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The Characteristics and Cultivation Path of the Textile and Apparel Industry Cluster in the Yangtze River Delta

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Abstract

As an important livelihood industry in China, the textile and garment industry plays an irreplaceable role in increasing foreign trade income, developing the domestic economic cycle, fully promoting employment, accumulating construction funds, and stabilizing employment. Shanghai, Jiangsu, and Zhejiang along the lower reaches of the Yangtze River are the birthplaces of China's modern textile and garment industry, with highly concentrated garment enterprises, rich and high-quality labor resources, exquisite craftsmanship, well-known domestic and international brands, as well as distinctive and innovative textile industries and products. This study discusses the research trends, characteristic facts, and existing problems of the textile and garment industry in the Yangtze River Delta region. It puts forward targeted policy suggestions to further improve the theoretical framework of related research.

Keywords

Yangtze River Delta Region; Textile and Garment; Industrial Agglomeration.

1. Introduction

As an important livelihood industry in China, the textile and garment industry plays an irreplaceable role in increasing foreign trade income, developing economic internal circulation, fully promoting employment, accumulating construction funds and stabilizing employment. Shanghai, Jiangsu and Zhejiang along the lower Yangtze River are the birthplace of China's modern textile and garment industry. They have a high concentration of garment industry enterprises, abundant high-quality labor resources, exquisite technology, well-known domestic and foreign brands, and distinctive innovative textile industry and products. According to the latest revision of the National Economic Industry Classification by the National Bureau of Statistics in 2019 (GB/T+4754-2017).

Table 1. Main economic indicators of China's textile and garment industry in 2021-2022

Year and growth	Number of enterprises (units)	Operating income (100 million Yuan)	Total profit (100 million Yuan)	Average number of employees (10,000)
2021	96723.00	124006.32	6610.79	1579.35
2022	90734.00	106925.54	4486.26	1456.76

Data source: China Industrial Statistics Yearbook 2023, China Industrial Statistics Yearbook 2022.

The report to the Party's 20th National Congress pointed out that in building a modern industrial system and promoting a new type of industrialization, the central task of the Party is to fully build a great modern socialist country, achieve the second centenary goal, and comprehensively promote the great rejuvenation of the Chinese nation with Chinese-style

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modernization. The modern industrial system is the material and technological foundation of a modern country. The textile industry is the pillar industry of China's national economy and social development, the basic industry to solve the people's livelihood and beautify life, and the advantageous industry of international cooperation and integration development. The Party's 20th National Congress has pointed out the way forward for the development of the textile and garment industry and provided basic guidelines.

It can be seen that the number of enterprises, operating income, total profit and average number of employees in each subsector of the textile and garment industry in 2022. In terms of the number of enterprises, the number of enterprises in the textile industry, textile and garment industry, the number of enterprises in the two subsectors accounted for 20.45% and 13.64% respectively, followed by cotton textile, printing and dyeing finishing and woven garment manufacturing, reaching 8.73% and 6.87%, the total number of enterprises in these four subsectors accounted for 49.68% of the country. In terms of operating income, the textile industry, textile and garment industry, cotton textile and printing and dyeing finishing, woven clothing manufacturing accounted for 21.66%, 12.10%, 11.11%, 7.16%, the total operating income of these four subsectors accounted for 57.52% of the country; In terms of total profit, the textile industry, textile and clothing industry accounted for 18.66% and 15.10% respectively, followed by woven clothing manufacturing and cotton textile and printing and dyeing finishing, reaching 9.47% and 8.27%, the total profit of these four subsectors accounted for 51.51% of the country; In terms of the number of employees, the textile industry, textile and garment industry accounted for 18.11% and 15.89% respectively, and these two industries accounted for more than 30% of the textile and garment industry, followed by the industries with concentrated labor force are cotton textile and printing and dyeing finishing (9.44%), woven garment manufacturing (8.91%). The total number of employees in the above four industries has accounted for 52.35% of the total number of employees in the textile and garment industry.

According to the relevant data of the General Administration of Customs of China, the total export of textile raw materials and textile products in 2023 reached 1,727.95 billion yuan, and the total export of textile and garment industry in the Yangtze River Delta region was 1,052.018 billion yuan, accounting for 60.88% of the national proportion. By city, Shanghai's exports totaled 108.253 billion yuan, Jiangsu's 108.883 billion yuan, Zhejiang's 601.48 billion yuan and Anhui's 29.12 billion yuan.

According to the data of China Textile Industry Development Report 2022-2023, the operating income of enterprises above designated size in the textile industry (excluding textile machinery manufacturing industry) in 2022 was 5159728506 million yuan, which was affected by special circumstances such as the new coronavirus epidemic, down 0.84% year-on-year. By industry, the operating income of the textile industry in 2022 reached 26,157,6185 million yuan, and the operating income of the textile and garment industry was 14,5388,930 million yuan. The export delivery value of the textile industry was 27,748,013 million yuan, and the export delivery value of the textile and garment industry was 32,268,064 million yuan.

In summary, among the 43 sub-sectors of the textile and garment industry, the textile industry, textile and garment industry, woven garment manufacturing and cotton textile and printing and dyeing finishing industries account for a larger proportion in the textile and garment industry and have a more far-reaching impact.

2. Literature Review

This paper reviews the literature from the aspects of textile and garment industry and textile and garment industry agglomeration.

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2.1. Research Trends of Textile and Garment Industry

The research trends of the textile and garment industry mainly include the development path of the textile and garment industry, the performance evaluation of regional textile and garment industry, and the transformation and upgrading of the textile and garment industry.

(1) In terms of the development path of textile and garment industry. Cao Qiuling et al. (2021) reviewed the development of China's textile industry since 1949 according to the time thread.[1] Liu Yating et al. (2023) reviewed the development process of China's textile and garment industry in the past 45 years of reform and opening up, sorted out and summarized its development results, combined with the problems and challenges faced, prospected the industry, and put forward relevant suggestions[2]. In their paper, Yao Qiuhui et al. (2018) analyzed the trade network of the textile and garment industry during the research period from 1995 to 2015, described the spatio-temporal evolution of the global garment trade network, identified the main agglomeration areas, and reflected their trade status in the network through the strength of trade links inside and outside the agglomeration areas. It is found that the global garment trade network experienced a transfer path of first diffusion and then agglomeration from 1995 to 2015, and in this process, three stable agglomeration areas were formed: China, South Asia and Southeast Asia agglomeration area, America agglomeration area, and Europe agglomeration area[3]. Wu Aizhi et al. (2017) reviewed, sorted out and summarized the research on the evolution mechanism of the spatial layout of the textile and garment industry, spatial layout evolution of global textile and garment industry and spatial layout evolution of China's textile and garment industry. The research shows that in the face of globalization, the study on the spatial layout evolution of China's textile and garment industry not only needs to pay more attention to the layout evolution among large regional plates in China, but also needs to pay more attention to the layout adjustment within provinces or metropolitan areas. It is necessary to pay attention to the development of textile and garment enterprises in central and western China. It is more necessary to interpret the adjustment and optimization of the spatial layout of textile and garment enterprises in the new era from a global perspective.[4]

(2) Performance evaluation of regional textile and garment industry. Min Xiaoyao et al. (2024), based on the investigation of the textile and garment industry in Jiangxi Province and relying on big tax data, looked for the shortcomings of the development of the textile and garment industry, and put forward countermeasures from the aspects of precise investment promotion, active establishment of platforms, technological innovation, policy support, and introduction of talents, so as to accumulate momentum and empower the high-quality development of the textile and garment industry chain[5]. Ruan Jianqing et al. (2021) studied the impact of rising costs on China's labor-intensive industries based on the Ningbo textile and garment industry cluster. Based on the perspective of SWOT analysis[6], Chen Li et al. (2024) analyzed the development trend of Xinjiang cotton and textile and garment industry clusters in four aspects: strengths, weaknesses, opportunities and challenges, and proposed countermeasures and suggestions for accelerating the construction of high-quality development of Xinjiang cotton and textile and garment industry clusters from six aspects[7]. Liu Ningbo et al. (2017) used the principal component analysis method to build the evaluation index system of textile and garment industry competitiveness based on Porter's diamond model, and evaluated the competitiveness of textile and garment industry in 31 provinces and cities in China in 2014. The results show that the textile and garment industry in the 11 provinces and cities of the Yangtze River Economic Belt has a prominent position in China, but the industrial competitiveness of the provinces and cities shows a descending distribution pattern, and then the suggestions are put forward to narrow the development gap of the textile and garment industry in the lower, middle and upper reaches and promote the coordinated development of the industry.[8]

(3) Research on the transformation and upgrading of textile and garment industry. Xiong Xing et al. (2020) will accelerate industrial transformation and upgrading by studying the ways of

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deepening the supply-side structural reform of China's textile and garment industry, expanding the domestic textile and garment consumer market, consolidating its position in the global supply chain, and forming a new development model of the culture-led textile and garment industry under the background of new trade situation, technological forms and demand forms. Thus it can satisfy the requirements of high-quality development of our economy.[9] Liu Zhong (2023) explores the logical mechanism and realization path of the industrial Internet enabling the digital transformation of traditional industries by taking the textile and garment industry as an example, aiming at the problem of the insufficient role of market in allocating resources in the transformation of traditional industries, and finds that the decisive force is the market. Based on the selection of the market, the software integrated cloud architecture, big data analysis capabilities, full-coverage intelligent perception functions, and the advantages of factor interconnection of the industrial Internet can promote the textile and garment industry to make up for the shortcomings of information technology, move toward a customized model, improve labor productivity, and carry out integrated innovation.[10] Lin Tao (2019) studied the trade development countermeasures of China's textile and garment industry against the background of the escalation of Sino-US trade friction. Lin Tao believes that China should speed up the structural reform of textile industry and promote the innovation and development of enterprises. Accelerate outbound investment and enhance the position of global textile and garment supply chain; Expand the market and reduce dependence on the United States; Enhance the awareness of enterprises to protect intellectual property rights and take the initiative to deal with infringement disputes[11]. Zhang Xinle et al. (2017) took Jiangsu and Zhejiang textile and garment industry as an example, discussed the constraints of non-marketization of factors on the upgrading of textile and garment industry based on the investigation of its industrial development status, and studied the countermeasures to eliminate the constraints by referring to the practical experience of Western Europe, Sweden, Spain, Vietnam and other countries. Using the input-output theory[12], Zhang Jianlei et al. analyzed the economic and technological relations between the textile industry and its upstream and downstream industries, pointed out the importance of upstream raw material supply and downstream garment production to the development of the textile industry, and proposed that the cooperation between the information industry and the textile industry should be strengthened to promote the use of textile products in the service industry[13]. Guo Mingquan et al. analyzed the path of innovation and development of China's textile industry clusters, including six aspects: talent, technological innovation, brand, information technology, logistics, and green.[14]

2.2. Research Trends of Textile and Garment Industry Agglomeration

The research trends of textile and garment industry clusters mainly include the measurement of textile and garment industry clusters, cluster motivation, cluster effect, location migration, and so on.

2.2.1. Measurement of Textile and Garment Industry Clusters.

Krugman (1991) used the principles and methods of the Lorenz curve and Gini coefficient to construct the spatial Gini coefficient to determine the equilibrium degree of spatial distribution of industries. Based on the data of the relevant manufacturing industries in the United States, he analyzed the number of employees in the region and the market analysis of the specialization degree of the manufacturing industry in the United States and found that the production of many industries is highly concentrated in a few places[15]. To solve the distortion problem of the Gini coefficient, Ellison & Glaeser (1997) proposed a new agglomeration index to measure the degree of industrial spatial agglomeration. Based on Krugman (1991), they proposed an index EG to analyze the agglomeration level of related industries in the United States. Compared

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with other indicators, this index is very complicated, and it also improves the deficiency of the spatial Gini coefficient.[16]

2.2.2. Research on the Characteristics of Textile and Garment Industry Agglomeration.

The textile and garment industry is the traditional dominant industry in China, so the related research on the textile and garment industry agglomeration is very rich. Tang Chengli et al. (2020) analyzed the spatial distribution and industrial agglomeration characteristics of the development zones of the Yangtze River Economic Belt by using the methods of nearest neighbor index, Ripley's L function, and kernel density estimation, and the results showed that the development zones of the Yangtze River Economic Belt generally presented significant agglomeration distribution characteristics, with dense east and sparse west, strong east and weak west, and different east and west sections. The eastern section of the Yangtze River Economic Belt is mainly concentrated in capital and technology-intensive industries such as equipment manufacturing, communications and electronics, automobile manufacturing, new materials, and biomedicine, while the central and western sections are concentrated in capital and labor-intensive industries such as chemical industry, metal processing, food manufacturing, textile, and garment. It is necessary to strengthen the multidimensional and benign interaction between the middle and lower reaches of the economic belt, pay attention to green development, innovative development, and structural optimization, and further enhance their leading and supporting role in the high-quality development of the Yangtze River Economic Belt.[17] Duan Wenping (2008) studied the distribution of textile and garment industry clusters in Henan province, the characteristics and advantages and disadvantages of textile and garment industry clusters in different regions, and made a comprehensive analysis of the competitiveness of Henan textile and garment industry clusters by using Porter's "diamond model". On the basis of theoretical analysis[18], Tang Xubing et al. (2008) used the data of China's textile and garment industry to represent industrial agglomeration with three indicators, such as industrial scale, specialization index ,and average enterprise scale, and conducted an empirical study on the relationship between industrial agglomeration and vertical specialization division of labor. The empirical results showed that: industrial scale has a great impact on vertical specialization division of labor. The specialization index and the average size of enterprises have little influence on the vertical specialization division of labor. [19]Wang Baozhong et al. (2020) selected the innovation input and output data of A-share listed companies in China's textile and garment industry from 2012 to 2017, and used data envelopment analysis (DEA) method to evaluate the innovation performance of listed enterprises in the textile and garment industry. Taking 2014 as the time node, this paper analyzes the changes in the innovation performance of textile and garment enterprises before and after the implementation of the "Belt and Road" Initiative, and analyzes the innovation performance of textile and garment enterprises from the perspectives of enterprise ownership, regional differences, and industrial agglomeration. The results show that since the implementation of the Belt and Road Initiative, the innovation performance of listed enterprises in China's textile and garment industry has shown a rising trend on the whole. However, from the perspective of heterogeneity, the overall innovation performance of state-owned textile and garment enterprises is better than that of private enterprises, and the improvement speed of innovation ability of private enterprises is growing rapidly. The innovation performance of enterprises in industrial agglomeration areas is better than that of enterprises in non-industrial agglomeration areas, and the innovation performance of enterprises in textiles sector is better than that of enterprises in brand clothing sector.[20]

2.2.3. The Motivation of Textiles and Garment Industry Cluster.

Marshall (1920) found that the main drivers of industrial agglomeration are externalities and economies of scale.[21] Krugman (1991) found that factors such as transportation cost, market

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demand, and external economy can cause industrial agglomeration by establishing spatial economy theory. Dai Lei and Wang Fei (2010) found that based on Marx's theory of circulation, division of labor ,and cooperation, the motivations of industrial agglomeration include enterprises choosing specific regions for production and pursuing and sharing the collective productivity of agglomeration regions in order to shorten circulation time and reduce circulation costs.[22] Mei Yan and Jiang Yuqing (2020) believe that the extensive application of Internet technology will improve the sharing of cluster elements and the synergy of capabilities, which is conducive to the upgrading of industrial structure[23]. Yang Danping (2009) found that export trade has a significant positive impact on and promotes the degree of industrial agglomeration, and the deepening of industrial agglomeration also has a significant positive impact on the growth of export trade.[24]

2.2.4. Location Relocation of Textile and Garment Industry.

Wu Aizhi et al. (2013) used the location Gini coefficient and local Moran analysis to quantitatively measure the spatial agglomeration degree of the textile and garment industry at the local and municipal level from 2001 to 2009 in a global and local spatial visualization, and tracked and analyzed the industrial transfer path of the industry based on the changes of industrial centers.[25] Wu Aizhi et al. (2017) reviewed, sorted out, and summarized the research on the evolution mechanism of the spatial layout of the textile and garment industry, the spatial layout evolution of the global textile and garment industry, and the spatial layout evolution of China's textile and garment industry. Wang Xiaofang et al. (2002) found that the textile industry of Zhejiang Province, based on tradition, gave full play to its absolute and comparative advantages, and formed a unique block economy, that is, industrial agglomeration, driven by the market and the efforts of the government and industry. This economic model not only forms the competitiveness of textile industry agglomeration in Zhejiang province but also plays an exemplary role in the industrial agglomeration of the broader Chinese textile industry. Based on discussing the agglomeration mode of textiles and garment industry in Zhejiang Province, this paper summarizes the distribution of the agglomeration regions and analyzes the relationship between these regions and their advantages and disadvantages in detail.[26]

3. The Characteristic Fact of Textile and Garment Industry Cluster in Yangtze River Delta

At present, with its unique location advantages and perfect infrastructure, the Yangtze River Delta has formed a textile and garment industry cluster with relatively complete industrial chain and strong supporting ability. The textile and garment industry in the Yangtze River Delta region has a long history and excellent achievements, and the development of the textile and garment industry is ahead of the whole country.

3.1. The Main Economic Indicators Mostly Account for more than 36 Percent of the Country, and the Development Foundation is Good

The Yangtze River Delta is an important textile and garment industry base in China, with a large number of textile and garment enterprises and high-quality and abundant labor resources, and occupies an important position in the textile and garment industry in the country. In 2022, the operating income of the textile industry in the Yangtze River Delta region reached 1510.496 billion yuan, and the total profit reached 54.56 billion yuan, accounting for 41.84 and 36.02 of the same industry in the country respectively. The textile and garment industry employed 2.032 million people. In particular, the development of Zhejiang Province and Jiangsu Province is mainly, and the proportion of Anhui province and Shanghai is relatively low.

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3.2. The Textile and Garment Industry Location Quotient Reached 1.47, the Trend of Clustering is Significant.

Location quotient can reflect the level of industrial agglomeration in a region. In this paper, two methods are used to calculate the location quotient: one is the ratio of the operating income of the textile and garment industry above designated size in the whole country to the operating income of the manufacturing industry in the whole country. It can be seen that the location quotient of the textile and garment industry in the Yangtze River Delta region has reached a relatively high level, and the location quotient calculated by business income is 1.52 and 1.47. In terms of provinces and cities, Zhejiang's textile and garment industry has the highest location quotient, which is 2.35 based on business income and 1.97 based on the number of employees. It is followed by Jiangsu Province, which has a location quotient of 1.52 based on business income and 1.42 based on the number of employees.

3.3. Government Policy Support

The Central Committee of the Communist Party of China and The State Council issued the Outline of the Yangtze River Delta Regional Integration Development Plan to jointly promote the high-quality development of the manufacturing industry. We will formulate and implement a plan for the coordinated development of the manufacturing industry in the Yangtze River Delta, comprehensively raise the level of development of the manufacturing industry, and build a national cluster of advanced manufacturing industries in line with the direction of cluster development. Focusing on the ten fields of electronic information, biomedicines, aerospace, high-end equipment, new materials, energy conservation and environmental protection, automobiles, green chemicals, textiles and clothing, and smart home appliances, we will strengthen cooperation in industries with regional advantages, promote the upgrading and transformation of traditional industries, build a number of national strategic emerging industrial bases, and form several world-class manufacturing clusters. It can be seen that the textile and garment industry is one of the important industries in the Yangtze River Delta region to build a world-class advanced manufacturing cluster.

Shanghai will include textile and garment industry fashion consumer goods industrial cluster as a key industry. On March 1, 2024, the 32nd East China Import and Export Fair China Fair (hereinafter referred to as "China Fair") opened at the Shanghai New International Expo Center, which will fully showcase the important achievements and innovation highlights of the high-quality development of foreign trade in East China. It mainly reflects the strong foreign trade growth momentum and cutting-edge innovation trend of apparel, textile fabrics, household goods, decorative gifts and other industries. Shanghai Advanced Manufacturing Industry development "14th Five-Year Plan" (Shanghai Government Office issued (2021) No. 12) pointed out: With the three leading industries of integrated circuits, biomedicine and artificial intelligence as the guide, we will vigorously develop six key industries of electronic information, life and health, automobiles, high-end equipment, advanced materials and fashion consumer goods, build a "3+6" new industrial system, and build high-end industrial clusters with international competitiveness.

Jiangsu Province focuses on developing advanced manufacturing clusters such as high-end textile clusters. Jiangsu Province "14th Five-Year" high-quality development plan for manufacturing industry (Su Government Office (2021) No. 51) pointed out: During the "14th Five-Year Plan" period, focusing on emerging areas and highlighting characteristics and advantages, we will strive to create 6 advanced manufacturing clusters with international leading or international advanced comprehensive strength, cultivate 10 advanced manufacturing clusters with domestic leading comprehensive strength, promote the optimization and upgrading of the whole industrial chain, and constantly enhance the international competitiveness, innovation and control of the industrial system. Among them,

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the textile and garment manufacturing cluster ranks fifth. Focus on the development of high-end textile clusters, focusing on the research and development of new textile fiber materials, advanced textile product development, creative design, brand promotion and other high value-added links, vigorously develop high-quality brand clothing, functional high-grade home textiles, functional textiles, smart textiles, industrial textiles, breakthrough in high-performance fibers, textile green processing, recycled fibers and other technologies. Build a state-level advanced functional fiber innovation center at a high level, improve the intelligence and green level of chemical fiber, spinning and weaving, printing and dyeing, clothing and home textile and other links, and build an internationally advanced high-end textile cluster with comprehensive strength.

Zhejiang Province focuses on developing advanced manufacturing clusters such as modern textiles and clothing. Modern textile and garment industry cluster as an important part of the "415X" advanced manufacturing cluster has been highly valued. "415X" advanced manufacturing cluster is a concept pointed out by the 15th Party Congress of Zhejiang Province. "4" refers to four trillion-level world-class advanced industrial clusters focusing on the development of next-generation information technology, high-end equipment, modern consumption and health, green petrochemicals and new materials; "15" refers to the cultivation of 15 billion-level characteristic industrial clusters, Specifically for digital security and network communication, integrated circuits, intelligent photovoltaic, high-end software, energy-saving and new energy vehicles and parts, robots and CNC machine tools, energy conservation and environmental protection and new energy equipment, intelligent electrical, high-end ships and offshore equipment, biomedicine and medical equipment, modern textiles and clothing, modern furniture and smart home appliances, oil refining and chemical industry, fine chemical industry, high-end new materials. "X" refers to focusing on the frontier areas of "Internet +", life and health, and new materials, and focusing on cultivating a number of high-growth "new star" industrial clusters of 10 billion, so that they can become the reserve army of characteristic industrial clusters. Zhejiang Province "415X" Advanced Manufacturing cluster Construction action plan (2023-2027) (Zhejiang Zhengfa (2023) No. 4) pointed out: With high-end, intelligent and green internationalization as the main direction of attack, with the "cage change bird, Phoenix Nirvana" as the main starting point, insist on concentrating financial resources to do big things, strive to reshape the manufacturing policy system, and coordinate and promote the six major actions of space exchange, recruitment, enterprise excellence, quality improvement, digital empowerment, and innovation. Accelerate the construction of a modern industrial system with the "415X" advanced manufacturing cluster as the main body, and build a global advanced manufacturing base.

Anhui Province focuses on the cultivation of textile and garment industry and other manufacturing fields. The Guiding opinions of the General Office of the Anhui Provincial People's Government on Cultivating and developing advanced manufacturing Clusters (Anhui Political Office Secretary (2023) No. 55) pointed out that the establishment of provincial-level - state-level - world-class advanced manufacturing cluster gradient cultivation system. Strive to cultivate world-class clusters such as new energy vehicles, intelligent voice and artificial intelligence, advanced photovoltaic and new energy storage in the fields with distinctive industrial characteristics, clear first-mover advantages and strong innovation momentum in our province within 3-5 years; In terms of industrial scale, advanced nature and innovation, it is expected to enter the forefront of the country's advantageous fields, cultivate national clusters such as integrated circuits and new displays, smart home appliances (home), copper and magnesium new materials, bio-based new materials, and intelligent robots, and actively promote the development of world-class clusters; In the future industrial highland leading the scientific and technological revolution and industrial transformation, the national cluster of quantum information, aerospace information, advanced nuclear energy will be cultivated in

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advance. Cultivate and develop about 30 provincial advanced manufacturing clusters with specialization, characteristics and comparative advantages, and about 100 county manufacturing clusters with "one county and one group".

4. Analysis on the Problems of Textile and Garment Industry Cluster in Yangtze River Delta

In recent years, the scale and concentration of the textile and garment industry in the Yangtze River Delta has taken a leading position in China, and has the basic conditions for becoming a world-class industrial cluster. However, the textile and garment industry in the Yangtze River Delta still has a large room for improvement, such as low degree of industrial division of labor and cooperation, imperfect integration mechanism, and lack of innovation ability. Lack of influence in the world textile and garment market.

4.1. The Yangtze River Delta Textile and Garment Industry Brand Effect is Insufficient

According to the analysis of the World Brand Lab, the competitive strength of a region mainly depends on its comparative advantage, and the brand benefit directly affects the formation and development of regional comparative advantage. Brand is an important symbol of the development of a region, the brand drives the growth of regional economy, and the development of regional economy promotes the growth of local brands. Based on the analysis of the brand's financial data, brand strength and consumer behavior and other indicators, the World Brand Lab selected the list of "China's 500 most valuable brands in 2023", and a total of 24 textile and apparel brand enterprises in the country were shortlisted in the list, accounting for 4.80. Among them, there are 14 textile and apparel brands located in the Yangtze River Delta, such as Bosideng, Hongdou, Jinba Men's wear, Heilan Home and other famous brands, their brand awareness and market awareness is much higher than that of enterprises in other parts of the country, but whether compared with Gucci, Dior, Armani and other high-end clothing brands in France, Italy and other European and American countries, Or compared with the fast-moving consumer goods brands such as Zara and Uniqlo, which are popular around the world, there are problems such as low brand value and lack of international visibility.

4.2. The Innovation Ability of Textile and Garment Industry in Yangtze River Delta is Relatively Weak

Looking at the geographical spatial layout of the textile and garment industry in the Yangtze River Delta, we can find that although the Yangtze River Delta borders each other geographically, the agglomeration of the textile and garment industry and the innovation ability of enterprises are not balanced development. As a pilot area of industrial clusters, the base cities (counties), famous cities and famous towns are mainly concentrated in Jiangsu and Zhejiang provinces, while the number of spatial clusters in Anhui Province is scarce, and there is basically no gathering space for textile and garment industry in Shanghai. At the same time, the head enterprises of the textile and garment industry belong to Zhejiang Province and Jiangsu Province, the number of Shanghai is relatively small, and Anhui province basically has no textile and garment head enterprises. However, from the analysis of the average innovation output of the high-quality innovation entities in the textile and garment industry in the three provinces and one city and the innovation entities in different regions, Shanghai outperforms other regions, Anhui enterprises lag far behind other regions, and the abundant cluster and leading enterprises in Jiangsu and Zhejiang provinces have not created fruitful innovation results, and the cluster pilot areas only play a simple agglomeration effect. The development stage is still in the traditional cluster and has not yet been transformed and upgraded into an innovation cluster. Many enterprises are still in the development mode of OEM. The overall

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innovation ability of enterprises is insufficient, lacking original design ideas, and most of them are in the stage of imitation or even copying. Greatly restricted the development of textile and garment industry clusters in the region.

4.3. Yangtze River Delta Textile and Garment Industry Cross-regional Cooperation Mode is Not Mature

The development of the textile and garment industry in the Yangtze River Delta is independent, has not yet formed a joint force, the degree of cooperation between regional enterprises is low, and the results of collaborative innovation are few. The textile and garment industry chain in the Yangtze River Delta region shows a relatively complete structure, among which Shanghai, with its unique fashion atmosphere and resource advantages, has become a major gathering place for clothing design. At the same time, Jiangsu and Zhejiang provinces, with their deep textile manufacturing heritage, focus on the production and processing of clothing materials. However, at present, there is no close system integration between the upstream and downstream of the industrial chain, especially in terms of cross-regional cooperation. This lack of effective integration has led to obvious industrial convergence between industrial clusters and between different regions, such as the emergence of a number of chemical fiber, home textile, weaving, sweater and knitting towns in many famous towns. This phenomenon of industrial convergence not only intensifies the fierce degree of market competition, but also easily leads to blind following among enterprises and repeated market construction. Due to the small scale and low entry threshold of textile and garment clusters dominated by private enterprises in the Yangtze River Delta region, enterprises are easy to fall into the vicious competition of low-price competition and lack of innovation ability and brand awareness. Such industrial isomorphism and vicious competition have seriously restricted the healthy development of industrial clusters, and it is urgent to solve the dilemma by strengthening the integration of industrial chains, promoting cross-regional cooperation and promoting industrial innovation and upgrading, so as to inject new development momentum into the textile and garment industry in the Yangtze River Delta region.

5. Comparative Analysis of Textile and Garment Industry Clusters in Yangtze River Delta, Pearl River Delta and Beijing-Tianjin-Hebei

5.1. Comparison of Textile and Garment Industry Clusters between Yangtze River Delta and Pearl River Delta

5.1.1. Evolution of Spatial Layout of China's Textile and Garment Industry

Before the founding of New China, the textile and garment industry was mainly concentrated in coastal urban areas, with cotton spindles in Shanghai, Qingdao and Tianjin accounting for about 70 percent of the total, and wool spindles in Shanghai accounting for 75 percent of the total. After the founding of New China, the textile and garment industry began to spread to the mainland and raw material producing areas, and Beijing, Hebei, Henan, Shaanxi and other raw material producing areas established a number of new textile industrial bases. Due to the promotion of "three-line construction", by the end of the 1970s, cotton spindles in the cotton-producing area accounted for 2/3 of the country, wool spindles in the wool-producing area accounted for 1/2 of the country, western Inner Mongolia, Xinjiang, Tibet and other provinces and cities have also developed in varying sizes, and the textile industry has basically grown into a variety of industries, but overall in the early stage of development, difficulties and obstacles are more. Development is very slow.

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5.1.2. Economic Comparison of Textile and Garment Manufacturing Industry in Yangtze River Delta, Pearl River Delta and Beijing-Tianjin-Hebei Region

From the perspective of the textile industry, the main business income of the Yangtze River Delta region is 1,023.717 billion yuan, significantly larger than the Pearl River Delta's 219.8 billion yuan and the Beijing-Tianjin-Hebei region's 59.725 billion yuan, and the proportion of the main business income of the three regions accounts for 44.20, 9.49 and 2.58 of the national proportion respectively. In terms of total profit and average number of workers, the Yangtze River Delta region is better than the Pearl River Delta region. The total profit of the Yangtze River Delta region was 38.268 billion yuan, and the average number of employees was 1.1963 million. The total profit in the Pearl River Delta region was 12.654 billion yuan, and the average number of employees was 175,800.

5.1.3. Comparison of Textile and Garment Industry in Yangtze River Delta Region and Pearl River Delta Region

From the comparison of the three regions, the concentration of textile and garment industry in the Yangtze River Delta is greater than that in the Pearl River Delta and Beijing-Tianjin-Hebei region. The location quotient of the Yangtze River Delta, Pearl River Delta and Beijing-Tianjin-Hebei region is 1.33, 0.87 and 0.278 respectively. In terms of location quotient calculated by the number of workers, the Yangtze River Delta, Pearl River Delta and Beijing-Tianjin-Hebei region are 1.33, 0.76 and 0.41 respectively.

From the comparison of the three regions, the concentration of textile and garment industry in the Yangtze River Delta is greater than that in the Pearl River Delta and Beijing-Tianjin-Hebei region. The location quotient of the Yangtze River Delta, Pearl River Delta and Beijing-Tianjin-Hebei region is 1.42, 0.9 and 0.32 respectively. In terms of location quotient calculated by the number of workers, the Yangtze River Delta, Pearl River Delta and Beijing-Tianjin-Hebei region are 1.36, 0.75 and 0.44, respectively.

6. Conclusion

In the face of the bottleneck problems faced by the textile and garment industry cluster in the Yangtze River Delta, this paper mainly introduces countermeasures and suggestions from the aspects of cluster upgrading, talent training, technological innovation and collaborative development, so as to realize the world-class textile and garment industry cluster in the Yangtze River Delta, promote industrial development and change, and realize the transformation from a textile power to a textile power.

6.1. Deepen Division of Labor and Cooperation to Build the Value Chain of Middle and High-end Textile and Garment Brands in the Yangtze River Delta

In the process of promoting the Yangtze River Delta regional textile and garment industry cluster to the high-end of the industrial value chain, we need to rely on the Yangtze River Delta, especially the unique advantages of Jiangsu, Zhejiang and Shanghai, to deepen the regional specialized division of labor and cooperation mechanism.

One is to create brand effect. There are many well-known domestic brands in the Yangtze River Delta textile and garment industry, but their market influence is insufficient and their international competitiveness is weak. No matter what kind of product, a higher brand name and reputation means more consumer preferences, better economic returns, higher market share and wider market influence.

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6.2. Strengthen Innovation Drive and Build the Yangtze River Delta Textile and Garment Innovation Consortium

One is to set up a funding scheme. In the textile and garment industry, especially in the industry with small and medium-sized enterprises as the main body, the capital bottleneck constitutes the core challenge of its development and transformation and upgrading. Although China has gradually built a financing guarantee system for small and medium-sized enterprises, the problem of "financing difficulties" still significantly hinders the growth pace of these enterprises, especially for the traditional manufacturing industry driven by non-high-tech. Therefore, strengthening financial support has become an indispensable part of policy support for textile and garment industry clusters. Specifically, policy making should focus on two main directions: First, through the establishment of special funds and incentive programs, such as "Chemical fiber production Technology Innovation Fund", "Textile Technology Innovation Incentive Award" and "Clothing original design support project", adopt a competitive funding model to encourage the textile and apparel industry cluster in the Yangtze River Delta and its internal enterprises to actively participate in technological innovation and creative design. It aims to enhance the capacity of independent innovation and strengthen the innovation cooperation network. The move will not only help promote industrial upgrading, but also enhance the overall competitiveness of industrial clusters. On the other hand, the implementation of preferential tax policies and financial subsidy measures to directly reduce the financial burden of enterprises, especially for institutions and enterprises engaged in textile and garment technology research and development and original design to give key support. Such financial support can not only stimulate the innovation vitality of enterprises, but also promote the rapid transformation and application of technological achievements. In addition, it is also necessary to consider allocating a certain proportion of funds to support the scale expansion, cross-regional cooperation and industrial chain integration of the existing textile and apparel clusters, so as to further optimize the allocation of resources and enhance the overall efficiency and synergy of the clusters.

6.3. We Will Carry Out Cooperation Demonstrations and Build the Yangtze River Delta Textile and Garment Industry Cooperation Park

One is to strengthen planning and build the overall layout of cluster construction. In order to achieve the grand goal of building a world-class textile and garment industry cluster in the Yangtze River Delta region, the three provinces and one city need to work together to break the administrative boundaries, deepen the division of labor and cooperation in the industrial chain, and jointly draw the grand blueprint for the development of the Yangtze River Delta textile and garment cluster. Under this framework, regional industrial development should focus on building an international fashion center integrating design, research and development, and trade, especially relying on Shanghai's solid industrial foundation and economic vitality, positioning it as the "international fashion fashion design capital" and "international textile research and development center", aiming to promote the deep integration of local industry and international trend. Lead the textile and garment industry to the high-end field of technological innovation and original design. At the same time, Jiangsu and Zhejiang provinces should focus on the breakthrough and transformation of key technologies, strive to improve the research and development and application level of cutting-edge technologies such as chemical fibers, high-tech fibers and biomass fibers, and further consolidate and optimize the industrial chain foundation in the fields of textile fabric production, clothing design and manufacturing. Promote industrial upgrading and transformation by strengthening the commercialization capability of new technological achievements. In the process of undertaking industrial transfer, Anhui Province should pay attention to the deep integration of information and intelligence, and use modern scientific and technological means to improve the efficiency of industrial agglomeration and integration. Especially in the fields of clean printing and dyeing, energy saving and consumption reduction, advanced technologies and applications should be vigorously promoted to promote the green development of the industry.

6.4. Promote Energy Conservation and Consumption Reduction, and Build a First-class Textile and Garment Environment in the Yangtze River Delta

With the increasing global attention to sustainable development, the textile and garment industry is also developing in the direction of green, low-carbon and circular. As an important growth pole of China's economy, the Yangtze River Delta region's textile and garment industry will also pay more attention to the application of energy conservation, emission reduction and environmental protection technologies in the process of transformation and upgrading, in order to reduce energy consumption and environmental pollution, and achieve sustainable development.

First, we will upgrade technologies. The textile and garment industry in the Yangtze River Delta is a traditional advantageous industry with a relatively complete industrial chain development, but there may be a large room for improvement and emission reduction capacity in the existing production equipment and technology of enterprises. The primary task is to conduct a systematic and comprehensive evaluation of the company's existing production equipment and processes. Secondly, based on the evaluation results, the enterprise should begin to develop a detailed technical transformation plan. This program should be closely focused on the goal of energy conservation and emission reduction, the introduction of energy-efficient production equipment and advanced technology, at the same time, the program also needs to consider the transformation cost, implementation difficulty and expected benefits and other factors to ensure the feasibility and economy of technical transformation. These new equipment and technologies should have significant energy efficiency improvement and emission reduction effects, which can directly affect the "pain points" of enterprise energy consumption and emissions, and realize the green upgrade of the production process. Thirdly, in order to ensure that the new equipment and technology can be successfully landed and play the expected effect, the enterprise also needs to organize targeted technical training and on-site guidance to ensure that the new equipment and technology can be quickly integrated into the production process and play the maximum effect.

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