยบายและวิสาหกิจ

อย่างไรก็ตาม การระบาดของโควิด-19ได้ส่งผลกระทบอย่างรุนแรงต่อเศรษฐกิจโลก กิจกรรมการค้าต่างประเทศของจีนลดลงอย่างมากและCBECในชนบท ก็เผชิญกับความท้าทายหลายอย่างเช่น ห่วงโซ่อุปทานการหยุดชะงักของเงินทุน การขาดสิ่งอำนวยความสะดวกด้านโลจิสติกส์ และการขาดแคลนบุคลากร แต่ในขณะเดียวกัน การระบาดของโรคก็ทำให้เกิดโอกาสใหม่ๆ เช่นความต้องการที่เพิ่มขึ้นของผู้บริโภคสำหรับCBEC ความเหนียวของผู้ใช้ที่เพิ่มขึ้น และความนิยมของการชำระเงินแบบไร้สัมผัส

บทความนี้มีวัตถุประสงค์เพื่อสำรวจสถานะปัจจุบันของการพัฒนาประชาคมเศรษฐกิจชุมชนในชนบทของจีนภายใต้สถานการณ์การแพร่ระบาดของCOVID-19และความท้าทาย และโอกาสที่ต้องเผชิญเพื่อเป็นแนวทางทั้งทางทฤษฎี และทางปฏิบัติเพื่อการพัฒนาที่ยั่งยืนด้าน สุขภาพในยุคหลังการแพร่ระบาด เนื้อหาการวิจัยประกอบด้วยผลการวิจัยทั้งใน ประเทศและต่างประเทศพื้นฐานทางทฤษฎีและการกำหนดแนวคิด การวิเคราะห์สถานการณ์ การพัฒนาในปัจจุบัน การสำรวจรูปแบบการบรรเทาความยากจนของอีคอมเมิร์ซ โดยเฉพาะกลไกการก่อตัวของรูปแบบคลัสเตอร์ในหมู่บ้าน Taobaoและการวิเคราะห์ปัญหา และโอกาสในช่วงการแพร่ระบาดของCOVID-19 สุดท้ายมีข้อเสนอการพัฒนาที่ตรงเป้าหมาย และมาตรการตอบโต้ที่มีความสำคัญในทางปฏิบัติต่อการเพิ่มขีด ความสามารถในการแข่งขันของอุตสาหกรรมชนบทและส่งเสริมการลดความยากจน

Thesis Title	Exploring Opportunities and Challenges of Cross-border E-commerce in Rural China in the Post-pandemic Era: Based on Poverty Alleviation through E-commerce
Author	Ms. Huilin Lei
Degree	Master of Science (Digital Innovation and Financial Technology)
Advisory Committee	Dr. Anukul Tamprasirt — Advisor Dr. Mu Lei — Co-advisor

ABSTRACT

In recent years, with the deepening and innovation of the digital economy, CBEC has become the core force to promote China's foreign trade growth and economic development. The government also regards it as a key driver of economic growth and promotes its vigorous development in China. Particularly in 2015, the National Rural Revitalization Strategy included e-commerce-based poverty reduction as a means of helping impoverished communities become wealthy. The Taobao village industrial cluster model is particularly prominent, which has brought significant changes to the rural economy through the synergy of talents, policies and enterprises.

However, the outbreak of the COVID-19 has a serious impact on the global economy, China's foreign trade activities have been significantly reduced, and rural CBEC is also facing multiple challenges, such as supply chain, capital flow interruption,

lack of logistics facilities and talent shortage. But at the same time, the pandemic has also given birth to new opportunities, such as the growth of consumer demand for CBEC, the improvement of user stickiness and the popularity of non-contact payment.

This paper aims to explore the development status of CBEC in rural China and its challenges and opportunities under the COVID-19, and provide theoretical and practical guidance for its healthy and sustainable development in the post epidemic era. The research content covers research results at home and abroad, theoretical basis and concept definition, development status analysis, poverty alleviation through e-commerce mode discussion, especially the formation mechanism of Taobao village cluster mode, as well as the analysis of problems and opportunities during the COVID-19 pandemic. Finally, it puts forward targeted development suggestions and countermeasures, which has important practical significance for improving the competitiveness of rural industries and promoting poverty reduction.

Keywords: Cross-border E-commerce, E-commerce, Digital Economy, Poverty Alleviation through E-commerce, Rural China, Agricultural Products

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Introduction

1.1 Research Background and Significance

1.1.1 Research Background

1) Global and China's CBEC Development Scale and Trends

Cross-border e-commerce (CBEC), supported by digital technology and internet connectivity, is a product of the integration of international trade and e-commerce. In recent years, CBEC has shown a trend of continuous growth globally. According to Statista, the global B2C CBEC market value is projected to reach 7.9 trillion U.S. dollars in 2023, representing a ninefold increase from 785 billion U.S. dollars in 2021. The COVID-19 pandemic has significantly impacted the global economy, but CBEC has surged against the odds, becoming an important engine for global digital economic development with enormous growth potential.

In the post-pandemic era, the CBEC in China has shown a sustained growth in these years. China's CBEC experienced rapid growth from 2019 to 2020. However, influenced by the COVID-19 pandemic, the import volume slightly decreased from 2020 to 2021. Overall, in recent years, CBEC exports have taken the lead, while imports have shown a gradual upward trend. CBEC not only plays an major role in the economy but also promotes the digital transformation and upgrade of traditional trade and society.

The CBEC platform provides a digital trading environment for cross-border transactions and simplifies the traditional trade process. Cloud computing, big data and artificial intelligence technologies, based on the deep use of massive data, realize key functions in trade links such as market analysis, supply chain management and improving operational efficiency. Seeing from the social digitalization, according to data released by CNNIC, China has 1.067 billion internet users as of December 2022, with 308 million of those users being located in rural areas and a 61.9% internet penetration rate. Compared to December 2021, the urban-rural gap in Internet penetration narrowed by 2.5%. China's rural digital environment and services continue to improve, and CBEC has broad prospects.

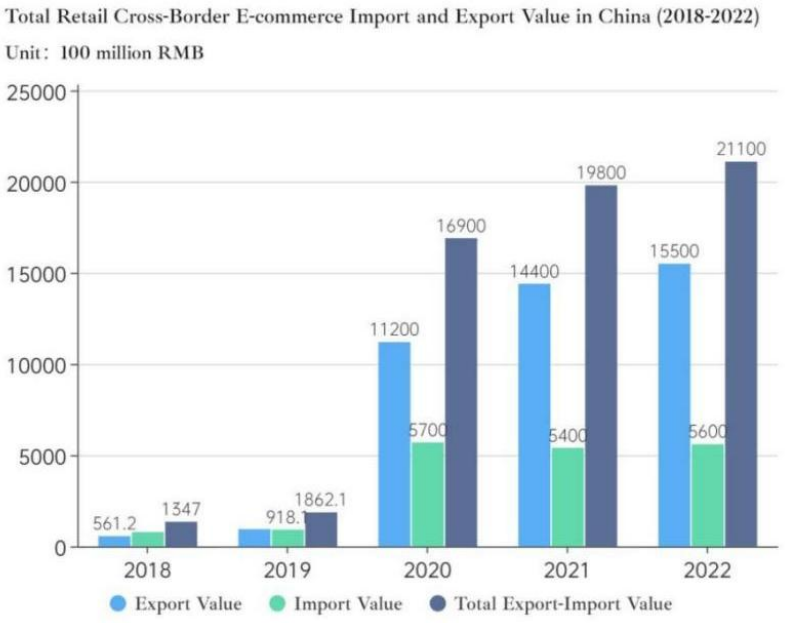

Figure 1.1 Total Retail CBEC Import and Export Value in China (2018-2022)
Data Source: MOFCO

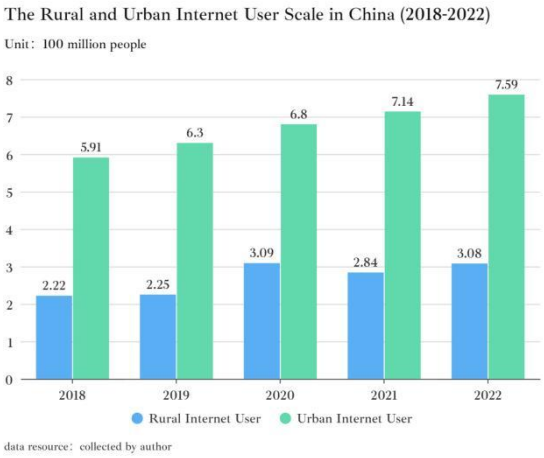

Figure 1.2 Rural and Urban Internet User Scale in China (2018-2022)

Data Source: CNNIC

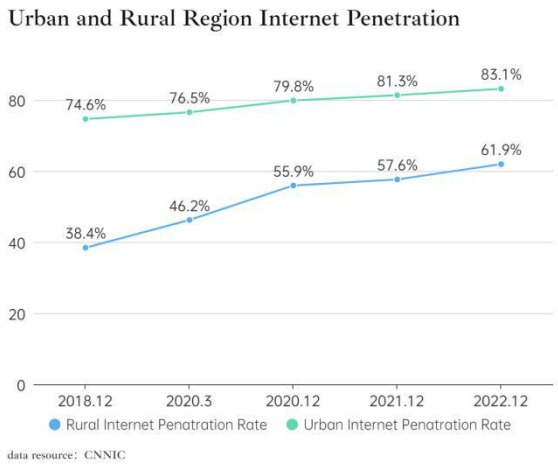

Figure 1.3 Urban and Rural Region Internet Penetration

To address poverty issues, the Chinese State Council's Poverty Alleviation Office incorporated "poverty alleviation through e-commerce" into the poverty reduction policy system in 2014 and officially implemented it as one of the "Top Ten Precision Poverty Alleviation Projects" since 2015. The combination of CBEC and rural economy provides possibilities for balanced urban-rural economic development.

The COVID-19 pandemic, which began at the end of 2019, has significantly affected the world economy. China's GDP decreased by 6.8% in the first quarter of 2020 and by 1.6% in the first half of the year, worsening economic imbalances and uncertainties, as reported by the National Bureau of Statistics of China. Amid the pandemic, the Chinese government has implemented a range of programs to boost family spending. Rural CBEC in China is encountering challenges as well as opportunities.

2) Challenges and Opportunities of Chinese CBEC in the COVID-19 Pandemic Period

At the end of 2019, the COVID-19 pandemic broke out in China, significantly influencing the global economy, and the origin of the virus remains controversial. Countries and regions have faced varying degrees of disruptions to cross-border trade at different stages. This is mainly manifested in supply chain disruptions and worsening international trade relations. Under the trend of economic globalization, the stagnation of trade partners' production has hindered the speed of supply chain integration, leading to a crisis of supply shortages in the CBEC industry. The pressure of economic downturn has exacerbated international conflicts, with trade protectionism on the rise, tariffs increasing, and import and export costs continuously rising. In addition, logistics transportation has been hindered, reducing consumer experience. Affected by the pandemic, land and sea transportation in various regions are subject to control, air flights have been significantly reduced, and customs inspection and quarantine procedures have become stricter, making it difficult for goods to be delivered to consumers on time, leading to a sharp decline in cross-border logistics efficiency. Goods such as agricultural products have higher requirements for cold chain logistics, and transportation time is directly proportional to product quality. Once transportation timeliness cannot be guaranteed, there is a risk of serious product quality loss, thereby affecting consumer shopping experience.

Challenges and opportunities coexist. On the one hand, consumers' demand for some product categories has expanded, such as food and beverage, personal care and health products, and the demand for agricultural products has also continued to expand. Pinduoduo, a domestic e-commerce giant, is good at integrating the resources of agricultural producers and consumers. It is an efficient sales channel for e-commerce of agricultural products. During the outbreak of the COVID-19 epidemic, the active users of the platform increased steadily. And there was a serious shortage of medical supplies, especially in China, where the shortage of medical supplies continued for a long time. Residents hoarded medical supplies through CBEC channels to meet their own needs caused by panic.

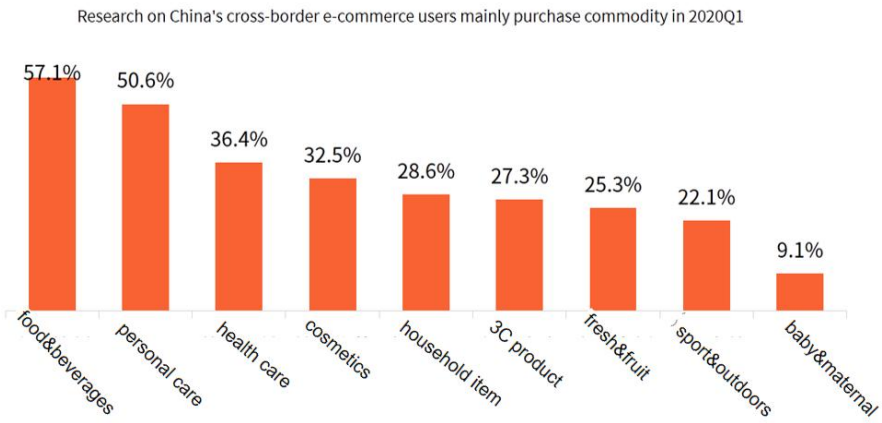

Figure 1.4 China's CBEC user's mainly purchase commodity in 2020Q1

Data Source: iiMedia, March, 2020

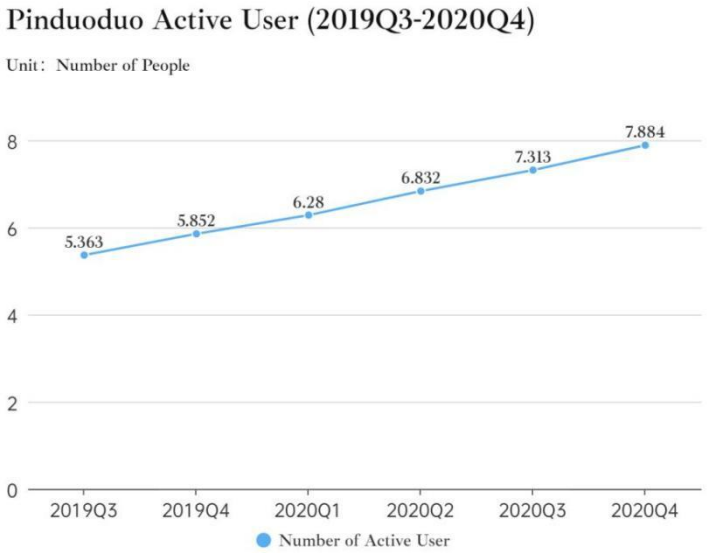

Figure 1.5 Active User on Pinduoduo (2019 Q3-2020 Q4)

Data Source: Pinduoduo Financial Report

According to data disclosed by iiMedia, during just January 24 to February 5, 2020, China imported 33 million masks, 3.854 million sets of protective clothing, and 620,000 goggles. Data released by the World Trade Organization shows that the total global trade in medical products reached 1.1597 trillion US dollars in 2020, an increase of 16.3%. During the pandemic, there was an explosive growth in people's demand for

medical and disease prevention products, making the import of such products a new direction for CBEC enterprises to overcome the heavy blow. On the other hand, there is an increase in user stickiness to CBEC platforms. During the pandemic, international flights were sharply reduced, and people were unable to travel across borders, thus turning to CBEC platforms to meet their demands for high-quality and diversified consumption. Consumer shopping habits have also changed, with more people adopting online shopping. Additionally, due to concerns about contact transactions during the pandemic, mobile payment applications have been rapidly and widely promoted. Consumers quickly shifted from cash to online payments, especially in CBEC transactions. Compared to traditional payment, mobile payment has improved efficiency, bringing convenience to people's lives. Although mobile payment still has some issues, such as inadequate credit systems and risks of user data misuse, the current trend is that mobile payment is gradually replacing cash on delivery and cross-border remittances, especially as third-party payment platforms provide guarantees for people's epidemic prevention measures, which also promotes the digital process of economic and social development, and has a far-reaching impact on consumption behavior.

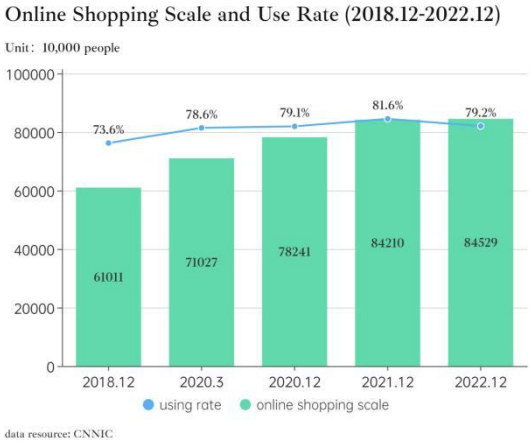

Figure 1.6 Online Payment User Scale and Use Rate (2018.12-2022.12)

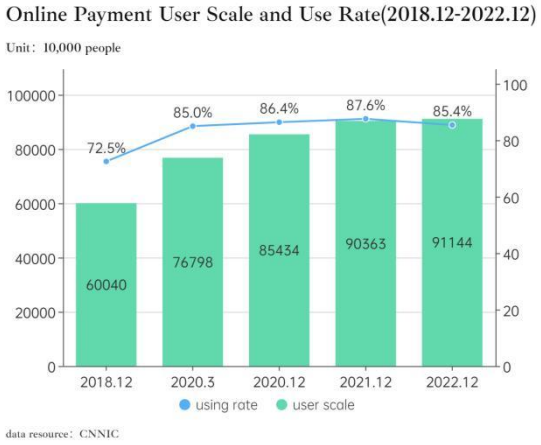

Figure 1.7 Online Shopping Scale and Use Rate (2018.12-2022.12)

Data Source: CNNIC

3）E-commerce alleviates the problem of poverty

Dongfeng village, Shaji town in Jiangsu Province is a famous rural area in China that has achieved poverty alleviation and prosperity through the development of e-commerce of furniture. In the early years, agriculture and waste recycling were the main sources of income for the village. In 2006, three young people in Dongfeng seized the business opportunity of the e-commerce and sold and assembled furniture online, which brought a lot of income. Since then, the villagers have followed and extended furniture related e-commerce to the whole town. The replication and imitation of villagers from 2006 to 2010 led to the rapid expansion of the furniture e-commerce industry in the region. From 2010 to 2015, the mode of Shaji formed a system, and has been promoted nationwide since then. In the five-year period from 2012 to 2017, Shaji town has achieved 492 households and 1596 people out of poverty through the e-commerce industry, accounting for half of the poverty-stricken households and population in the town, with remarkable results.

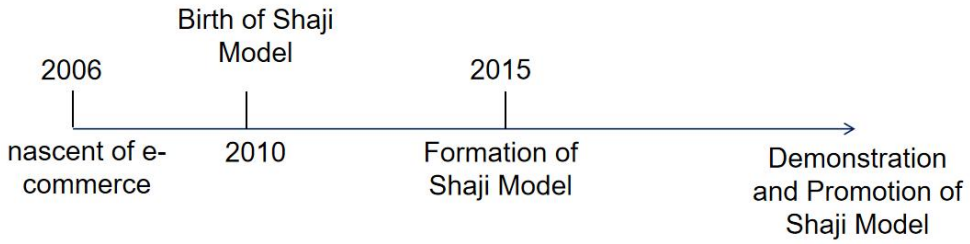

Figure 1.8 Timeline of Shaji Model

The poverty alleviation model of Dongfeng Village is to first drive local farmers to participate in e-commerce entrepreneurship through the demonstration effect of entrepreneurial pioneers, and then vigorously develop the characteristic industry of furniture online sales through farmers' spontaneous participation and government guidance. In order to enhance the added value and competitiveness of the products, the villagers improve the popularity and reputation of the products by creating a brand image with local features. At the same time, social media, short videos and other new media are used for marketing to attract more consumers' attention and purchase. The

government has played an important role in the poverty alleviation through e-commerce, and has created a good external environment for the development of e-commerce industry by providing policy support, strengthening publicity and guidance, and improving hardware facilities. In addition, the government has also promoted the establishment of e-commerce party branches and e-commerce featured sub branches to provide organizational protection and financial services for the development of e-commerce. After more than ten years of exploration and promotion, Dongfeng village has finally achieved good economic benefits and positive social benefits by developing furniture industry through e-commerce mode. The village has also formed a complete e-commerce chain by integrating resources such as upstream suppliers and downstream sales channels. This not only reduces operating costs, improves market competitiveness, but also promotes the development of related industries and the increase of employment opportunities.

From the perspective of economic benefits, on the one hand, the development of e-commerce has led to an increase in the sales of local characteristic products and directly improved the income level of farmers. Since 2008, the per capita disposable income of the whole village has been higher than that of the whole country, and the number of poor people has decreased significantly. On the other hand, the development of e-commerce industry has also driven the promotion of related industries, such as logistics and packaging, which has injected new vitality into the local economy. By 2020, Shaji have more than 16000 online stores, 1697 physical enterprises, 83 logistics and express delivery enterprises, and 35000 relevant employees, accounting for half of the permanent population of the town.

From the perspective of social benefits, the social benefits of the e-commerce poverty alleviation model in Dongfeng are reflected in many aspects, such as social culture and ecological environment. First of all, the development of e-commerce has changed the villagers' way of life and thinking, and enhanced their entrepreneurial and market awareness. Secondly, the model of poverty alleviation through e-commerce has also promoted the cultural inheritance and innovation in rural areas, and promoted the

prosperity and development of rural culture. Finally, the development of e-commerce industry has also led to the improvement of rural environment and ecological protection, providing sustainable development power for Rural Revitalization.

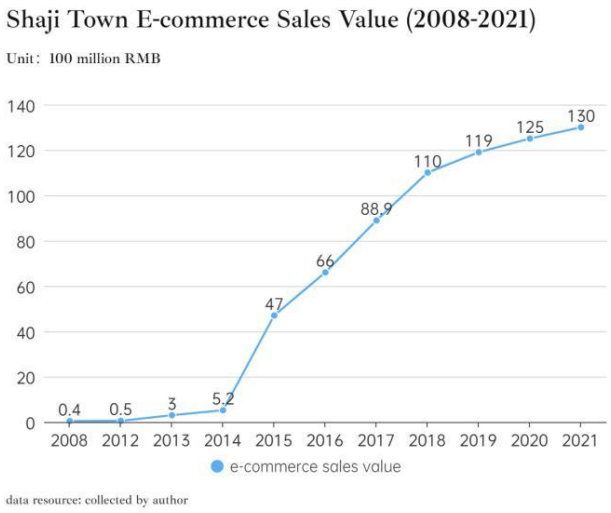

Figure 1.9 E-commerce Sales Value of Shaji Town (2008-2021)

Data Source: Shaji Government

Table 1.1 Socio Economic Statistics of Dongfeng Village, Shaji Town (2006-2010)

Socio Economic Statistics of Dongfeng Village, Shaji County, 2006-2010				
Year	Poor households	Poor Population	Disposable Income per Capita (RMB)	Disposable Income per Capita of Rural Resident Nationwide (RMB)
2006	unkown	unkown	2000	3587
2007	189	670	2549	4140
2008	110	420	4970	4761
2009	53	210	5850	5153
2010	22	76	6760	5919
Data from Neighborhood Committee of Dongfeng Village				

Data Source: Neighborhood Committee of Dongfeng Village

1.1.2 Research Significance

The research significance of this paper is reflected in several aspects: from a theoretical perspective,

1) it enriches the theoretical framework of CBEC and deepens the understanding of the development trends of rural e-commerce. Currently, there is relatively limited research on the development of CBEC in rural areas of China to achieve poverty alleviation goals, with most studies focusing on CBEC logistics and agricultural product e-commerce. Therefore, by conducting in-depth research on the challenges and opportunities of China's rural CBEC development in the post-pandemic era, this paper further enriches and improves the theoretical framework of CBEC, providing new ideas and directions for future poverty alleviation models in rural areas through CBEC. Additionally, it contributes to understanding the development trends of rural CBEC and provides theoretical support for its internal mechanisms.

2）It broadens the cross-disciplinary research between digital economy and rural economic development theories. This paper combines theories of the digital economy with models of rural e-commerce development, thereby promoting cross-disciplinary research in both fields.

From a practical perspective,

1）integrating international trade with e-commerce can effectively promote the export of products from rural areas, expand overseas markets, and enhance the international reputation of Chinese agricultural products.

2） It promotes rural economic development. This research helps to integrate rural e-commerce and poverty alleviation initiative deeply, by expanding sales

channels for farm households through CBEC platforms, increasing their income, and achieving sustainable development of industry.

3） This paper provides guidance for the government to formulate and adjust development policies for rural CBEC in the future. The challenges revealed in the study can help policy makers establish an early warning mechanism for risks, identify and respond to potential risks, and provide solutions to deal with unexpected factors in the future. It also has reference value for the development of CBEC in developing countries and regions. For enterprises, this paper stimulates motivation for technological innovation and application and assists in developing more accurate market positioning and marketing strategies.

4） Additionally, while China achieved the goal of poverty alleviation through industrialization by the end of 2020, the problem of poverty may arise again in the future. Therefore, this paper can guide rural areas to adjust the industrial structure according to the development requirements of CBEC, optimize the primary and processing links of rural characteristic products, and enhance market competitiveness. Moreover, it opens the way to solve the problem of unemployment and promote the local transformation and income increase of rural labor force. In the current era of changing economic structure, seizing opportunities is key to obtaining motivation, which is also the core significance of this paper.

1.2 Literature Review

1.2.1 Research on Rural CBEC

CBEC is increasingly recognized as a crucial component in the development of rural e-commerce. The COVID-19 pandemic has brought significant changes to the CBEC industry. Empirical research by Meng Fanfan (2017) [1] highlights how e-

commerce can promote rural foreign trade and facilitate the introduction of foreign resources to promote two-way development. Meanwhile, Shi Wei (2019) [2] advocates for CBEC of agricultural products to shorten the order cycle, increase profits for producers, and enhance enterprise competitiveness. However, a lack of timely logistics information can increase the risk of economic losses for consumers. [3] Lu Zhaoyang (2019) [4] have questioned the applicability of the theory that "good wine is not afraid of deep alleys" in the era of CBEC and emphasized the impact of geographical indication strategy on the value of agricultural products. Guojianfang (2019) [5] believes that CBEC should cultivate agricultural product brands, avoid homogeneous competition, and improve profits. Huang Haoyu (2019) [6] proposes that the combination of farmers' professional cooperatives and CBEC could promote agricultural modernization and the entry of products into overseas markets. Mary (2020) [7] and Costopoulou (2020) [8] both highlight the lack of awareness and negative perceptions towards e-commerce in rural areas, while also pointing out the potential for e-commerce to connect rural producers with larger markets. Shao (2020) [9] further explores the development of e-commerce in rural areas, proposing a specific model for Chinese rural areas. Song Fuying (2020) [10] believes that agricultural CBEC is the key way to promote agricultural development, especially in the context of oversupply of rural agricultural products being a long-term problem. Cai Jie (2021) [11] has conducted research that shows the scale of China's CBEC of agricultural products has expanded, but it faces risks such as information asymmetry, inconsistent quality standards, imperfect logistics supply chain, and international trade barriers. Wang Keyuan (2021) [12] has pointed out that the backward logistics technology has led to difficulties in the export of agricultural products and proposed that joint development of agricultural products and logistics is an effective way to overcome the development dilemma. Wang Yanling and Zhang Guangsheng (2021) [13] have discussed the impact of technology acceptance, perceived risk, and subjective experience on farmers' e-commerce entrepreneurial intention through empirical research. This study reveals the psychological and behavioral characteristics of farmers in the process of e-commerce entrepreneurship and provides an important perspective for understanding the internal driving force of rural CBEC development. Wei Jiachao and Yang Anyi (2021) [14]

point out that the COVID-19 pandemic has had significant impacts on the rural e-commerce economy, such as logistics disruption and market demand decline. However, it has also brought new development opportunities for the rural e-commerce economy, such as the expansion of online sales channels and the acceleration of digital transformation. Liu Yaping (2022) [15] focuses on the challenges posed by the digital economy to the development of CBEC in rural areas and proposes implementation paths to address these challenges and promote the healthy development of CBEC in rural areas. Derindağ (2022) [16] acknowledges the benefits of CBEC, including increased demand and innovation, while also recognizing the need to address challenges. Li Nan (2022) [17] analyzes the impact of the COVID-19 pandemic on import and export trade, which has reference value for understanding the impact of the epidemic on the global economy and trading system. In the post-pandemic era, rural CBEC, as an essential part of international trade, will also be affected by changes in the global economy and trade system.

Table 1.2 Rural CBEC-related Literature Point of View

Author	**Year**	**Main Points/Findings**
Meng Fanfan	2017	E-commerce facilitates rural foreign trade development and introduces foreign product resources, promoting mutual development in Jinzhai County.
Shi Wei	2019	Cross-border agriculture e-commerce can reduce order cycles, boost producer earnings, and boost company competitiveness.
Du Jing	2019	Warns of economic loss risks to consumers due to the inability to obtain timely logistics information.
Lu Zhaoyang	2019	In the age of CBEC, the assumption "good wine needs no bush" is questionable, because regional designation tactics affect agricultural product value.
Guo Jianfang	2019	Promotes CBEC to build agricultural product brands, avoid homogenization, and boost revenues.

Table 1.2 (Continued)

Author	Year	Main Points/Findings
Huang Haoyu	2019	Combining farmers' professional cooperatives with CBEC promote agricultural modernization and the entry of products into overseas markets.
Mary,T. Jenova and Costopoulou, Constantina	2020	both emphasize the lack of awareness and negative perceptions towards e-commerce in rural areas, while also pointing out the potential for e-commerce to connect rural producers with larger markets.
Shao, Changhong and Mengning Liu.	2020	further explore the development of e-commerce in rural areas, proposing a specific model for Chinese rural areas.
Song Fuying	2020	Rural overproduction of agricultural products is a long-term concern and that agricultural CBEC is a crucial approach to boost agricultural development.
Cai Jie	2021	Research shows China's CBEC in agricultural products is growing, but information asymmetry, variable quality standards, inefficient logistical supply chains, and international trade obstacles are dangers.
Wang Keyuan	2021	Outdated logistics technology limits agricultural product exports and proposes that agricultural products and logistics grow together as an efficient strategy to address development obstacles.
Wang Yanling, Zhang Guansheng	2021	Discusses the influence of farmers' acceptance of e-commerce technology, risk perception and personal experience on their entrepreneurial intention, and reveals the psychological and behavioral characteristics of farmers in e-commerce entrepreneurship.
Wei Jiachao, Yang Anyi	2021	The COVID-19 epidemic has caused great impact on the rural e-commerce economy, such as logistics obstruction and market demand decline. However, this has also brought new development opportunities for the rural e-commerce economy, such as the expansion of online sales channels and the acceleration of digital transformation.

Table 1.2 (Continued)

Author	Year	Main Points/Findings
Liu Yaping	2022	Focuses on the challenges brought by the digital economy to the development of rural CBEC, and puts forward the implementation path, in order to meet these challenges and promote the healthy development of rural CBEC.
Derindağ	2022	Underscores the benefits of CBEC, including increased demand and innovation, while also acknowledging the need to address challenges.
Li Nan	2022	The COVID-19 epidemic has had an important impact on import and export trade, especially the rural CBEC as an important part of international trade.

1.2.2 Research on Poverty Alleviation through E-commerce

Wak, Dong-Heon and Hemant K. Jain. (2015) [18] proposed that web and e-commerce enabled by easy access to internet on mobile devices have a great potential to reduce poverty by improving access to education, health, government, financial and other services. Lin Guangyi (2017) [19] conducted a comprehensive analysis of the significance of e-commerce in poverty reduction, both theoretically and practically. Additionally, the author highlighted the government's and enterprises' achievements in this area. Zhang Xiaheng (2018) [20] proposed a coordinated approach to the development of e-commerce in rural areas, emphasizing the need for technological and infrastructural support that aligns with industry, education, and poverty alleviation strategies. Cui Kai (2018) [21] used evolutionary economics to demonstrate the internal logic of rural e-commerce initiatives, emphasizing the importance of combining policy and market forces to drive success. Yan Qiang (2018) [22] developed a poverty alleviation model focused on e-commerce, led by the government and supported by the active participation of farmers and enterprises. Ye Hua and Dennis Wei (2019) [23] differentiated Taobao village into production and market types, highlighting the importance of government and ICT enterprise guidance, brand cultivation, and market

competition for success. From an industrial development perspective, Zhu Haibo and Nie Fengying (2020) [24] analyzed the logic and path for effective connection between poverty alleviation and rural revitalization in deep poverty-stricken areas and underscored the importance of industrial development. Wang Haiyan (2020) [25] analyzed the principle of information asymmetry from the perspective of information demand behavior and proposed countermeasures to avoid adverse competition. Zhang Xiaheng (2020) [26] studied the impact of the COVID-19 pandemic on CBEC and the industry's response, identifying key challenges and opportunities for rural CBEC in the context of the epidemic. Li Xiaoxia and Zhao Xiufeng (2020) [27] focused on the emerging e-commerce mode of live broadcasting to help farmers, analyzing its role in the integrated development of rural revitalization and online poverty alleviation. They found that live broadcasting improves the efficiency of sales of agricultural products, enhances brand influence, and provides new development ideas for rural CBEC. Chen Jin (2021) [28] empirically demonstrated the role of e-commerce in economically developed and underdeveloped rural areas, showing that the impact on industrial clusters was more significant. Peng Chao (2021) [29] concluded that rural e-commerce enhances the ability of low-income groups, but the income effect follows an inverted U-shaped curve. Zhao (2021) [30] studied the formation mechanism of Taobao village and stressed the importance of the entrepreneurial ecosystem. Gao Yang and Han Tianqi (2021)[31] studied the path of deep integration of poverty alleviation and Rural Revitalization in the post-epidemic era from the perspective of Community Supported Agriculture (CSA). It is pointed out that in the post-epidemic era, poverty alleviation work should pay more attention to the connection with rural revitalization, realizing the sustainable development of the rural economy through community support for agriculture and other modes. Lu Zhaoyang, Huang Xiaozhu, and Liao Shanshan (2022) [32] empirically studied the impact of e-commerce live broadcasting on rural relative poverty in the context of Rural Revitalization. They found that e-commerce live broadcasting can help alleviate relative poverty in rural areas by promoting the sales of agricultural products and increasing farmers' income. Yang Xiao and Xu Shanshan (2022) [33] believe that rural e-commerce poverty alleviation has played a positive role in promoting the transformation and upgrading of the rural economy and increasing

farmers' income, but it also faces challenges such as weak infrastructure and talent shortage. Lastly, Ye Chengzhi (2022) [34] deeply discussed the impact of live broadcasting of agricultural products on consumers' purchase intention in the post-epidemic era. Based on a study conducted at Zhejiang Normal University, this research analyzed the rise of live broadcasting of agricultural products in the context of epidemic prevention and control and how it affected consumers' purchasing decisions.

Table 1.3 Poverty Alleviation through E-commerce-related Literature Point of View

Author	**Year**	**Main Points/Findings**
Kwak, Dong-Heon and Hemant K. Jain	2015	Web and e-commerce enabled by easy access to internet on mobile devices have a great potential to reduce poverty by improving access to education, health, government, financial and other services.
Lin Guangyi	2017	E-commerce's poverty-relieving potential is examined theoretically and practically, including government and business successes.
Zhang Xiaheng	2018	Advocates for the coordinated development of e-commerce with industry, education, and poverty alleviation, leveraging technology and infrastructure for diversified development.
Cui Kai	2018	Utilizes evolutionary economics to demonstrate the intrinsic logic of rural e-commerce, emphasizing the combination of policy and market-driven factors.
Yan Qiang	2018	Constructs a precise e-commerce poverty alleviation model involving government leadership, enterprise participation, and active farmer involvement.
Ye Hua & DennisWei	2019	Organizes Taobao villages into production- and market-oriented types, emphasizing the need for autonomous brands and market rivalry and ICT company and government support.
Zhu Haibo, Nie Fengying	2020	From perspective of industrial development, analyzes the logic and path of the effective connection between poverty alleviation and Rural Revitalization in deep poverty-stricken areas, and emphasizes the importance of industrial development in poverty alleviation.

Table 1.3 (Continued)

Author	Year	Main Points/Findings
Wang Haiyan	2020	Analyzes information asymmetry principles from the perspective of information demand behavior, suggesting countermeasures to avoid adverse competition.
Zhang Xiaheng	2020	Studied the impact of the COVID-19 epidemic on CBEC and the response. He analyzed the impact and challenges of the epidemic on the CBEC industry and put forward targeted countermeasures. The study not only focuses on the overall development of CBEC industry, but also involves the special challenges and opportunities of rural CBEC in the context of the epidemic.
Li Xiaoxia, Zhao Xiufeng	2020	Claim that live broadcasting can improve the sales efficiency of agricultural products, enhance brand influence, and provide new development ideas for rural CBEC would be better supported by a reference. This would provide evidence to back up the significant assertions made in the claim.
Chen Jin	2021	Empirically demonstrates the role of e-commerce in economically developed and underdeveloped rural areas, with more significant impacts on industry clusters.
Peng Chao	2021	Rural e-commerce enhances the capacity of low-income groups, but income effects exhibit a U-shaped trend.
Zhao Y	2021	Studies the mechanism of Taobao villages formation, emphasizing importance of entrepreneurial ecosystems.
Gao Yang, Han Tianqi	2021	Examines the deep integration of poverty alleviation and rural revitalization from the perspective of Community Supported Agriculture (CSA) in the post-epidemic era. It suggests that in this era, poverty alleviation efforts should focus more on connecting with rural revitalization, and achieving sustainable development of the rural economy through community support for agriculture and other similar models.

Table 1.3 (Continued)

Author	Year	Main Points/Findings
Lu Zhaoyang, Huangxiao and Liao Shanshan	2022	Examine impact of e-commerce live broadcasting on reducing rural relative poverty in rural revitalization.
Yang Xiao, Xu Shanshan	2022	Poverty alleviation through e-commerce in rural regions has played a positive role in promoting the transformation and upgrading of rural economy and increasing farmers' income, but it also faces challenges such as weak infrastructure and talent shortage
Ye Zhicheng	2022	The rise of live broadcast of agricultural products in the context of epidemic prevention and control and how it affects consumers' purchase decisions were analyzed in detail.

1.2.3 Literature Review

In summary, in recent years, there has been relatively less research by domestic and foreign scholars on rural CBEC, while research on poverty alleviation through e-commerce is more extensive. The main research content of rural CBEC focuses on promoting the transformation and upgrading of Chinese agriculture through export-oriented CBEC models, thereby driving foreign trade growth. The main reason for the above differences is that rural e-commerce is still in the stage of exploration and refinement, and the government has continuously introduced and implemented poverty alleviation through e-commerce strategy since 2014. Hence, the disparity in research output indicates that the advancement of CBEC in rural China is still nascent and has not garnered much attention and advocacy on a national scale. However, due to the prolonged duration of the COVID-19 pandemic and its profound impact on the economy, both the pandemic and post-pandemic period are considered the "new

normal" for the global economy. Most scholars have focused on the development trends of CBEC nationwide, but there is a lack of in-depth analysis of rural geographical range.

This paper aims to figure out two questions. One is to study whether cross-border e-commerce has practical effect and significance in alleviating regional poverty and increasing income by clarifying the internal mechanism of poverty alleviation through e-commerce. Second, in the post pandemic era, what are the obstacles and opportunities for the development of cross-border e-commerce in rural areas, and promote the further development of cross-border e-commerce in rural areas under the coexistence of crisis and chances. Therefore, this paper holds contemporary relevance in the current economic landscape, offering a theoretical basis for future research endeavors.

1.3 Structure Arrangement and Method

1.3.1 Structure Arrangement

This paper primarily analyzes the developmental trend of rural CBEC in the post-pandemic era, and in conjunction with China's e-commerce poverty alleviation strategy, explores the formation mechanism of the e-commerce industry cluster in "Taobao villages." The objective of this article is to propose the feasibility of implementing CBEC models in rural China, and how to consolidate and enhance industrial competitiveness in the post-pandemic era, thereby achieving sustainable development in the CBEC industry and the economy of rural areas. This paper primarily consists of seven chapters.

Chapter 1 presents the research background and significance, providing an overview of relevant academic achievements and key perspectives both domestically and internationally, thereby offering theoretical support for this article.

Chapter 2 elucidates the concepts of CBEC and rural e-commerce, and elucidates correlation between CBEC and the digital economy.

Chapter 3 analyzes the development status and trends of CBEC in rural areas of China. The SWOT model is used to analyze the external strengths, weaknesses, opportunities and threats of the current research object, and to show the current development of the research object from a macro perspective.

Chapter 4 uses empirical analysis to study whether cross-border e-commerce has practical effects on regional economic development. And studies the experiments and practices of key stakeholders in the past, including the government, entrepreneurs, and farmers, in rural e-commerce projects.

Chapter 5 explores the development status of China's CBEC in the context of the COVID-19 pandemic from 2019 to 2022 by using PEST model. Subsequently, it focuses on rural geographies, analyzing the risks and opportunities posed by sudden public health events, primarily examining the activities of the government, enterprises, and farmers.

Chapter 6 proposes policy recommendations for the further development of rural CBEC in the post-pandemic era.

Chapter 7 elucidates the limitations present in the research and future directions for further exploration, with the aim of achieving deeper insights within the professional field.

1.3.2 Method

This paper employs a range of research methods, including literature research, empirical analysis, and interview research. On the basis of literature research and empirical analysis, combined with interviews, this paper figures out the problems existing in developing CBEC in rural areas of China in the post epidemic era, analyzes the reasons, and puts forward optimization countermeasures.

1) Literature Research

The literature research is employed to understand the background and theoretical basis of the research field and to identify entry points for the research content, while avoiding repeated work and ensuring the innovation and value of the research. This paper collects representative and cutting-edge research literature from scholars at home and abroad to form a systematic approach to the research subject. By reading the theory of CBEC, rural economy, e-commerce poverty alleviation, and practical cases, and combining data and information from authoritative institutions, industry research reports, and industry information, it analyzes the feasibility and challenges of promoting the development of CBEC in rural China.

2) Interview Research

The interview research method is used to explore the research topic in depth and to obtain the views, experiences, and feelings of different groups. By selecting four interviewees with different identities and backgrounds, including CBEC consumers, platform operators, industry experts, and local government officials, this paper designs three different types of interview outlines to focus on the industry expectations, forecasts, and suggestions of CBEC participants with different identities. Furthermore, this paper summarizes the main problems and challenges faced by CBEC in rural areas and points out the direction for policy recommendations in paper's final chapter.

3) Empirical Research

This paper believes that empirical research reveals the nature and laws of objective phenomena more objectively and scientifically, which is an in-depth test of theoretical construction and plays a role in promoting the theoretical basis. In data collection, it is found that due to the late development of CBEC in villages and towns, the relevant data can hardly be obtained. Therefore, it chooses to collect the relevant data of Xuzhou City, Jiangsu Province, a higher-level administrative unit where Shaji town is located. Through OLS regression, it tests the city's foreign trade and e-commerce model to promote the development of CBEC, and further consolidates that CBEC can bring positive results to regional poverty reduction.

1.4 Innovation and Limitation

1.4.1 Potential Innovations

The novelty of this paper lies in the integration of traditional rural poverty alleviation through e-commerce with CBEC. By examining the developmental status of CBEC during and after the COVID-19 pandemic, as well as the issues exposed in unpredictable environments, an alternative model for poverty alleviation is proposed: expanding the export of rural specialty products, broadening their overseas consumer markets, increasing the income of rural residents, and driving economic growth in rural areas. Currently, most scholarly research focuses on achieving poverty reduction by utilizing domestic e-commerce and the growth orientation of CBEC, with fewer scholars proposing the integration of CBEC with poverty alleviation. Furthermore, there is a lack of in-depth academic research on the transformation and sustainable development of CBEC under the "new normal" background. Therefore, this paper has promotability and assist rural areas in better addressing crises, exploring opportunities, and sustaining sustainable development trends in the face of future unforeseen circumstances. Additionally, the theoretical framework and empirical analysis in this paper can provide reference value for underdeveloped regions to achieve poverty alleviation by utilizing CBEC.

1.4.2 Research Limitations

Although this paper analyzes and discusses the stability of rural CBEC development in the post-pandemic era in an all-inclusive manner, there are still some limitations:

1) Insufficient Research on Regional Differences

This paper mainly focuses on overall trends and general recommendations, but does not deeply investigate the development of rural CBEC in different regions of China and its differences. Factors such as regional development level, resource endowment, and policy support may have different effects on the development of the CBEC industry chain in rural areas. Therefore, it is necessary to further explore the impact of regional differences on industry development.

2) Inadequate Investigation into Technological Innovation and its Implementation

The report lacks a detailed discussion on the technology innovation and implementation in rural CBEC, although mentioning intelligent logistics and other technologies. The advancement of technologies like artificial intelligence, big data, and blockchain in rural CBEC could present both opportunities and obstacles. Thus, it is essential to carry out thorough research on technical innovation and its implementation.

3) Insufficient Research on Environmental Impact and Sustainable Development

This paper does not fully explore the environmental impact of the development of rural CBEC. With the expansion of the scale of rural CBEC, it may have certain impacts

on resource consumption, ecological environment, etc. Therefore, it is crucial to carry out extensive research on its environmental impact and sustainability.

In future research, efforts should be made to address the above limitations, delve into various aspects of rural CBEC development, and offer extensive theoretical and practical assistance to promote the industry's healthy growth.

CHAPTER 2

Concepts and Theoretical Basis

2.1 CBEC Concept

Cross-border e-commerce refers to the integration of international trade and e-commerce, where internet platforms and mobile payments are used to facilitate product transactions and settlements between sellers and consumers in different countries or regions. The goods are then transported to consumers through cross-border logistics. CBEC is driven by digital technology and diverse consumer demand, and it has become an important engine for the growth of today's global digital economy.

There are two types of CBEC: import CBEC and export CBEC. Export CBEC dominates China's e-commerce market, with import representing a relatively small share. Based on trade pattern, it can be divided into B2B and B2C modes. B2B refers to CBEC trade activities between enterprises, and B2C refers to enterprises selling products or services to consumers. China's CBEC is currently dominated by B2B, accounting for 75.6% in 2022 and 73.9% in the first half of 2023 according to the report by Foresight Industry Research Institute. However, the proportion of B2C has increased year by year.

CBEC is paperless, anonymous, global, and characterized by small batch and multi-batch transactions. It relies on digital technologies like big data, internet of thing, artificial intelligence, blockchain, and metaverse to promote its innovative development. The whole transaction process is paperless, which reduces transaction costs and improves efficiency. Anonymity is reflected in the fact that CBEC transactions often involve different countries and regions, making it difficult for platforms to obtain accurate information about participants. On the one hand, it protects the privacy of traders, but on the other hand, it increases the risk of transactions. CBEC has broken

through the restrictions of time and space, allowing buyers and sellers to complete transactions through a third-party platform, thus expanding the sales channels of goods and promoting the circulation of goods around the world. Compared with traditional foreign trade, CBEC is characterized by smaller but more frequent purchases of goods, which reduces the storage pressure of sellers and meets the diversified consumption needs of buyers.

2.2 Rural E-commerce Development Theory

E-commerce activities are a modern economic model that blends traditional trade with the internet, using the support of technical services to create a third-party trading platform. The main objective is to reduce transaction costs between buyers and sellers, allowing for direct online information exchange between trading entities, ultimately leading to a transaction.

Rural area refers to the area outside the urban built-up area, which has natural, social and economic characteristics, including villages and towns, and plays the functions of production, life, ecology and culture. [35]

Rural e-commerce refers to transaction where buyers and sellers use internet platforms to sell rural agricultural products, handicrafts, and other rural characteristic products. This model uses commodity informatization as its technical core and leverages information and communication technology to upgrade and digitally connect the production, management, decision-making, and other aspects of products. The internet platform serves as the transaction carrier, providing data analysis, marketing, and promotion services for the seller and offering product traceability, mobile payment, intelligent recommendation, and other services for the buyer. Rural e-commerce combines traditional rural characteristic product sales with modern digital technology.

Rural characteristic products are the foundation and supply guarantee for the development of e-commerce in rural areas. Currently, agricultural products are the primary trading products. The internet platform allows these products to break through geographic barriers, achieving nationwide and even global product circulation. Therefore, rural e-commerce provides expanded market and sales channels for rural characteristic products, helping farmers achieve increased income and prosperity.

Rural e-commerce is a crucial component of the combination of the digital economy and the rural economic system. It is also a significant means of addressing the economic development gap in rural areas. Against the backdrop of rapid digital technology development, rural e-commerce has created new development opportunities in rural areas. It has promoted the digitization of the rural industrial structure, injecting new energy into agricultural production. [36]

2.3 CBEC and Digital Economy Theory

The digital economy represents a novel economic paradigm grounded in digital and information communication technologies. It leverages digitized modes of production, transactions, and distribution to propel the transformation and advancement of economic activities. E-commerce constitutes a subset within the domain of the digital economy. Digital technologies have pervaded various sectors, driving global economic transformation and advancement. The era of digital economy fosters increased opportunities for innovation while intensifying competition among enterprises. The acceleration of innovation and competition is poised to drive economic growth.[37] Digital economics relies on technological innovation as driving force. The widespread adoption and innovation of digital technologies are accelerating globally, facilitating the global movement of resources such as information, capital, goods, and labor.[38] Digital technology have decreased the expenses related to sharing information and conducting transactions.

CBEC, reliant on digital technology innovation, emerges as a result of effective connections facilitated by platforms in key aspects of goods circulation. It stands as a testament to how digital technology innovation promotes the transformation and upgrading of foreign trade. With data as its core asset and platform services as its technical medium, CBEC exhibits characteristics of mutual benefit, enabling value creation through the connection of various stakeholders (suppliers, consumers, partners, etc.). [39]

CBEC and the digital economy are interrelated, mutually reinforcing, and co-developing. CBEC platforms leverage digital technology upgrading to connect buyers and sellers from different countries and regions, facilitating the circulation of goods and information globally and driving the digitization and facilitation of global trade. Particularly, advancements in internet and mobile communication technologies, such as data analysis, logistics tracking, product traceability, and mobile payment, provide robust technical support for platforms. The development of CBEC expands the development space and broadens application scenarios for the digital economy, providing global markets and channels for digital economy products and services. This facilitates the international expansion of digital economy products and services, thereby broadening the boundaries and impact of the digital economy. To adapt to the competition and demands of CBEC, enterprises accelerate digital transformation and upgrading, reducing operational costs and enhancing efficiency through optimized supply chain management, innovative marketing methods, and improved logistics transportation levels, further driving the development of the digital economy.

CHAPTER 3

Current Development Status of Rural CBEC in China

3.1 Current Status of Rural CBEC in China

According to data from the National Bureau of Statistics, the urban residents' per capita consumption expenditure was 42,359 RMB in 2019, with a year-on-year growth of 5%, while rural residents' per capita consumption expenditure was 16,021 RMB, with a growth of 6.2%. Similarly, urban households' per capita disposable income was 43,834 RMB, with a growth of 1.2%, while rural households' per capita disposable income was 17,131 RMB, with a growth of 3.8%. From the data, it can be observed that in recent years, the growth rates of per capita consumption expenditure and disposable income in rural areas have been faster than those in urban areas.

The underserved markets in rural areas is showing positive momentum in the digital economy. With the expansion of internet infrastructure and improved coverage, rural residents can better understand and utilize the internet. Between 2019 and 2022, internet retail sales of agricultural products rose from 416.86 billion RMB to 530 billion RMB. The growth rate of agricultural products e-commerce in rural areas surpasses that in metropolitan ones. In 2019, the Taobao villages were present in 25 provinces. By 2022, this number had expanded to 28 provinces, encompassing a total of 7,780 villages. The internet buying market in rural areas is growing, and the potential of rural e-commerce is being realized.

3.1.1 Current Development Status of Rural CBEC - Using SWOT model

According to the known statistical data, China's online retail sales in rural areas have continued to grow in the past five years, especially from 2020 to 2021. Under the background of the COVID-19, rural e-commerce shows an optimistic trend. The enhancement of rural consumers' buying ability indicates a shift in their consumption mindset and understanding, creating ample opportunities for the growth of CBEC in rural regions. In 2020, the General Administration of Customs reported that the total import and export value of cross-border agricultural product e-commerce was US$6.34 billion. This included US$6.18 billion in imports and US$160 million in exports, resulting in a notable trade deficit.

However, compared to urban regions, the growth speed in rural areas is slower, and the income of the rural population is generally lower. Therefore, it is an urgent need to increase rural residents' income and promote rural economy. Although extreme poverty has been alleviated, relative poverty issues still exist, and the rural population are facing the risk of returning to poverty. This section uses the SWOT model to analyze the strengths, weaknesses, opportunities and challenges of the development of CBEC in rural areas, in order to clearly identify and understand the internal and external factors.

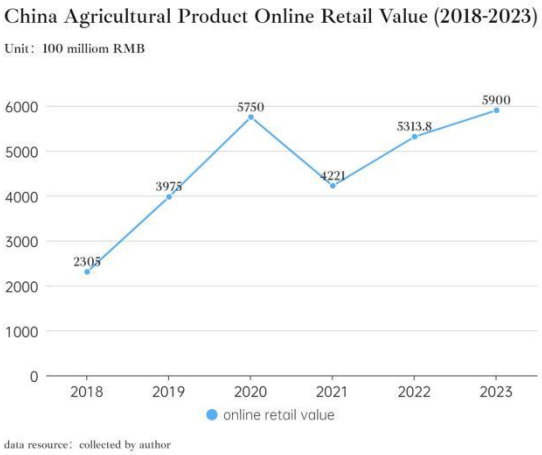

Figure 3.1 2018-2023 China Agricultural Product Online Retail Value

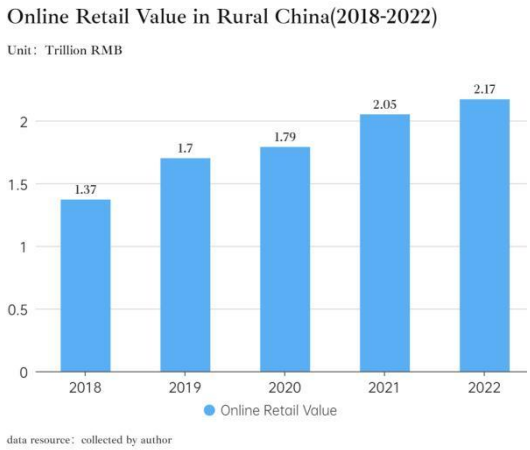

Figure 3.2 2018-2022 Online Retail Value in Rural China

Data Source: General Administration of Customs, and China Bureau of Statistics

1) Strength

1.1) Policy Support

The government's departments have adopted a variety of supportive measures to enhance the development opportunities of CBEC in rural areas. In September 2020, the People's Government of Hunan Province released the "Implementation Plan for the China (Xiangtan) CBEC Comprehensive Pilot Zone" and the "Implementation Plan for the China (Chenzhou) CBEC Comprehensive Pilot Zone." The goal is to establish outstanding businesses and renowned brands using the CBEC model, and enhance the close integration and advancement of CBEC and rural e-commerce. The State Council Office's 2022 directive, "Opinions on Further Unleashing Consumption Potential and Promoting Sustainable Consumption Recovery," mandates that e-commerce platforms and modern service enterprises expand their services to rural areas. Additionally, it emphasizes the necessity to enhance service standards in the realm of CBEC. The Chinese government has set up almost 170 comprehensive pilot zones for CBEC across

31 provinces in recent years. This initiative has boosted the development of CBEC clusters, enhanced the industrial chain, and streamlined import and export procedures, leading to increased customs clearance efficiency and reduced operating costs for businesses.

1.2) Abundant Resource

China's rural area is vast. Due to its different geographical environment and climate conditions, there are rich and diverse categories of agricultural products, providing sufficient supply for CBEC. From grain to vegetables, animal husbandry to aquatic products, these agricultural products are natural pollution-free, green and healthy, so they can meet the high pursuit of food quality of overseas consumers. Moreover, the cultural derivatives of China's 56 ethnic groups have their own distinctive characteristics, and handicrafts with cultural characteristics and details can meet the diversified pursuit of overseas consumers for artworks. Therefore, the rich agricultural products and handicrafts with distinctive national characteristics provide a stable supply chain guarantee for the development of CBEC in rural areas. Secondly, compared with developed countries, China's rural labor costs are lower. They are not only producers but also service providers, which can maintain cost advantages in processing, packaging and transportation.

2) Weakness

2.1) Insufficient Infrastructure

The infrastructure construction in rural areas of China lags behind, especially in transportation, logistics and communications, and there is a big gap with the development speed of CBEC. For cost reasons, the cold chain logistics equipment for the transportation and storage of agricultural products has not been widely used in rural areas. The level of logistics informatization is low, and the existing level of rural

informatization is not enough to promote the sustainable development of rural digital economy and CBEC trade. [15]

2.2) Shortage of Skilled Talents

The shortage of e-commerce talents in rural areas is also the result of the relatively backward of economy in rural areas. In particular, there is a serious shortage of talents with e-commerce operation experience and skills. Due to the limited educational resources in rural regions, the educational attainment level of the residents in the area is generally low, and the CBEC is an emerging model, rural residents have little understanding and contact, and lack of awareness of this trade model. Secondly, the quality and ability of existing talents are insufficient. Most of the personnel engaged in the development of CBEC in rural areas lack professional knowledge, practical experience and foreign language skills. There are obstacles in communicating with overseas customers, and it is difficult to effectively respond to market changes and competitive challenges. In addition, CBEC has more prominent requirements on the practical ability of talents. Although some universities have set up CBEC professional training, most of them highlight the acquisition of theoretical knowledge but lack of attention to practical skills, so even the talents cultivated by universities do not meet the actual needs of industry development.

3) Opportunities

3.1) Increased Market Needs

With the global shift towards consumption concept of CBEC, the demand for agricultural products has evolved from basic necessities to high-quality goods, and the demand for handicrafts has changed from diversification to personalization. The escalating demand of overseas consumers has expanded the market scale of rural CBEC, providing more business opportunities and broader growth space for practitioners. At

the same time, consumers' diversified, quality and personalized demand has promoted the pace of CBEC branding. Enterprises have improved consumers' brand perception and loyalty by improving service quality, optimizing and upgrading the industrial chain, and improving product quality. This provides more opportunities for rural specialty to go to overseas, and can also promote the internationalization process of branding of products with Chinese characteristics.

3.2) Developed Technology Innovation

Although the CBEC model starts late in rural areas of China, digital technology innovation has brought unprecedented opportunities to rural CBEC. At present, the most widely used technology includes big data, which helps enterprises achieve targeted marketing and personalized services through mass data mining, analysis and prediction. Artificial intelligence technologies such as intelligent customer service, AI generated streamer, and virtual reality scene construction have improved consumers' shopping experience and conversion rate. The interactive development of the Internet of things and blockchain makes it possible for the logistics transportation real-time tracking and product traceability. The decentralized transaction based on blockchain prevents data from being tampered with and disclosed, and improves the security of the transaction. In the era of globalization, actively embrace and promote digital technology innovation, and the development of CBEC trade model in rural areas can further usher in a broader growth prospect.

4) Threats

4.1) International Competitive Pressure

In recent years, CBEC platforms is booming like bamboos after a spring rain, increasing the intensity of competition in the market. Moreover, the giants platforms such as Amazon and eBay have advanced technology and high-quality services, which

are difficult to shake their international status. Secondly, changes in international trade policies at any time also have an impact on CBEC in rural China. Differences in trade policies, tariff barriers and the signing of trade agreements between different countries and regions may have an impact on the import and export trade of rural CBEC. In particular, the trade restriction measures implemented by some countries to protect their domestic markets may make China's rural CBEC face greater challenges in overseas markets. In order to cope with the pressure of international competition, practitioners need to invest more time and economic costs in product development, marketing optimization, brand building, which will squeeze the profit of enterprises in the short term. Therefore, enterprises need to pay attention to market dynamics and policy changes at any time, and adjust business strategies in time to deal with potential risks.

4.2) Law and Regulation Risks

The intellectual property issues involved in CBEC have become increasingly prominent. At present, rural CBEC practitioners pay less attention to laws and regulations. Some platforms sell goods that infringe others' patents, trademarks and copyrights, which will lead to infringement disputes and legal risks. For example, the appearance patent infringement case of pop Keychain's decompressed key chain, and the appearance patent infringement case of Peleg design's penguin egg cooker. These cases show that some goods on CBEC platforms may have designs similar to authorized appearance patents, thus infringing the patent rights of others. In addition, customs legal compliance is also an aspect that enterprises need to pay attention to. CBEC involves customs procedures, import and export taxes and other issues. Enterprises need to deeply understand the customs regulations of the target market, ensure the compliance of goods, reasonably declare the value of goods and pay corresponding taxes to avoid penalties and losses caused by violation of customs regulations. The risk of consumer protection is also an important issue faced by CBEC. Issues such as fake sales and inadequate after-sales service may lead to consumer complaints and legal disputes. Therefore, enterprises need to strengthen product quality control and after-sales service system construction to protect the legitimate rights and interests of consumers.

SWOT Matrix of Development Status of CBEC in Rural China	
Strengths	Weakness
1. Policy support 2. Abandunt resource	1. Weak infrastructure 2. a lack of skilled talents
Opportunities	Threats
1. Increased market demands 2. Developed technology innovation	1. International competition pressure 2. Law and regulation risks

Figure 3.3 SWOT Matrix of Development Status of CBEC in Rural China

3.1.2 The Role of CBEC in Rural Economy

1) Broadening Sales Channels for Rural Products and Facilitating Indigenous Brand Cultivation

CBEC trade exhibits global characteristics, with trading entities originating from different countries and regions. Therefore, the development of CBEC can help circulate rural products such as agricultural products and handicrafts with distinctive rural cultural characteristics in overseas markets, breaking through the geographical limitations of traditional domestic trade models and expanding sales markets. Leveraging continuously improving digital technology, platforms provide robust support for cross-border goods trading. Currently, big data technology enables consumer profiling to precisely capture the consumption demands of target markets. Artificial intelligence makes digital marketing more personalized and anthropomorphic, while generative AI technology autonomously generates market research and analysis through massive datasets and continuous training. The blessing of digital technology

plays a crucial role in rapidly expanding the visibility and influence of rural products in overseas markets. Prioritizing brand cultivation in branding layout is a focal point for practitioners. The value of a brand lies in the fact that brand awareness can help sellers reduce traffic and costs, and customer trust in the brand can shorten the purchase decision-making process, thereby improving conversion and repurchase rates. [5] Products have a crucial role in promoting the sustainable growth of CBEC. Various countries and areas have distinct import product inspection criteria. Agriculturally advanced Western countries, in particular, maintain stringent quality requirements for imported agricultural products. Sellers encounter a variety of consumption needs from international consumers. The CBEC model can enhance practitioners' understanding of brand development for rural specialty items and bolster the establishment of regional branding.

2) Simplifying Transaction Procedures and Reducing Transaction Costs

The transaction process of traditional foreign trade is cumbersome, and the import and export processes are time-consuming, resulting in high product transaction costs. In comparison, CBEC features small quantities and multiple batches, with easier customs clearance and shorter logistics transportation time, meeting the increasingly growing consumption demands of consumers. The growth of international e-commerce is directly linked to the utilization of the internet and progress in information technology. Some major international e-commerce platforms have integrated product traceability by using internet of things and blockchain technology. This enables overseas customers to access information about the production timeline, location, and shipping progress of items through the platforms. This showcases the significant impact of digital technology advancements in improving consumer shopping experiences. CBEC platforms can consolidate data and enhance supply chain efficiency. Rural agricultural products are converted into digital format at different points of transaction, such as consumer inquiries, orders, and transportation by logistics companies, leading to a significant decrease in information search costs and transaction expenses. Furthermore, consumers and sellers can communicate and exchange directly through CBEC platforms,

enhancing resource circulation efficiency, strengthening economic relationships, increasing transaction transparency, and reducing circulation costs significantly.

3) Increasing Rural Employment and Promoting Rural Economic Development

The growth of CBEC exhibits a coupling effect. Overseas markets often have higher quality requirements for imported agricultural products, which promotes the increase of agricultural product added value. This requires product deep processing, improved packaging, and marketing strategies. At the same time, the increase in product added value will broaden the consumption demand in overseas markets, thereby increasing income of rural practitioners. As governments and enterprises continue to improve e-commerce infrastructure, there is an increasing need for labor to perform a series of supporting services, such as warehouse managers, logistics distributors, platform operations specialists, product processing, and packaging worker, among others. This motivates more rural residents to participate in CBEC, increasing rural employment in a long run. It even attracts high-quality talent, such as returning college students and young entrepreneurs, to rural areas to jointly promote the revitalization of rural areas through CBEC. The related occupational skill requirements are relatively low, and the difficulty of practical operation is low, which brings possibilities for more employment opportunities, reduces the number of unemployed people, and accelerates the efficiency of rural poverty alleviation work. [1] The inclusive and platform attributes reduce the trade participation threshold for vulnerable rural populations, realizing the value creation of such populations, and providing a direction for rural residents to increase income and become prosperous by facing global consumers through internet platforms.

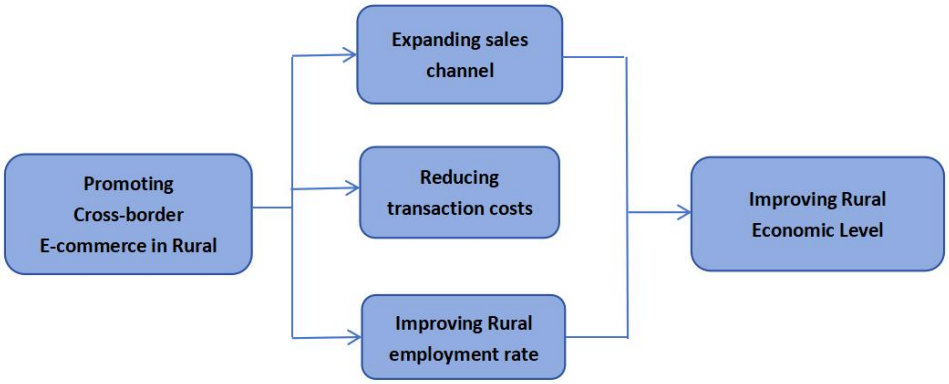

Figure 3.4 Mechanism of CBEC Promoting Rural Economy

3.1.3 Characteristics of Rural CBEC

1) Highlighted Industrial Agglomeration Effect

There exists a mutually dependent and mutually reinforcing relationship between the development of rural e-commerce and rural economy in China. [28] CBEC initially developed in the eastern coastal regions in China. As rural residents gain higher incomes through CBEC, more people are attracted to participate, leading to the emergence and increasing prominence of rural industrial agglomeration phenomena. Rural industrial agglomeration is an important concept in modern rural economic development. For example, in 2014, Alibaba announced a project worth tens of billions to establish service centres at the county and village levels, in order to connect villages with their e-commerce platforms. [40] According to Alibaba's report, since its expansion over the past 11 years, the Taobao Village project has surpassed 5,000 by 2020. The initial stage of development of rural CBEC and the emergence of industrial clusters are driven by changes in income, which have led rural residents to actively learn and adopt new technologies, as the affordable imitation costs incentivize their participation.

2) Regional Development Inequality

So far, the development level of rural CBEC in China decreases from east to southwest. The eastern regions are more advanced in terms of policy and infrastructure advancement for CBEC than the central and western regions. CBEC in the eastern coastal areas is currently experiencing digital transformation and upgrading, whilst the central and western regions are still in developing. In 2022, approximately 170 CBEC comprehensive pilot zones sanctioned by the State Council indicate that eastern coastal provinces like Guangdong, Zhejiang, and Shandong have the biggest number of pilot zones in plan, stronger economic foundations, and more extensive public amenities. Conversely, western interior regions like Ningxia Hui Autonomous Region and Xinjiang Uygur Autonomous Region have a lower number of pilot zones. The economic base of these areas is largely underdeveloped, while infrastructure is consistently being upgraded. Policy orientation is impacted by regional geographical location and economic base, resulting in variations in building planning and layout of pilot zones. The distribution of pilot zones has grown over time from the eastern areas to the middle and western regions, starting from the first batch in 2015 to the present seventh batch. The rise of CBEC in urban and rural areas of China is moving from economically developed coastal districts to economically underdeveloped central and western regions, indicating a nationwide growth trend in terms of time and geography. The regional inequality issue can be explained by inequalities in sustainable supply of economic systems in relation to the coupling and coordination link between regional economic systems and the development of CBEC.[41]

Figure 3.5 2018-2022 Rural Online Retail in District

Data Source: ASKCI

3.1.4 Challenges Faced by Rural CBEC

The paper believes that interviews can provide a more comprehensive understanding of a topic, from different angles and levels. By doing so, it can explore the practical value of theoretical research and achieve the combination of theory and practice. Therefore, it conducted one-to-one interviews with specific target objects. The interviewees include an operator in CBEC company in a town in Sichuan, an expert in the CBEC industry, a government official, and consumer. They represent different roles in the CBEC field, including practitioners, researchers, managers, and consumers. The interviews not only discuss the current situation of CBEC in rural areas but also analyze the challenges faced in their development.

1) Interview Participants

To ensure that the interview would be of high quality and representative, the author selects four respondents with diverse backgrounds and industrial experience. The selection criteria were based on finding individuals who represent CBEC enterprise practitioner, consumer, academic researcher with rich experience in the e-commerce industry, and government official who is involved in the promotion of rural e-commerce. All four respondents have extensive work experience and comprehensive understanding and in-depth insights into the CBEC industry. The author has accumulated resources during the academic research career, and industry professional recommended the respondents. Although the research sample is limited, based on literature reviews and existing researches, the four interviewers are highly relevant to the research questions and assumptions in the paper. Therefore, the author believes that this number is sufficient to support the research questions and assumptions. For more details on the four respondents, please refer to the table below.

Interviewee Details

Interviewee	**Identity**	**Work Background**	**Interview Date**
Ms. Bai	CBEC operator	employed in a CBEC Enterprise	Sep-23
Ms. Zhang	CBEC consumer	employed in a Foreign Enterprise	Sep-23
Dr. Yang	e-commerce industry expert	university professor	Oct-23
Mr. Lei	government official	member of the government rural revitalization working group	Oct-23

Ms. Bai has six years of experience in the CBEC industry. She currently works for a company that collaborates with the government and established a CBEC company targeting Southeast Asian countries in a town in Sichuan Province in 2018. The

company primarily sells Sichuan specialty agricultural products. Her main responsibilities include supply chain management, product selection, and advertising.

Ms. Zhang is a Chinese digital nomad who has been residing in Thailand for five years. She has extensive experience with local e-commerce and CBEC shopping overseas.

Dr. Yang is a professor at a university in China, specializing in digital economy and smart tourism. He has profound research and insights in the field of e-commerce.

Mr. Lei works for the government in a town in Sichuan Province. He is mainly responsible for rural revitalization and regional industrial development. He is involved in government-led poverty alleviation through e-commerce projects and has extensive grassroots work experience.

2) Interview Method

The interviews were conducted through one-on-one formal sessions with the interviewees, both online and offline, with each session lasting approximately one hour. Prior to the commencement of the interviews, an electronic outline of the interview content was provided to each participant. During the interviews, communication and exchange were carried out sequentially based on the main questions outlined, and discussions delved into relevant topics arising during the interviews.

3) Interview Content

3.1) Interview Content Outline

The interview content was categorized into three types of outlines tailored for different interviewees: one for consumers, one for experts and government officials, and

one for CBEC company operator. The interview content includes their views on the development trends of CBEC in rural China and the challenges encountered. As the study primarily focuses on pain points, the key issues were summarized accordingly. The specific interview outlines are as follows:

CBEC Platform Operator Interview Outline

No.	Question
1	What is your biggest challenge in operating rural CBEC? How do you overcome these challenges?
2	In terms of brand building, what challenges do you think rural CBEC faces?
3	Do you agree that rural CBEC has weak brand awareness? If so, how do you propose strengthening brand building?
4	How do you view the impact of information asymmetry on rural CBEC? Have you taken any measures to address this issue?
5	What is your perspective on the market potential of rural CBEC? How do you foresee the development of this market in the coming years?
6	Do you feel that the government has provided sufficient support for the development of rural CBEC? In which areas do you wish the government to provide more support?

Consumer Interview Outline

No.	Question
1	When purchasing agricultural products through CBEC platform, do you prioritize price or quality? How do you balance price and quality?
2	What impact do you think CBEC of agricultural products has on rural economic and social development? Are you willing to continue buying agricultural products on this platform?
3	When choosing a CBEC platform for agricultural products, what factors do you value more? Are you influenced by weak brand building awareness?
4	Are you satisfied with the after-sales service of CBEC for agricultural products? Have you ever encountered poor after-sales service? If so, how did you resolve it?
5	Are you familiar with information asymmetry? Have you encountered information asymmetry issues when purchasing agricultural products through CBEC? How do you address them?
6	What are your expectations and suggestions for the development of rural CBEC?

Expert and Government Official Interview Outline

No.	Question
1	What role do you think the government plays in promoting the development of rural CBEC?
2	In your opinion, what are the future development directions of CBEC for agricultural products? Do you have any suggestions or predictions?
3	Do you believe that CBEC of agricultural products helps increase the added value and international competitiveness of agricultural products? Why?
4	What is your perspective on the development prospects of rural CBEC? What do you think are the main challenges it may face in the coming years?
5	What policy measures do you think the government should take to address issues such as low logistics efficiency and weak brand building awareness?
6	What are your expectations for the future development of rural CBEC?

4) Summary of Interview Content

4.1) Summary of Platform Operators' Interviews

In the interviews with Ms. Bai, we discussed the difficulties and advantages that come with conducting e-commerce operations across borders in rural areas. Operators

reflected that low logistics efficiency is a major bottleneck hindering the development of rural CBEC. Due to the remote geographical locations and inadequate infrastructure in rural areas, it is difficult to ensure the quality of agricultural products during transportation, leading to compromised prices and competitiveness. Additionally, weak brand building awareness is also a common concern among operators. They indicated that due to the lack of guidance from professional talents, rural CBEC exhibits significant deficiencies in brand building and marketing promotion awareness. Operators believe that the rural CBEC market holds tremendous potential but also faces challenges such as information asymmetry. They hope that the government can provide more assistance in areas such as logistics infrastructure construction and brand building support.

4.2) Summary of Consumer Interviews

Firstly, Ms. Zhang expressed a positive attitude towards rural CBEC, as they can satisfy their nostalgia for their homeland's flavors by purchasing distinctive agricultural products from domestic homeland through e-commerce platforms. The author learned that consumers generally prioritize product quality over price when purchasing agricultural products through e-commerce. They believe that high-quality agricultural products can bring a better shopping experience and are willing to pay higher prices for them. She believes that agricultural CBEC has a positive impact on both rural economic and social development, and is willing to continue purchasing agricultural products from both domestic and international platforms. When choosing an agricultural CBEC platform, consumers value the platform's reputation, after-sales service, and product quality. However, she also reports that information asymmetry issues are often encountered during the purchase process, such as product descriptions not matching the actual products and delayed after-sales service. It is hoped that platforms can strengthen information verification and after-sales service to enhance the shopping experience. Regarding the development of rural CBEC, consumers look forward to more high-quality agricultural products being launched online, and hope that platforms can offer more discounted activities and shopping guarantees.

4.3) Summary of Expert and Government Official Interviews

Dr. Yang and Mr. Lei both undertook thorough studies of the present situation and future prospects of rural CBEC in China. Rural CBEC is seen as having significant market potential, particularly in agricultural products and specialist goods. Through conversations with experts and government officials, they discovered that the government is vital in fostering the growth of rural CBEC. CBEC of agricultural products is believed to enhance the added value and international competitiveness of agricultural products, hence stimulating rural economic growth. The future trajectory of CBEC for agricultural products will focus on branding, specialization, and internationalization. They noted that rural CBEC development encounters constraints such low logistics efficiency, product homogeneity, and knowledge asymmetry. The government should implement policy measures to improve logistics infrastructure, encourage brand growth, boost information supervision, and increase publicity for rural CBEC. Expert and government official are hopeful about the future of rural CBEC, anticipating larger development opportunities due to technological breakthroughs and legislative reforms.

5) Main Problem

The main problems rural CBEC facing, summarized from the interview content, are as follows:

5.1) Low Efficiency in Logistics and Transportation

The rapid growth of CBEC has significantly boosted the expansion of cross-border logistics, creating many opportunities and room for its development. [42] There is a notable disparity between CBEC and cross-border logistics, with the latter unable to match the swift expansion of the former. Factors such as remote geographical location, inadequate infrastructure, low levels of education, and low internet utilization rates in

rural areas contribute to significant information asymmetry, making it difficult for effective product information to be transmitted along the supply chain.[43]

For instance, the transportation of agricultural products requires high-level cold chain systems to ensure product quality. However, compared to large overseas logistics companies, China's cold chain systems still suffer from technological and price disadvantages. According to the "China Retail Fresh Turnover Basket Application Survey Report," the loss rate of fresh agricultural products in the flow process is 20%-30%, while it is less than 5% in developed countries. This indicates that promoting the development of rural CBEC requires a transformation and upgrading of logistics services and technology.

5.2) Weak Brand Building Awareness

A brand is a symbol of a company's core competitiveness. For customers, brands enable them to actively search for products, keywords, and stores, thereby enhancing brand preference and loyalty.[43] However, due to the lack of professional guidance and the generally low education levels of rural residents, the brand awareness of rural CBEC is severely lacking. Inadequate innovation leads to deficiencies in product packaging and marketing methods. Additionally, due to cultural differences, language barriers, etc., rural residents lack awareness of diverse consumer demands when directly communicating with overseas customers over the internet, resulting in weaker competitiveness. In rural China, there is a significant phenomenon of centralized production, where some businesses enhance their competitiveness by lowering product prices. However, if this phenomenon persists, it may lead to the "bad money driving out good" situation resulting from information asymmetry.

5.3) Prominent Information Asymmetry Dilemma

CBEC trade activities heavily rely on the massive information and data carried by the internet. However, the rapid circulation of virtual information cannot provide consumers with physical references, leading to the proliferation of false information on the internet, which requires consumers to expend a certain amount of search costs to discern the authenticity of information. Information asymmetry increases the transaction risks of CBEC in agricultural products. In practice, participants in CBEC of agricultural products, especially rural residents, face varying degrees of information asymmetry due to differences in their information acquisition abilities, constraining the interests of all parties and limiting market efficiency. Urban residents, with their strong information receiving capabilities, rely on mature digital infrastructure and higher levels of economic development, while remote rural areas are relatively weaker in this regard. The moral risks arising from information asymmetry can cause emotional harm to consumers. For example, during the COVID-19 pandemic, many consumers expressed sympathy for unsold farmers by purchasing large quantities of unsold agricultural products through platforms. However, farmers took advantage of consumers' sympathy to sell deteriorated and spoiled products, seriously undermining consumer trust in the platform and sellers.

5.4) Lack of Skilled Talents

Among the practitioners in CBEC, the majority are self-employed farmers and small and medium-sized enterprises, who have never received professional training. Although the number of universities offering e-commerce majors in various provinces has increased, indicating the potential and demand in this field, the training efforts are insufficient, and the teaching content is still in the exploratory stage. Therefore, the lack of composite innovative talents hinders the development of the industry. CBEC involves multiple links such as procurement, logistics, warehousing, and operations. Hence, professionals engaged in CBEC should possess comprehensive skills in computer science, foreign languages, regulations and laws, and marketing. Due to factors such as remote locations, lower levels of economic development compared to cities, and insufficient subsidies, rural areas do not have strong appeal to professional

talents. Therefore, there is a need for further exploration and research in building a talent system and selecting talent in rural areas.

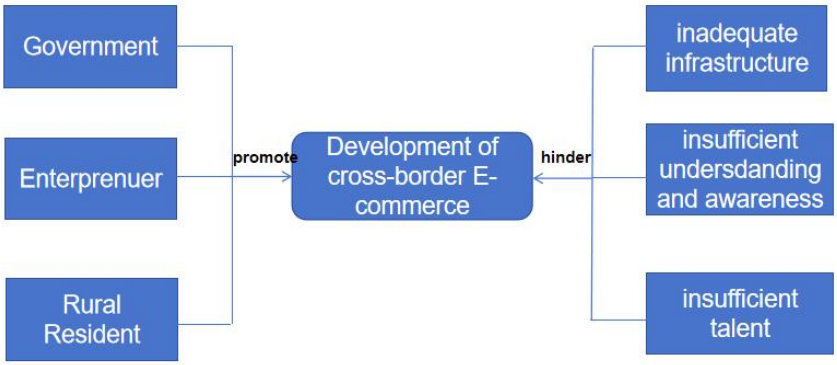

Figure 3.6 Drivers and Blocks of Developing CBEC in China

3.2 Significance of Promoting Rural CBEC

3.2.1 Facilitating the Upgrading of Related Supporting Industries

The rapid development of CBEC has propelled the emergence and advancement of a series of related industries. For instance, the construction of overseas warehouses and collaboration among enterprises have reduced transportation costs and improved delivery efficiency. Improved third-party payment platforms and strengthened regulations have enhanced transaction security. It can be said that CBEC and the development of related industries complement each other, forming a symbiotic relationship. Despite the relatively lower level of growth in rural areas compared to urban areas, with the support of digital technologies (such as the Internet of Things, big data, and blockchain), the urban-rural gap is gradually narrowing, and supporting infrastructure construction is being improved. As CBEC advances, rural areas have seen enhancements in road construction, transportation equipment, electricity and internet

infrastructure, and water conservancy and power projects, establishing a strong foundation for rural economic growth.

3.2.2 Aiding in Poverty Alleviation Efforts

Poverty is a longstanding and serious issue in China, and it is also a significant factor hindering economic growth. From the late 1978 when the proportion of rural poverty in China was approximately 97.5% and the scale of poverty was about 70 million people, to 2019, these figures have substantially decreased to 0.6% and 5.51 million people. However, early relief efforts failed to fundamentally reduce poverty. The impoverished population heavily relies on fiscal subsidies and lacks proactive poverty alleviation awareness, leading to sustained poverty return and ineffective input. With the mature development of e-commerce, promoting industries to deeply integrate with e-commerce, accelerating industrial transformation, improving production technology levels, enriching sales channels, and achieving poverty alleviation and prosperity. The central government of China has listed poverty alleviation through e-commerce as one of the ten major themes of China in 2014, and further emphasized the implementation of poverty alleviation through e-commerce in the November 2015 "Decision on Winning the Tough Battle against Poverty" issued by the CPC Central Committee and the State Council. With e-commerce being incorporated into the mainstream policy system, CBEC, as a part of e-commerce, provides broader development space for impoverished areas. CBEC not only targets the domestic market but also involves the international market, which helps diversify sales channels and enhance brand awareness for producers. By enabling domestic goods to enter foreign markets and introducing foreign products to domestic market, the bidirectional flow becomes smoother, ensuring the improvement of the modernization of agriculture in impoverished rural areas. The "e-commerce + international trade" model helps rural residents broaden their horizons, break through the limitations of the local market, and stimulate innovative awareness in production and overseas sales. Impoverished households can utilize this model to accelerate the pace of poverty alleviation, while

local related industries can further develop. Taobao Villages are typical products of the combination of the internet and traditional trade, which will be analyzed in Chapter 4.

CHAPTER 4

Poverty Alleviation Empowered by E-Commerce

4.1 E-Commerce and Poverty Alleviation

Poverty eradication has long been a significant global challenge and a common goal of humanity. Globally, China has made significant contributions to poverty reduction. China's poverty alleviation model is of great significance for other developing countries. Several national researchers have extensively researched China's poverty alleviation process. This study considers the year 1978, the beginning of the reform and opening up, as the starting point for poverty alleviation efforts, despite ongoing controversy. Since then, the proportion of the population living in poverty has decreased from over 80% to the virtual elimination of extreme poverty by 2020. Rural poverty alleviation, as the core of the entire project, has shifted from a "blood transfusion" model heavily reliant on external aid to a more convincing self-motivation model, adjusting goals, paths, and intervention degree. Therefore, the conclusion drawn in this paper is that the traditional extensive model is no longer suitable for poverty alleviation needs due to its prolonged duration and difficulty. Instead, the combination of informatization and industrialization provides powerful impetus for the realization of this great endeavor. As the saying goes, Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime. This helps fundamentally change the economic status of the impoverished population through poverty reduction via e-commerce.

4.1.1 Definition and Role of poverty alleviation through e-commerce

1) Definition

Solving the global poverty is the the primary goal of the United Nations Sustainable Development Goal (SDGs). In China, the poverty line is the key measure of poverty. It is determined based on the food consumption and income level necessary for the survival of individuals or families. In 1986, China first set the poverty alleviation standard of 206 yuan, and the current standard is that the annual per capita net income is stable at more than 2300 yuan (constant price in 2010), according to the Poverty Alleviation: China's Experience and Contribution.

Poverty alleviation through e-commerce is one of the economic measures to address poverty issues in rural China and is a key means of targeted poverty alleviation strategies. The concept was initially proposed by Wang Xiangdong in 2011. Through the study of the "Shaji Model," he found that the Chinese government overlooked the application of information and communication technology in the poverty alleviation system. However, villagers in Shaji achieved prosperity by operating online furniture business, which was a novel poverty alleviation method worthy of national promotion. [44] In 2014, poverty alleviation through e-commerce was included in the national-level policy system. Its scope of work is not limited to rural areas but also includes urban impoverished households. Within the scope of this study, the definition of rural poverty alleviation can be understood as rural impoverished populations developing rural characteristic industries through e-commerce, promoting economic growth, enhancing the consumption capacity of impoverished areas, and achieving poverty alleviation goals in the long run. The beneficiaries can directly or indirectly benefit from the development of e-commerce. Direct beneficiaries include targets leading commercial activities, such as production, processing, and operation. Indirect beneficiaries refer to the improvement in living standards and employment opportunities during the development of e-commerce. Rural poverty alleviation through e-commerce work has broad coverage, improving the economic status of impoverished populations through e-commerce. The essence of the poverty reduction through e-commerce model is to achieve linkage between poverty-stricken areas' industries and the larger market through e-commerce, breaking free from the constraints of segmented markets and addressing

the weakness of existing developmental poverty alleviation efforts in market connection. [45]

2) Role

The "Outline of China's Rural Poverty Alleviation and Development Work" points out that poverty reduction is mainly achieved through three pathways: supporting the extremely poor, developing industries for poverty alleviation, and providing social security for poverty alleviation. Zheng Ruiqiang emphasized that using e-commerce for poverty reduction involves many methods that combine resources to enhance effectiveness in resource allocation and development quality, ultimately striving to lift people out of poverty. Therefore, it is considered a comprehensive poverty reduction method that combines the above three methods.[46] Poverty alleviation through e-commerce enhances the cognitive level and learning ability of the beneficiaries. It is worth noting that in practice, translating cognition into action is the most challenging part of combating poverty and often requires a significant amount of publicity and investment. We draw lessons from the "Shaji Model", where villagers engaged in online furniture business independently and actively during the entrepreneurial stage, and due to the substantial profits earned by early adopters, more and more villagers imitated this business model. A chain reaction occurred, leading to a large number of villagers participating in e-commerce trade activities. The premise of engaging in e-commerce is to have a comprehensive understanding of operational processes, including advertising, website design, procurement, packaging, logistics distribution, and warehousing. However, rural residents typically lack high education and skills training in the initial stages but acquire knowledge through self-study and operate in practice. Profit-driven motives have the potential to significantly boost economic development in poor rural communities. The poverty alleviation through e-commerce model expands the circulation market for rural characteristic products. The traditional mainstream trading form in rural China is rural market trade, selling products within villages or products purchased from county towns to villages, limiting sales to villages with limited product categories and fewer participants. As for products sold to cities, they face the dilemma

of price squeezing by multiple layers of intermediaries. By narrowing the information gap between urban and rural populations by increasing Internet penetration, customers and procedures are directly connected to each other, allowing rural producers to better understand consumer preferences and accurately predict consumption tendency, thus achieving clearer product positioning.

4.2 Practice of Poverty Alleviation through E-Commerce

4.2.1 Empirical Analysis of Poverty Alleviation through CBEC: An example of Xuzhou City

Xuzhou is located in the northwest of Jiangsu Province, a coastal province. It is the economic and foreign trade center of Jiangsu Province and the central city of the Huaihai Economic Zone in China. In the early years, it relied on coal resources, but due to the depletion of resources, it is now transforming to promote the development of productivity by digital economy. Xuzhou is also the development place of the famous "Shaji mode" and "Xinyi mode" in China. These modes promote the rapid development of local e-commerce by taking advantages of location and resources. Over the past decade, the steady growth of Xuzhou's e-commerce model has led to the improvement of the local economy. In the empirical analysis, Xuzhou, a representative poverty alleviation through e-commerce region, is selected as an example to better illustrate the significance of developing e-commerce and foreign trade to promote regional cross-border e-commerce development for poverty alleviation and income growth.

At the beginning of the empirical analysis, it is planned to use the cross-border e-commerce trade volume of Suining County in Xuzhou City as the dependent variable of the model, and the economic aggregate of Suining County as the independent variable. However, due to the fact that CBEC in China is relatively a new phenomenon, with a later growth timeline, it was challenging to collect data mentioned above for the past ten years in Suining. Even upon reviewing literature, we found out it still difficult to gather relevant data and information. Therefore, Xuzhou is considered as the objective of

empirical analysis. According to the above, major places in Xuzhou have participated in the poverty alleviation through e-commerce earlier and achieved good results, which has a wide range of influence in China. And in order to more effectively investigate the possibility that the CBEC has helped Xuzhou's foreign trade to reduce poverty in recent years, the paper referred to the study of Meng Fanfan and Jin Zehu [1] and takes Xuzhou's import and export volume and e-commerce transaction volume as the independent variable of the model, and Xuzhou's GDP as the dependent variable for the empirical study.

1) Index selection and data source

Stata is used as the measurement tool, and the time series data from 2013 to 2022 is used as the sample. The original data are as follows.

Y: Xuzhou's GDP from 2013 to 2022 is is the dependent variable, and the data is collected from Xuzhou Bureau of Statistics.

X1, Import and Export Volume (iev): The import and export volume of Xuzhou from 2013 to 2022 is the independent variable, and the data is collected from Xuzhou Bureau of Statistics.

X2, E-commerce Transaction Volume (ecv): the e-commerce transaction volume of Xuzhou from 2013 to 2022 is the independent variable, and the data is from news websites.

2) Empirical Analysis

2.1) OLS regression result and analysis

In order to eliminate the heteroscedasticity of the model and reduce data fluctuation, this paper takes the natural logarithm of Y, X1 and X2 to obtain lny, lnx and lnx2. Logarithms will not change the cointegration relationship between data, so the results obtained by taking logarithms data for empirical test are consistent with the original data itself. OLS regression was performed on the logarithm data with measurement tool Stata. The results are as follow.

Established regression equation: lngdp=6.35+0.19lniev+0.16lnecv.

Seeing from the regression result, the R square=0.9418, the adjusted R square=0.9252, the standard deviation of the equation is 0.5629, the statistical result of F is 56.63, and the corresponding p>F value is 0.0000. It can be seen from these two indicators that the equation is highly significant. The P>t values of all indenpent variables were less than 0.05, indicating that they were significant at the 5% level, and the sign symbol was consistent with the theoretical expectation. Therefore, the developing CBEC through foreign trade and e-commerce has a favorable influence on the development of regional economy, and the combination of foreign trade and e-commerce to develop CBEC is of great significance to regional poverty alleviation work.

Source	SS	df	MS	Number of obs	=	10
				F(2, 7)	=	56.63
Model	.358839782	2	.179419891	Prob > F	=	0.0000
Residual	.022176193	7	.003168028	R-squared	=	0.9418
				Adj R-squared	=	0.9252
Total	.381015975	9	.042335108	Root MSE	=	.05629

loggdp	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
logiev	.1922539	.0787647	2.44	0.045	.006005	.3785028
logecv	.1629728	.0683887	2.38	0.049	.0012593	.3246864
_cons	6.350817	.227625	27.90	0.000	5.81257	6.889065

Figure 4.1 OLS regression of Xuzhou's Y-GDP, X1-import and export volume, X2-E-commerce volume (2013-2022)

2.2) Correlation Test

In order to ensure that the selected variables can be used as independent variables to explain the dependent variables, the correlation test of logarithm lnx1, lnx2, Lny is performed with Stata, and the results are shown in Figure 4.2. It can be seen from the results that VIF value is less than 10, and the correlation is not at obvious level.

Variable	VIF	1/VIF
logecv	**5.13**	**0.194890**
logiev	**5.13**	**0.194890**
Mean VIF	**5.13**	

Figure 4.2 Xuzhou City's GDP, import and export volume, E-commerce volume Correlation Test

2.3) Test of the actual value and predicted value of the logarithm of Xuzhou's GDP

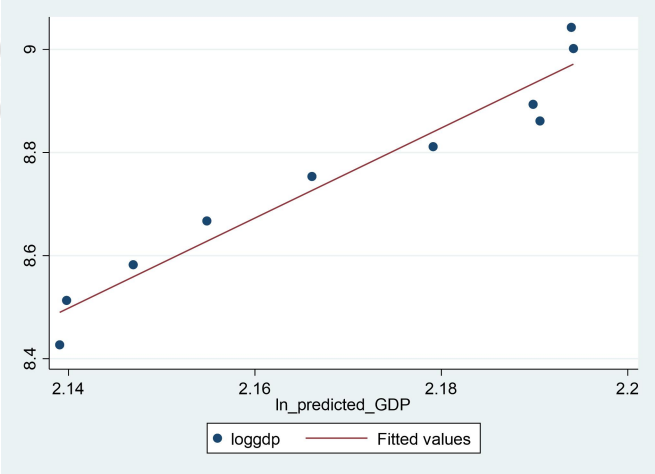

Figure 4.3 Actual Value and Predicted Value of Logarithm of GDP

By checking the relationship between the actual value and the predicted value, the correctness of the model can be detected. The specific inspection results are shown in Figure 4.3. As can be seen from Figure 4.3, the actual value of the logarithm of GDP in Xuzhou City is basically the same as the predicted value, which shows that the model setting is reasonable.

4.2.2 Taobao Villages Cluster

According to the bottom of the pyramid theory, poor people, as a low-income market, should not be denied or automatically excluded by entrepreneurs or society because they constitute the majority of the global population, representing a vast invisible market for profit growth.[47] However, low-income markets may be fragile without external assistance such as local governments, non-governmental organizations, and entrepreneurs. Additionally, it should not be limited to financial aid alone but rather through sustainable development models and continuous exploration of profitable markets. From the perspective of rural economic prosperity, Taobao Villages represent a significant research case for many scholars, resulting from e-commerce transforming traditional industries under the backdrop of the Internet and possessing spontaneity. [48] From the perspective of social innovation, new ideas that may improve macro-quality of life and quantity but are not necessarily profit-driven can motivate people. [49] External assistance, local governments and institutions (associations), multi-tier operators, etc., provide professional consultation and guidance, online platforms, and timely information access to help rural e-commerce participants operate more effectively. [50] Taobao Villages are also considered industrial cluster phenomena, adhering to innovation-oriented approaches in business models, product innovation, and financial models. [51] This is not a concept with a vague definition but rather a clear criterion. Taobao Villages can be defined when the following conditions are met:(1) Administrative areas are limited to rural areas; (2) E-commerce sales on the Alibaba platform amount to no less than 10 million yuan; (3) One hundred active online retailers constitute ten percent of the total.

According to the "2020 China Taobao Village Research Report" released by AliResearch, by 2020, the number of Taobao Villages reached 5,425, a year-on-year increase of 25.8%. There are 119 Taobao Villages in national-level poverty-stricken counties, an increase of 51 from 2019, accounting for 89%. The prosperity of Taobao Villages has not only led to income growth for rural residents engaged in e-commerce but also fundamentally upgraded local infrastructure. A large number of empirical cases prove that the expansion of Taobao Villages cannot be separated from prominent entrepreneurial spirit and policy guidance. China's Taobao Village clusters are a unique phenomenon worldwide, particularly rare among developed economies. [52] Undoubtedly, after more than a decade of expansion, it has taken a dominant position. It is not randomly dispersed but influenced by geographical location, resource endowment, and infrastructure. [53] Taobao Villages are predominantly located in coastal regions of China, particularly in Jiangsu, Zhejiang, and Guangdong, with less in the eastern area. The number of Taobao Villages in the northern region is fewer than in the southern region. With the maturity of infrastructure and the strengthening of economic strength in the eastern region, the horizontal distribution shows a downward trend from east to west. The first law of geography states that all things are interconnected, with nearby items being more intimately linked. [54] It can be affirmed that Taobao Villages centered around Jiangsu, Zhejiang, and Shanghai are spreading to surrounding areas, forming a group of Taobao Village clusters. [55] The distribution pattern is spreading to the central and western regions because of the rapid economic expansion and extensive development opportunities in the western region. It is worth noting that the spatial diffusion factors based on geographical location are gradually weakening due to the widespread application of the Internet. In the upcoming years, there is significant potential for the growth of e-commerce in both the southern and northern regions. Resource endowment, regional economy, and culture are diverse, so the specific content of e-commerce development in Taobao Village clusters also varies. Dongfeng County, Jiangsu Province, engages in combined furniture production with abundant natural resources and recycled old furniture; Junpu County, Guangdong Province, mainly engages in the clothing industry and has previously been involved in food processing there; and Yanji County, Jiangsu Province, engages in the trade of flowers and plants

relying on natural resources. The simultaneous functioning of internal and external support is the main factor contributing to the progressive development of Taobao Villages. The term encompasses the rise of entrepreneurial drive, the modernization of conventional sectors, and the influence of governmental initiatives.

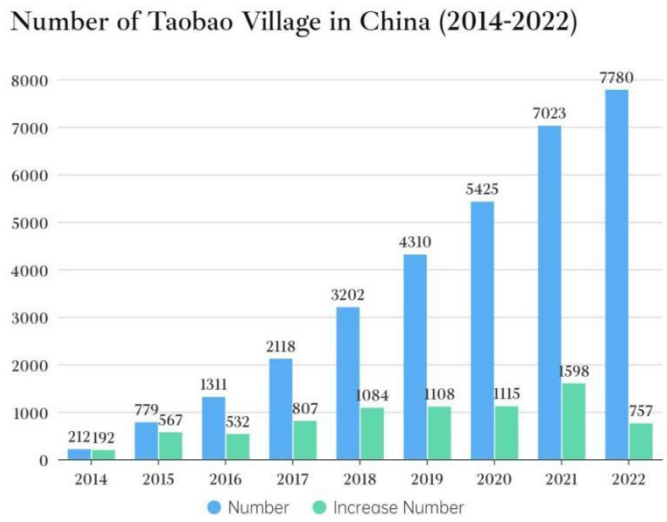

Figure 4.4 Number of Taobao Village in China (2014-2022)

Data Source: Alireaserch

4.2.3 Entrepreneurial Spirit

Traditional rural areas are inevitably constrained by information asymmetry and traditional sales practices. In terms of agricultural products, producers with lower levels of education often cannot access detailed market information, including market demand, product prices, sales conditions, consumer preferences, etc., due to a lack of information acquisition capabilities, leading to poor acceptance of new products. Furthermore, information asymmetry between producers and consumers brings uncertainty to transactions, especially in terms of trust and product reputation. Due to persistent rural poverty, vulnerable producers not only lack comprehensive information but also face price squeezes from multiple layers of intermediaries.

Entrepreneurship plays a crucial role in exploring the cognitive capabilities of low-educated rural residents. Entrepreneurial spirit and the establishment of new enterprises are key elements of innovative cluster development, and innovative enterprises and some public institutions provide resources for the development of clusters.[56] The initial formation of Taobao Villages differs from the demand for high-educated talents by high-tech enterprises but is rather a product of local residents' innovation consciousness. They are referred to as rural entrepreneurs. As primary participants in local industrial development, they possess the ability to access real-time information, integrate resources, familiarity with local conditions, and insight into external markets.

Taking Dongfeng Village in underdeveloped Jiangsu Province as an example, the village used to rely on agriculture and waste recycling for survival. In 2006, three young people spontaneously pioneered self-operated online stores, selling assembled furniture, and achieved unexpected income and remarkable performance. Fellow villagers followed suit, extending furniture-related e-commerce throughout the village. Continuous improvements in information and communication technology enabled rural residents to independently use the Internet and operate computers, breaking through information barriers, which is also a significant factor influencing their growth.

Dongfeng Village is not the only case, but the emergence of entrepreneurial spirit highlights its leading role in rural poverty alleviation through e-commerce work. From the perspective of a familiar society, rural areas can be seen as communities filled with acquaintances, where residents know each other and exchange information and interactions within a limited area. Honesty and trustworthiness in interpersonal relationships and transactions serve as constraints on moral and ethical behavior in society. On the one hand, the high level of mutual trust in agricultural society enables rural residents to confidently follow the business models of pioneering entrepreneurs, and on the other hand, entrepreneurs are willing to share their experiences and knowledge of e-commerce practices, leading to the expansion of Taobao Villages in China over the past decade. In the later stage, economic benefits dominate. When seeing

considerable benefits, other villagers will participate in such trade activities in the form of imitation, resulting in mature industrial development and refined division of labor. As shown in Figure 1, the Innovation led by pioneer entrepreneurs drives the fission mechanism.

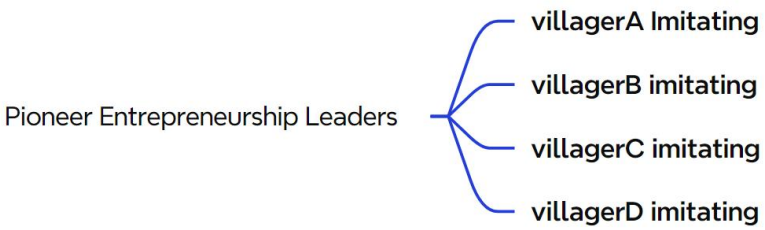

Figure 4.5 Fission Mechanism of Pioneer Innovation in Poverty Reduction through E-commerce in Rural China

4.2.4 Government Function

Broadly understanding the issue of poverty, it can be divided into three stages: extreme poverty, general poverty, and relative poverty. China has long been striving to address poverty, but issues such as the large scale of the impoverished population, insufficient administrative efficiency, official corruption, and abuse of power still exist. [57] Achieving goals is not easy and requires substantial financial resources and manpower, posing a profound historical problem. Many scholars believe that neither government-led nor purely market-oriented approaches can achieve optimal results, and the organic combination of both is the best model for poverty alleviation in China. In other words, under the premise of the market playing its role, the government should intervene in poverty alleviation mechanisms. [58] While the market economy is crucial in resource allocation, the essence of the "invisible hand" is to pursue maximum profit, which to some extent widens income inequality and worsens social order. However, in practice, government intervention partially compensates for market failures. However, without top-level design and clear intervention boundaries, assistance goals will be

entirely dependent on the government, which is unlikely to fundamentally solve the problem of poverty and may even lead to resource waste and official corruption. At the very least, when the primary mode is external aid, many similar problems inevitably arise in grassroots poverty alleviation work.

The role of the government in promoting rural e-commerce mainly manifests in three aspects:

1) Infrastructure Improvement

Currently, the consumption demand and level of urban residents are continuously increasing, especially the demand for agricultural products. Therefore, infrastructure in rural areas, such as road maintenance, transportation, logistics upgrading, broadband installation, and Internet popularization, is crucial for rural e-commerce. This enables suppliers and consumers to connect smoothly and benefit mutually. Improving infrastructure is one of the main tasks outlined in the "Guiding Opinions on Precision Poverty Alleviation through E-Commerce" released in 2016, including achieving a broadband Internet coverage rate of over 90% in underdeveloped areas and establishing information service stations in over 80% of underdeveloped areas by 2020.

2) Financial Support

The entry threshold and startup capital for e-commerce are generally not high. However, for residents living in underdeveloped rural areas, due to the backward economic foundation, they lack funds to purchase digital devices, lease warehouses, and production equipment. Meanwhile, for e-commerce practitioners seeking opportunities to expand their reproductive capacity, the original capital accumulation is far from sufficient. Government financial support, through measures such as relaxing loan restrictions, simplifying loan procedures, and providing tax incentives, has partially stimulated entrepreneurial enthusiasm.

3) Policy Guidance

The emergence of the Taobao Village phenomenon is attributed to the decentralization of local rural areas and the innovation and practice of individual business entities towards both e-commerce and traditional trade. Subsequently, as economic benefits steadily expanded, the same business model was imitated by other villagers, particularly among acquaintances nearby, which has promoted the scalability of regional e-commerce. However, due to the unsustainability of rural e-commerce and the disordered business environment, it has also brought about issues such as product homogenization and disorderly price competition as residents hastily imitate the same model in their expansion. Timely adjustments to government policies have addressed and compensated for the deficiencies of the "invisible hand." For instance, based on regional resource endowments and industrial characteristics, rural e-commerce has been guided towards a rational layout to avoid blind and disorderly competition. Furthermore, there has been an emphasis on talent cultivation. According to data from the Ministry of Commerce, among rural e-commerce practitioners nationwide in 2020, those with a college degree or higher accounted for 25.9%, those with a bachelor's degree or higher accounted for 7.6%, and those receiving specialized technical training accounted for 16.7%. Since 2016, the Ministry of Agriculture and Rural Affairs has annually organized specialized training sessions on agricultural and rural e-commerce in multiple provinces. By inviting experts, scholars, and entrepreneurial talents to interpret policies, provide hands-on guidance, and share case studies, the aim is to cultivate rural e-commerce talent. The government also supports farmers' professional cooperatives in conducting e-commerce training, enhancing the e-commerce capabilities of cooperative members through training, and promoting the large-scale and brand-oriented sale of agricultural products. Such training emphasizes teamwork and resource sharing, helping cooperatives achieve better economic benefits. From professional talents to grassroots practitioners, rural e-commerce training has formed a broad and deep coverage.

CHAPTER 5

Rural CBEC Development Path under the Background of the COVID-19 Pandemic

5.1 Actions to Promote CBEC Development in the Pandemic Era

To examine the functions of the government, enterprises, and farmers in rural economic growth and reduce the urban-rural economic disparity through the advancement of rural CBEC, it is essential to comprehend the interconnections and responsibilities of the involved parties in the industry's progress. Their positions, functions, and impacts in alleviating rural poverty through CBEC.

5.1.1 Relationships and Roles of the Government, Enterprises, and Farmers

CBEC integrates e-commerce with international trade to optimize trade efficiency across regions and reduce value loss through intermediaries by leveraging digital technologies like the Internet. The key partners in establishing a healthy economic climate for China's CBEC are the government, third-party platforms, and farmers. They have distinct objectives but maintain interconnected ties. The ultimate goal of enterprises is to maximize profits while also assuming social responsibility ethically. Enterprises, in response to the government's appeal, take on a leading role in the production and sales of farmers to alleviate poverty through e-commerce programs. Faced with the economic downturn caused by a global public health crisis, the government, as the policy maker and implementer, plays a crucial role in alleviating and assisting the impoverished population. Farmers, as the primary aid recipients, experience both benefits and losses during the development of the rural community economy.

Dual economic phenomena with significant urban-rural economic disparities are prevalent in developing countries. Whether in the early stages of rural e-commerce or the current stage of cross-border development, inefficient, self-sufficient production models are common, and transitioning to a technology-driven labor force cannot be smoothly accomplished in a short period. Particularly, agricultural products and primary products are the main products of rural CBEC, heavily reliant on land resources with low labor skill requirements. Thus, low-tech production is considered one of the reasons for farmers' weak innovation consciousness. Long-standing backward thinking and unskilled labor have not motivated producers to create more value for themselves. Furthermore, the Matthew effect of regional polarization exists in market mechanisms, where capital and labor flow to industries and regions with high profits and efficiency, while underdeveloped regions lack the ability to attract external investment, further exacerbating regional and industry imbalances. [59]

The role of the government can be seen as a process of pursuing Pareto optimality to achieve the best results in economic efficiency and resource allocation, resisting resource waste. The government effectively manages decision-making in the practice of rural poverty alleviation through e-commerce by developing CBEC. This includes alleviating poverty, enhancing living standards, reducing the urban-rural economic disparity, and ultimately ensuring social stability. In contrast, uncertainties arise in "two worlds," such as increased social conflicts, rising unemployment rates, and crime rates; thus, government intervention is significant. During the short-term outbreak of the pandemic, social disorder was evident, and the government's fiscal stimulus and subsidy measures were crucial in compensating for market failures and alleviating social conflicts.

The direct role of enterprises lies in their rational investment and industrial support for rural areas through CBEC on poverty alleviation third-party platforms. The nature of enterprise behavior is to maximize profits; therefore, the prospects and profitability of projects are naturally the primary factors in decision-making. Under the call and incentive of government policies, enterprises undertake social responsibilities,

promoting mutually beneficial cooperation between farmers and enterprises, which not only alleviates rural poverty but also opens up a stable upstream market for the sustainable development of enterprises. Conversely, without government intervention and allowing enterprises to operate freely in the "invisible hand," it would be difficult for enterprises to successfully rescue themselves under the severe impact of the pandemic, especially when many small businesses lack sufficient capital flow, scientific supply chain management systems, and forward-looking market layouts.

This research will analyze the actions of the three entities listed to address the economic challenges resulting from the pandemic and enhance the expansion of CBEC.

5.1.2 Government Behavior

Government behavior exhibits both negative and positive impacts. Excessive government intervention inevitably leads to rent-seeking behavior, where officials exploit their authority in project planning and execution, resulting in uneven resource allocation and serving as a root cause of corruption. However, in cases of market failure, government intervention is necessary to maintain social stability. The fundamental objective of developing CBEC in rural areas is to alleviate poverty and increase the income of impoverished populations. Therefore, the government, while respecting market principles, plays a role in creating a healthy business environment and guiding farmers' operations. In the initial phase following the outbreak of the pandemic, governments at all levels introduced policies and provided financial support to alleviate the pressures brought upon businesses and industries by the pandemic. For instance, due to a shortage of funds resulting from extensive purchases of epidemic prevention tools, the government provided a certain proportion of fiscal support and actively promoted trade facilitation to help expand external trade financing channels and resolve enterprise financing issues, exempted inspection and quarantine import and export taxes, and expedited the construction of CBEC comprehensive pilot zones. In 2019, the western Chinese province of Guangxi issued a policy focusing on supporting leading enterprises

and supply chain construction to counteract the negative impact of the epidemic. Considering the adverse effects of aviation and land transportation controls, policy support was provided for cross-border railway trains from Nanning, Guangxi, to Hanoi, Vietnam, to promote the construction of the new Western International Land-Sea Trade Corridor. The eastern coastal province of Zhejiang innovated investment measures, conducted "cloud signings," and hosted online investment promotion conferences, vigorously enhancing "digital life" new services to boost consumer capacity and stimulate the market. Overall, the government responds comprehensively to the growth of CBEC under challenging conditions in finance, taxation, digital and transportation infrastructure, and CBEC comprehensive pilot zones, aiming to create a healthy business environment and formulate policies promptly from a macro perspective. CBEC is an important national strategy for promoting foreign trade growth, especially through favorable policies and infrastructure development to encourage the export-oriented development of CBEC. In October 2020, the State Council issued the "Decision on Expanding the 46 Trial Zones," exempting value-added tax and consumption tax on retail exported goods from the trial zones and levying corporate income tax at a reduced rate. In June of the same year, the General Administration of Customs announced a new regulatory model for B2B CBEC in some first-tier cities. In recent years, governments worldwide have enacted more intensive export support policies, creating a favorable business environment through reasonable supervision and guidance.

5.1.3 Enterprise Behavior

With the upgrading of the Internet and its significant penetration, channels for purchasing and obtaining product information have become more diversified. Currently, the popular channel for CBEC purchases in China is live commerce on social media platforms, where product features and value are disseminated through real-time interaction between users and hosts. Smooth video quality provides users with a high-definition, seamless, intuitive visual experience, facilitating the rapid dissemination of product information and establishing consumer trust in actual products. In fact, major

CBEC platforms have long been engaged in live streaming sales. Whether it is in terms of product selection, scene setup, team building, or host's sales abilities, efforts are made to maximize customers' e-commerce shopping experience and improve purchasing decision efficiency. For example, under the finely tuned network exposure layout of a team, Chinese local internet celebrities like Li Ziqi not only have high click-through rates on major domestic social platforms but also have many fans on overseas platforms like YouTube. She spreads rural agricultural culture through immersive short films, driving overseas consumers' interest in Chinese rural life, agricultural products, and handicrafts. Using China's experience in agricultural self-sufficiency as a cultural carrier for products, which contrasts sharply with the current rapid mechanized production, stimulates overseas users' interest in Chinese agricultural culture and motivates them to consume it.

5.1.4 Farmer Behavior

Farmers have developed a growing understanding of autonomous e-commerce marketing for agricultural products over the last six years, resulting in stable sales channels and increased revenues. The formation of Internet thinking enables farmers to not passively wait for government or government-enterprise cooperation but to understand how to self-rescue during the pandemic. Farmers actively connect with enterprises and the government through online platforms, showcase product information online, and contact purchasers for product procurement. Within the farmer production and operation team, farmer professional cooperatives are collective economic organizations that bring together diverse farmers, forming multiple departments. Farmers, as members, collectively manage the production, processing, transportation, and sales of agricultural products. It is also a mutual aid organization integrating production and marketing. During the pandemic, cooperatives solved the problem of severe product unsalability by conducting live e-commerce broadcasts and building information platforms, stimulating farmers' innovative entrepreneurial thinking and promoting rural consumption upgrades. County chiefs in poverty-stricken counties also

joined live streaming sales to endorse local products, and with the cooperation of the government, enterprises, and farmers, they sold unsold products in a short period, fully participating in self-rescue. Currently, farmers' autonomy and independence are gradually being stimulated, but their initiative is still deeply influenced by traditional trading models. In the future economic rebound, talent cultivation and industry promotion, carried out collaboratively by the government and enterprises, should be considered the primary method to enhance the advancement and growth of rural CBEC amidst the shift in farmers' mindset.

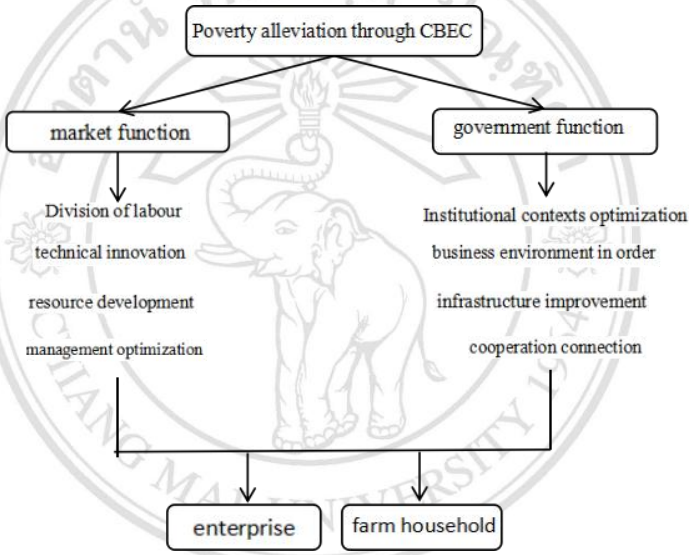

Figure 5.1 Triangular Relation between the Government, Enterprise and Farm Household in Mechanism of Poverty Alleviation through CBEC

5.2 Obstacles to the Development of Rural CBEC in the Post-pandemic Era

Table 5.1 demonstrates a notable rise in China's CBEC imports of agricultural products in recent years. This trend indicates that as living standards improve, consumers are increasingly demanding higher standards of food safety, quality, and taste, leading them to prefer imported agricultural products. This has also stimulated the

growth of international e-commerce platforms for agricultural products, offering consumers a wider range of options and ease.

However, after the outbreak of COVID-19, the development of CBEC in China's rural areas is also facing huge challenges. The retail import and export volume of CBEC of agricultural products shows a significant disparity, with exports surpassing imports, resulting in a substantial trade deficit. The widening trade deficit also reveals some problems. On the one hand, this may be related to the changes in the international trade environment, the fierce competition in the export market and the unreasonable export structure of agricultural products. On the other hand, it also reflects that China's agricultural products need to be strengthened in brand building, quality improvement and marketing. This section uses PEST model to analyze the practical problems of CBEC development in rural areas after the COVID-19 epidemic.

Table 5.1 Agricultural Product Import and Export in China (2020-2023)

The Agricultural Product Import and Export Value in China (2020-2023)			
Year	Total Import and Export (USD)	Import (USD)	Export (USD)
2020	63.4 billion	61.8 billion	1.6 billion
2021	2,992.1 billion	826.8 billion	2,165.3 billion
2022	3,296.5 billion	861.5 billion	2,435.0 billion
2023	3,718.2 billion	856.4 billion	2,861.8 billion

Data Source: General Administration of Customs

1) Politics

Deterioration of the international trade environment, increasing uncertainty in CBEC imports and exports. The pandemic disrupted the relatively balanced supply-demand relationship, leading to imbalances in product supply and demand despite adjustments after resumption of work and production. Efforts to control the pandemic, coupled with economic development disparities among countries and regions, have

exacerbated product supply-demand imbalances. The pandemic serves as a warning to CBEC, emphasizing the need to enhance competitiveness in the backend of the supply chain, not just focusing on marketing at the frontend. Sudden and inevitable factors highlight the competitiveness and effectiveness of enterprises in mature supply chain management systems. Weaker enterprises face supply chain disruptions and financial constraints, even facing elimination. [60] Moreover, friction and disputes between countries and regions are worsening, exacerbated by the irrational politicization of the pandemic, leading to continued deterioration in international relations. For instance, from 2018 to the imposition of tariffs on Chinese agricultural products by the United States, the US-China trade war has lasted for years, with China responding in kind. Both sides have experienced significant changes in imports and exports, impacting various industries, but all suffering heavily. China's value-added in food, fruits, and meat products has been severely affected. [4] Furthermore, the politicization of the COVID-19 pandemic has led to tense bilateral diplomatic situations. CBEC companies operating in the United States are facing sharply rising export costs, leading overseas customers to purchase products imported from other countries through platforms due to higher prices than those imported from China. More importantly, shifts in consumer habits have led companies to lose their target markets. Therefore, unstable and changing policies may deal a devastating blow to CBEC companies that have made significant investments and deployments in target countries. According to 100EC’s statistics, 12 Chinese CBEC companies perished in the downturn of the digital economy in 2021, accounting for 9.23% of domestic digital economy platforms. In the future, the main focus of Chinese CBEC exporters should be on other complementary markets to reshape the overseas landscape and explore diversified trade markets.

2) Economy

Rural residents in China generally have lower incomes compared to urban residents, resulting in lower purchasing power and a simpler consumption structure. Rural residents tend to prefer practical and cost-effective products, and are less willing

to purchase high-value and high-quality products on CBEC platforms. This limits the potential demand for CBEC in rural areas, making it difficult to expand the market scale.

In addition, there is a significant economic disparity between rural and urban areas, with lower levels of economic development in rural areas. And the underdeveloped rural financial market cannot support the expansion of CBEC enterprises, particularly in terms of limited financing channels and inadequate financial services. This restricts the scale of enterprise expansion and business development. CBEC business models require significant capital investment and ongoing operating funds, including platform construction, operation and promotion, logistics and distribution, and after-sales service expenses. However, the limited number of financial institutions and credit services in rural areas pose significant challenges to enterprises in terms of financial operations.

Moreover, the imperfect financial market also affects CBEC risk management capability. CBEC involves multiple risks, including cross-border transactions, exchange rate risks, credit risks, and cross-border logistics. From the perspective of exchange rate risk, fluctuations in the Chinese yuan's exchange rate may increase the uncertainty of import and export costs, especially for small-scale rural enterprises, which may have a significant impact on profitability.

3) Society

Lack of highly standardized product quality and safety, leading to insufficient confidence in Chinese brands. In recent years, the poverty alleviation through e-commerce has further propelled the development of cross-border agricultural e-commerce towards large-scale rural production and cluster-based operations. Besides meeting domestic needs, these products can also grace the dining tables of overseas customers. However, the consumption demands of overseas customers have become more diversified, and the pursuit of quality is continually rising. China's primary export

markets are the United States and Europe, countries with high levels of agricultural standardization and mechanization. Therefore, Chinese brands, while improving product quality, must also emphasize the significance of brand value and the establishment of safety standards. This is crucial for tapping into vast overseas markets.

Due to factors such as educational levels and geographical differences, farmers struggle to develop branding awareness. In such circumstances, it is difficult to produce according to standardized agricultural safety standards without the guidance of the government or leading enterprises, making it challenging to create brand value. Family workshops, which make up a significant proportion in rural areas, cannot meet the massive global demand, and their decentralized management cannot enhance industrial scale. The absence of high-standard quality systems compromises the assurance of production, harvesting, packaging, and delivery processes. Coupled with most farmers' neglect of hygiene in production environments, the quality and packaging of final deliveries fall short of expectations.

The pricing advantage of Chinese products has always been evident. However, in today's homogenized competition, reducing prices for long-term gain is no longer an option. Instead, brand reputation is the key to consolidating customer loyalty. For instance, overseas Chinese will often pay for the reputation of their hometown brands. For such individuals with good income, price is not the primary consideration; Rather, they value brand reputation as a factor that will become more stable over time. The geographical identification of agricultural products is widely recognized for its unique natural environment and objective cultural history, making them more attractive to overseas consumers.[8] The inadequate product traceability system in CBEC transactions affects consumers' trust in product origins. Especially during period of epidemic, consumers pay more attention to food safety and hygiene, making non-traceable products likely to be returned or exchanged at the terminal delivery phase, with the seller bearing the losses. Due to the lack of immediate and transparent information, the risk of information asymmetry between buyers and sellers can easily

undermine trust between the two parties. Therefore, a comprehensive traceability system is pivotal in bridging the link between CBEC and traditional foreign trade.

4) Technology

Lagging agricultural digitization, lack of digital awareness among production entities. The digitization of agricultural products refers to the accurate and comprehensive control and management of the agricultural supply chain through advanced digital technologies such as big data, cloud computing, and blockchain. This represents a deep integration of digital technology and agricultural industry. Information sharing allows key participants, including producers, third-party platforms, and consumers, to swiftly access product-related data and information.

China is a great agricultural country, yet it is not a global agricultural powerhouse in the technological sense. Compared to European economies such as Italy, it is in the initial stages of developing smart agriculture in terms of mechanization, digitalization, and informatization. The primary players in agricultural CBEC can be categorized into the aforementioned three parties. From the perspective of the relationship between producers and third-party platforms, the lack of robust digital infrastructure, such as sensors and remote monitoring systems, prevents comprehensive monitoring of agricultural product environmental data, especially in rural areas in the southwest, which primarily rely on inefficient repetitive labor. Consequently, the absence of transparent data reduces third-party trust in product safety and quality. From the perspectives of third-party platforms and consumers, due to insufficient confidence in products and transaction frictions, there is a lack of technology in product traceability and logistics tracking, leading to information gaps. Currently, some large CBEC and cross-border logistics enterprises have achieved real-time tracking of products through the development of blockchain technology, while the adoption rate among small and medium-sized enterprises is not high, with varying levels of digitalization among enterprises. From the perspectives of producers and consumers, when their market

perception is weak, producers often cannot accurately capture customers' consumption needs and preferences. In recent years, the coverage of the Internet plus and ICT has been continuously expanding, but facing a vast information flow, producers and consumers cannot efficiently filter and utilize information. This is mainly due to their low educational levels and relatively isolated geographical locations, which are somewhat separated from the national market and are subject to third-party platforms.

The significance of establishing an agricultural product warning system becomes particularly evident in the era of the pandemic. Its objective is to adopt preventive measures against unforeseen events during public health emergencies, aiming to minimize the risk of supply chain disruptions and respond to unorganized production in a short span. With the stable exchange of data and information, each participant can accurately observe the dynamics of the supply chain through an information management system, thereby devising countermeasures. However, we have observed that due to sudden disruptions in supply chains and financial flows, small and medium-sized enterprises (SMEs) are easily eliminated. Therefore, accelerating the digital transformation of enterprises is an inevitable requirement for their sustainable development.

Amidst the trend of digitalization in agricultural production, the demand for information technology professionals is increasingly significant. Notably, the number of newcomers engaging in the fields of information transmission, software, and information technology services has surged sharply accoring to data released by the Ministry of Human Resources and Social Security of the People's Republic of China, yet the majority of traditional farmers still lag behind in terms of internet thinking. Therefore, only by thoroughly transforming the understanding of industrial digitalization at the base of the pyramid can we foster the development of the industry.

PEST Analysis of Obsticales in the CBEC in rual China in the Post-epdemic Era	
Politics	Economics
1. Worsen international Trade environment 2. Frequent regional friction 3. Unstable policy changes	1. Low income of rural residents 2. Backward economic level of rural region 3. Underdeveloped financial market in rural region
Societies	Technoligies
1. A lack of standardization of product quality and safety 2. Farmhouseholds' insuffiecient brand recognotion 3. Lack of consumer confidence in brand 4. Imprfect product tracing system	1. Backward agricultural digitization 2. Increased demand for information technology professionals 3. The importance of early warning system for agricultural products

Figure 5.2 PEST Analysis of Obstacles of CBEC in Rural China in the Post-epdemic Era

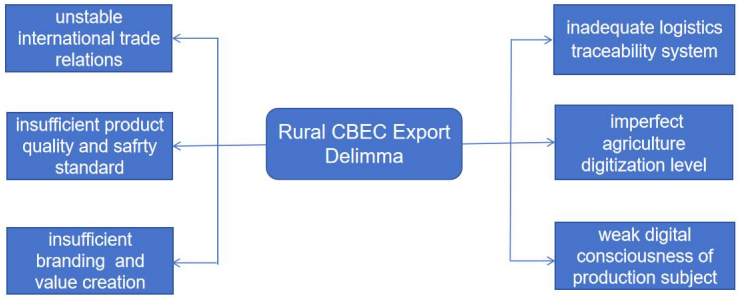

Figure 5.3 Export Dilemma of Rural CBEC in Post-Pandemic Era

CHAPTER 6

Recommendations for the Development of Rural CBEC in Post-pandemic China

Promoting CBEC into rural areas can assist the poor relief the degree of poverty and help backward areas improve the level of economy, which brings new ideas for poverty alleviation to developing countries and regions. In recent years, the sudden COVID-19 epidemic has made the shortcomings in the development of CBEC more prominent, but the opportunities also follow. Therefore, this paper believes that in order to solve the challenges and grasp the opportunities of the development of CBEC in rural areas in the today's post epidemic era, we should start with the construction of rural product brand building, construction of safety traceability system, the construction of information sharing platform, the construction of smart logistics system, the promotion of interdisciplinary talent mode and the strengthening of rural digital construction.

6.1 Advancing Brand Building to Enhance Product Value

Currently, the export products of rural CBEC in China mainly consist of primary agricultural products and low value-added agricultural products. The low degree of product brand building and low overseas visibility are key factors constraining the export of rural CBEC. Looking at the experiences of developed countries, establishing and marketing local well-known brands is a powerful force for expanding sales channels. For example, cherries from New Zealand, durians from Thailand, dairy products from the United States, and watches from Germany have established deep influences globally, making them more brand valuable and competitive compared to similar products from other regions. With the growth of consumer purchasing power and diversified demands, people no longer just focus on prices but pay more attention to the brand value based on food safety and quality, allowing consumers to gain confidence and trust in the brand, thereby promoting the formation of consumption habits. China's diverse geographical

and cultural factors have created various agricultural products. We can fully utilize natural and cultural factors to tell different stories on different products. For example, the promotion and preservation of geographical indications for agricultural products in some regions crack down on counterfeit products by establishing relevant protection departments, endowing products with unique and irreplicable values, and enhancing producers' brand protection awareness. In terms of product branding in rural CBEC, enterprises and government departments need to actively cooperate to address financing difficulties, integrate local culture and ethnic characteristics under the guidance of professional teams, and endow products with vitality. Developed markets have a strong demand for organic food, and China's rural CBEC can highlight green organic as a selling point, emphasizing greenness in packaging, image, and information, creating slogans for green sustainable development in production and marketing to differentiate from traditional single marketing models. Companies can establish independent websites or brand images in overseas markets through various social media. Using the internet as a carrier for information transmission saves time costs for brand value enhancement, and it is essential to raise the proportion of investment in beautification, mainly because the mainstream consumer group of CBEC is mainly the young generation with unique avant-garde aesthetics. Therefore, showcasing the practicality and personality of products in website construction is crucial to meet the unique aesthetic standards of the younger generation. Whether it is agricultural products or low value-added primary products, if players want to further enhance brand power, they must first highlight product quality, then improve service awareness, establish professional overseas marketing teams, cooperate with local e-commerce companies, and accelerate the localization development of products.

6.2 Emphasizing Product Quality and Safety, Promoting the Construction of Product Traceability System

The fundamental purpose of establishing a product traceability system is to trace the origin, production time, and transaction process of products. Due to the transparency of the production and sales process, the purchasing confidence of consumers, the

accuracy and timeliness of regulatory agency accountability will be improved. Mutual trust and respect between consumers, producers, and third-party platforms are built on the basis of information exchange capabilities. The traceability framework not only enhances consumers' trust in product quality but also enables governments to strengthen the establishment of food safety supervision systems. Due to the increase in trust in imported products, China's food quality and safety issues occur from time to time, and export agricultural products are still vulnerable due to the relatively high risks of carrying viruses and perishability. In the post-pandemic era, consumers and regulatory agencies have stricter requirements for the traceability of products, hygiene, and circulation. This requires third-party quality inspection agencies to be fair and impartial in quality access, providing objective basis for safety traceability. Governments should also strengthen supervision and review of third-party testing agencies to ensure that the test results are not affected by any external factors. Regulatory authorities have challenges in overseeing product quality and safety in CBEC transactions due to their virtual and cross-regional nature. Blockchain, with its characteristics of anti-tampering and decentralized information, provides transparent and open traceable information for regulatory agencies and consumers, ensuring the safety and accuracy of circulation from upstream to downstream. For example, Alibaba's FreshHema, a new type of supermarket, attaches traceable QR codes on agricultural product packaging, allowing consumers to scan through the app to obtain information such as origin, production time, processing merchants, and food safety certification. Governments and enterprises should comprehensively promote the use of big data and blockchain technology for online tracing of production and transaction sources, scientifically evaluate the production environment of physical factories, ensure the flow and sharing of information while integrating offline and online product information. The traceability framework needs to achieve comprehensive information tracing, not just a certain node, but ensure that the information of each node is queryable, forming a complete and comprehensive information sharing system.

6.3 Paying Attention to Policy Changes, Building CBEC Information Sharing Platform

Different countries have different import and export policies for CBEC, and cannot be generalized. For instance, in China, the tax-free threshold for individuals purchasing overseas products via CBEC platforms is set at 5,000 yuan per year. Thailand has abolished the previous VAT exemption of 1,500 Thai baht and imposed a 7% VAT on all valuable goods. The European Union has also revoked the previously established VAT exemption policy for goods below 22 euros. Policy changes related to the industry directly affect the profitability and layout of enterprises. Moreover, in recent years, international trade frictions and barriers have been continuous, and it is worthwhile to establish a CBEC information sharing platform. The information sharing platform integrates resources such as cross-border trade practice experience, information collection, and professional knowledge in various links, constructing a comprehensive data information platform that integrates policy, economic, social status, and cultural changes, responding to the negative impact of various factors on CBEC through information sharing. Especially in the face of potential trade friction risks, experts accurately and deeply analyze policies from a macro perspective, helping enterprises foresee crises, grasp new directions in the market, while enterprises study market changes from a micro perspective, achieving forward-looking risk warnings. With the support of big data, information such as commodities, logistics, and policies is published on the platform, and risks are simulated and evaluated through data analysis, ultimately minimizing the risks and losses that enterprises will bear. With the support of the information sharing platform, enterprises can timely formulate countermeasures with partners when facing market risks, clarify division of responsibilities, and protect their legitimate rights and interests.

6.4 Building an Intelligent Logistics System

Logistics connects the upstream and downstream links of products, and efficient product circulation speed improves consumer satisfaction. Logistics upgrading can be

carried out from two aspects: increasing infrastructure investment and building intelligent logistics. Currently, the logistics efficiency of China's rural CBEC in rural areas is still low compared to urban areas, especially in economically backward central and western regions, where the "last mile" problem is prominent. The logistics organization planning in eastern coastal areas is complex, and the logistics network is dense. However, due to inadequate planning and funding, roads in towns and townships in central and western regions are still in a state where public transportation is inaccessible, the number of express delivery stations is relatively small, and the organization is chaotic, lacking unified and regular management. If the direction of transit routes moves from the western region to the eastern coastal areas, it will inevitably affect the efficiency of the "last mile" due to the "first mile" problem. The advantages of the east cannot compensate for the overall impact of the disadvantages of the west. Underdeveloped transportation systems and chaotic logistics organization are the primary hindrances to the development of logistics, ultimately reducing the timeliness of the entire transaction. Therefore, the government should strengthen rural infrastructure construction under practical and feasible planning and funding conditions, avoid the abuse of rent-seeking. Regarding the technological advancement of logistical facilities and equipment, the requirements for cold chain logistics are high for cross-border agricultural product transactions. Long-distance transportation not only needs to ensure product quality but also control costs. Therefore, this article proposes the feasibility of building intelligent logistics. Smart logistics is a logistics system that merges data and intelligent technology. It operates from the perception layer to the decision-making layer and finally to the execution layer. The Internet of Things technology supports the perception layer, while the network layer collects, organizes, stores, and processes the data from the perception layer; the decision-making layer formulates scientific and reasonable decisions; and finally, logistics equipment provides services to logistics enterprises. From the perspective of technological capabilities, the system construction utilizes big data for information integration and analysis, the Internet of Things for immediate monitoring of the entire logistics process, and artificial intelligence to improve the accuracy of goods sorting. Smart logistics for cross-border transportation must cooperate deeply with overseas enterprises, combine domestic and

foreign data, formulate and match the best transit routes for cross-border products, not only improve resource utilization but also reduce energy consumption, and practice the scientific concept of low-carbon development. Smart logistics should be led by the government, supported by large enterprises, and participated by small and medium-sized enterprises to form an ecological logistics circle with all-round participation on the basis of reasonable distribution of interests, benefiting all parties. Currently, under the "Belt and Road" initiative, we can cooperate with trading partners to build intelligent logistics pilot zones, steadily promote information technology exchanges, and explore the direction of the post-pandemic era.

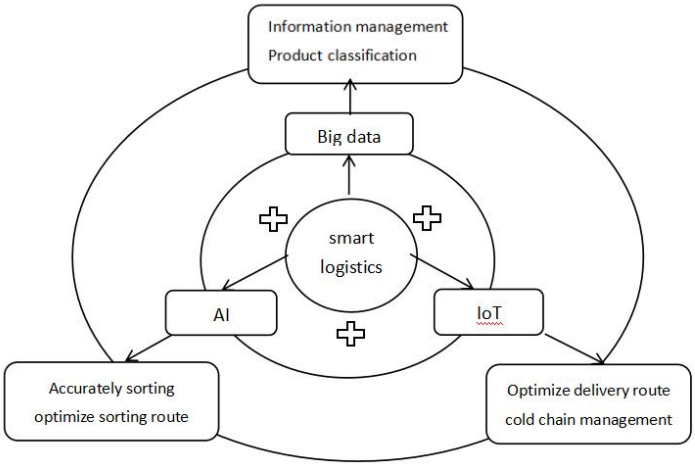

Figure 6.1 Smart Logistics Technology Application Pattern

6.5 Promoting Interdisciplinary Talent Models

The growth of CBEC relies on the cultivation of interdisciplinary talents. Interdisciplinary talents possess commercial and market knowledge, technical skills, analytical capabilities, and business practice abilities, which are considered the soft power to support CBEC. Rural CBEC lacks skilled employees, and local farmers have not received vocational training, resulting in low industry recognition. As the saying goes, "Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime." To fundamentally change the cognition of employed farmers, it is

necessary to focus on promoting vocational training for rural CBEC in rural areas. Currently, there are too many elderly people in towns and townships, and it is difficult to change their minds through education fundamentally. Therefore, starting from energetic young people and then radiating to the elderly is necessary. Youth are eager to learn through education, particularly those with practical skills. Vocational and technical education, along with internships in companies focusing on intelligent logistics, big data, artificial intelligence, and the Internet of Things, are effective methods for nurturing talent. The government should provide guidance to establish vocational and technical education programs and related products in different regions based on the current state of CBEC. This can be achieved through investments in funds and projects. Proposals include the establishment of public practice training bases or strengthening practical exchange project cooperation with enterprises to provide vocational education learners with a more comprehensive learning experience. This is also the combination of education and poverty reduction through e-commerce, concentrating on sustainable development and increasing the formation of practical talents. From the perspective of higher education, some universities have opened majors related to CBEC, but only a few talents possess comprehensive capabilities. The complexity of the industry makes it difficult for courses to cultivate interdisciplinary capabilities such as foreign languages, foreign trade knowledge, policy interpretation, cultural analysis, law, and operations, all of which are necessary for CBEC operations. Professional institutions can not only provide practical knowledge but also carry out comprehensive research in particular topics, offering robust assistance for the upgrading and innovation of CBEC. Therefore, it is encouraged that teaching and research institutions in various higher education institutions establish platforms for cultivating CBEC talents, combine students with actual work through cooperation with enterprises, enable them to master practical skills, and improve the quality and competitiveness of employment.

CHAPTER 7

Conclusion and Outlook

7.1 Conclusion

This paper thoroughly examines the stability of rural CBEC development in post-pandemic China. It suggests measures such as improving brand building, focusing on product quality and safety, keeping track of policy changes, strengthening logistics efficiency, promoting interdisciplinary talent models, and fostering the rural digital economy.

Developing brand building is essential for improving the competitiveness of Chinese rural CBEC export products. Creating recognizable local brands and incorporating local natural and cultural elements can provide products distinctive cultural and brand significance, ultimately boosting customer trust and confidence in the products and encouraging the development of consumer habits.

Emphasizing product quality and safety and advocating for the establishment of a traceability system are crucial steps to guarantee the sustained growth of rural CBEC. Implementing a robust product traceability system, increasing oversight of third-party quality inspection firms, and utilizing technology such as blockchain can improve consumer confidence in products.

Monitoring policy changes and establishing a CBEC information sharing platform can assist firms in promptly adapting to market changes and policy modifications, thereby minimizing operational risks and fostering the industry's healthy growth.

Enhancing logistical efficiency is essential for facilitating efficient transactions in rural CBEC. Enhancing logistics efficiency and service quality can be achieved by measures including boosting infrastructure investment and developing intelligent logistics systems. This can lead to shorter product circulation cycles and improved customer shopping experiences.

Promoting multidisciplinary talent models and growing the rural digital economy are long-term strategies to promote sustainable development in rural CBEC. Enhancing talent development and education in rural regions, enhancing farmers' digital literacy and skills, and boosting policy backing for rural CBEC can foster a conducive atmosphere for the industry's growth.

In the future, Chinese rural CBEC will have more development potential due to advancements in technology and increased globalization. We anticipate the collaborative efforts of governments, businesses, and all societal sectors to enhance the policy environment, enhance the business environment, and foster the continuous and healthy growth of the rural CBEC industry, thereby aiding in achieving the goals of the rural revitalization strategy.

7.2 Limitation and Outlook

Although this paper has conducted a comprehensive analysis and discussion on the stability of rural CBEC development in post-pandemic China, there are still some research limitations:

Insufficient research on regional differences: This paper mainly focuses on overall trends and general recommendations, but does not delve into the development of rural CBEC in different regions of China and its differences. The development level, resource endowment, and policy support in different regions may have different impacts on the

development of the rural CBEC industry chain, so it is essential to further explore the impact of regional differences on industry development.

Inadequate exploration of technology innovation and application: While smart logistics technologies are referenced, there is a lack of in-depth discussion of technical innovation and its application in rural CBEC. technical advancements like artificial intelligence, big data, and blockchain are increasingly being used in rural CBEC. This trend presents both opportunities and challenges, highlighting the importance of conducting thorough study on technical innovation and application.

Insufficient research on environmental impact and sustainable development: This paper does not fully discuss the potential environmental impact of rural CBEC development. As rural CBEC grows, it could affect resource consumption and the ecological environment. Therefore, thorough research on its environmental impact and sustainability is essential.

Future study should focus on addressing the mentioned restrictions, exploring many facets of rural CBEC development, and offering full theoretical and practical support for the industry's healthy growth.

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CURRICULUM VITAE

Author's name	Ms. Huilin Lei	
Place of Birth	Sichuan, China	
Education	2019-2024	Master of Science, Digital Innovation and Financial Technology, International College of Digital Innovation and Financial Technology, Chiang Mai University
	2015-2019	Bachelor of Arts, Thai Language, Chengdu Institute of Sichuan International Language University
Scholarship	Presidential Scholarship	
Publications	Huilin Lei, "A Study on China-ASEAN Cross- Border E-Commerce Logistics Based on the New International Land-Sea Trade Corridor," IC4E '22: Proceedings of the 2022 13th International Conference on E-Education, E-Business, E-Management, and E-LearningJanuary 2022, 360–364https://doi.org/10.1145/3514262.3514290	
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