

Historical Connections Between the Development of Ancient Textile Industry and Regional Economic Changes and Optimization of Modern Inheritance Paths

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ABSTRACT This paper explores the historical connections between the development of the ancient Chinese textile industry, covering the Qin-Han to Ming-Qing periods, and regional economic changes, and optimizes modern inheritance paths based on this exploration. Using historical literature, case study, and interdisciplinary research methods, the study systematically investigates the influence of the ancient textile industry on regional economic restructuring, trade-network construction, social structure, and livelihoods. Typical cases, including Jiangnan, the Shu region, and areas along the Silk Road, are used to verify the interactive mechanism between textile production and regional economies. In response to the inheritance difficulties of modern traditional textile techniques, the paper draws on historical experiences of regional division of labor and industrial clustering, and proposes optimization strategies from four dimensions: technical inheritance mechanism, industrial integration, regional characteristic reshaping, and policy guarantee. From the perspective of modern engineering transformation, these historical experiences can also guide the development of smart textiles, electromagnetic-compatible materials, and regional manufacturing clusters that connect heritage knowledge with advanced functional design. The research shows that the ancient textile industry and regional economy formed a two-way mutual-construction relationship, and that its historical experiences remain useful for activating traditional textile techniques and cultivating regional characteristic economies.

INDEX TERMS ancient textile industry, regional economy, industrial clustering, smart textile inheritance, electromagnetic-compatible materials

I. INTRODUCTION

A. RESEARCH BACKGROUND AND SIGNIFICANCE

THE textile industry was one of the earliest industries to form large-scale production in ancient China and an important part of China's traditional manufacturing industry. Since the pre-Qin period, it has established a people's livelihood status of "a key industry supporting the clothing needs of the population", and by the Ming and Qing dynasties, it had become an important source of national finance and taxation. From the perspective of regional distribution, the ancient textile industry showed the characteristic of "dynamic migration with historical evolution": in the pre-Qin period, the textile industry gradually developed from primitive production methods to a textile industry supported by certain production technologies. With the improvement of the quality of textile raw materials and weaving processes, the types of fabrics were no longer limited to cotton, linen, and wool, but also included a variety of silk fabrics, forming

the initial differentiation between the hemp textile industry in the Central Plains and the silk textile industry in the southern region [1,2]; the pattern of "southern strength and northern weakness" was formed from the Sui and Tang dynasties to the Song and Yuan dynasties [3-5]; and specialized industrial clusters were formed in Jiangnan, Shu Region, and Lingnan during the Ming and Qing dynasties [6]. This distribution difference is highly related to regional climate, raw material endowments, and transportation conditions, reflecting the inherent logical connection between the textile industry and regional economic development.

While the study covers the entire ancient period, the Ming and Qing dynasties are emphasized as core cases due to the availability of detailed historical records, with necessary comparisons to the Han and Tang periods to reflect economic structural differences. The Han Dynasty was dominated by the mulberry-silk industry in the Yellow River Basin, with official weaving institutions playing a

leading role; the Tang Dynasty saw prosperous official and private textile workshops in both the north and south, but the economic structure remained agriculture-oriented. In contrast, the Ming and Qing dynasties witnessed the commercialization of the textile industry in Jiangnan, with a mature "raw material-processing-sales" industrial chain.

Scholars at home and abroad have conducted in-depth research on the ancient textile industry and generally recognized its important economic status in the historical process [7-11]. Entering the modern society, the textile industry is a traditional pillar industry and an important people's livelihood industry of China's national economy, as well as an industry with obvious international competitive advantages in China. It plays an important role in prospering the market, expanding exports, absorbing employment, increasing farmers' income, and promoting urbanization [12]. However, in recent years, with the development of high-tech industries and the adjustment of economic structure, some problems such as low production efficiency, outdated equipment, and backward technology in the textile industry have become more prominent [13]. The experiences of "regional division of labor", "industrial clustering development", and "integration of trade, industry and technology" in the ancient textile industry can directly provide path references for the activation of modern traditional textile techniques: for example, the ecological model of "mulberry fish pond" in the Jiangnan textile industry [14] can provide reference for the modern green textile industry; the configuration mode of "professional market + transportation network" in the Ming and Qing textile industry [15] can guide the construction of market channels for current traditional textile products. In the contemporary context, indepth exploration of the historical connections between the ancient textile industry and regional economic changes, and based on this to optimize modern inheritance paths, is of great practical significance for realizing the transformation and upgrading of traditional industries and promoting the coordinated development of regional economies.

B. RESEARCH METHODS AND INNOVATIONS

1) Research Methods

Historical literature method: Based on classics such as *Tiangong Kaiwu* (Exploitation of the Works of Nature), *Nongzheng Quanshu* (Complete Treatise on Agriculture), and *Ming Shilu* (Veritable Records of the Ming Dynasty), combined with local chronicles (such as *Songjiang Fu Zhi* (Gazeteer of Songjiang Prefecture) and *Suzhou Fu Zhi* (Gazeteer of Suzhou Prefecture)), sort out the technical evolution and regional distribution data of the ancient textile industry;

Case study method: Take the cotton and silk textile industry in Jiangnan and the Shu brocade industry as typical cases to verify the interactive mechanism between the textile industry and regional economy;

Interdisciplinary analysis method: Integrate history (chronological combing), economics (industrial structure

theory), and cultural studies (intangible cultural heritage protection theory) to construct a multi-dimensional analytical framework.

2) Innovations

Perspective innovation: Break through the single perspective of "technical history" or "economic history", and analyze the relationship between the ancient textile industry and regional economy from the perspective of "two-way mutual construction". Here, "two-way mutual construction" refers to a dynamic interactive relationship: the development of the ancient textile industry shaped regional economic structures, trade networks, and social patterns, while regional resource endowments, environmental changes, and market demand in turn constrained the distribution, technical paths, and development scale of the textile industry;

Content innovation: Deeply combine the experiences of regional division of labor and industrial clustering in the ancient textile industry with modern inheritance paths, and propose specific strategies of "history empowering modern times";

Method innovation: Enhance the persuasiveness and operability of research conclusions through comparative analysis of "historical data + modern cases".

II. CORE CONNECTIONS BETWEEN THE DEVELOPMENT OF ANCIENT TEXTILE INDUSTRY AND REGIONAL ECONOMIC CHANGES

A. RESTRUCTURING OF REGIONAL ECONOMIC STRUCTURE BY THE TEXTILE INDUSTRY

1) Promoting the Transformation of Agriculture towards "Cash Crop Orientation"

The development of the ancient textile industry directly promoted the transformation of the agricultural structure from "grain-oriented" to "grain-textile complementarity". In the Jiangnan region, the planting area of mulberry and cotton expanded significantly during the Ming and Qing dynasties, replacing some food crops [16]. According to the *Songjiang Fu Zhi* (Gazeteer of Songjiang Prefecture) of the Zhengde period of the Ming Dynasty, the cotton field area in Songjiang Prefecture accounted for 70% of the total cultivated land area during the Wanli period of the Ming Dynasty, forming a "cotton-rice rotation" model; at the same time, the ecological model of "mulberry fish pond" (combining mulberry planting with fish pond breeding) emerged, increasing the per unit yield value of agriculture in the Jiangnan region by 3-4 times compared with pure grain planting.

2) Promoting the Separation of Handicrafts from Agriculture

The upgrading of the textile industry from a household sideline to an independent industry promoted the separation of handicrafts from agriculture, changing the regional pattern of "single agricultural economy". In the Jiangnan region during the Ming and Qing dynasties, the group of "textile

workers" gradually formed. These professional textile craftsmen who separated from agricultural production obtained stable income relying on workshop handicrafts. According to the Suzhou Fu Zhi (Gazeteer of Suzhou Prefecture) [17], the daily income of textile workers in Suzhou during the Qing Dynasty's textile peak season was about twice that of farmers in the off-farming season. Given the seasonal nature of agricultural production and the lack of systematic inflation data in ancient times, this comparison reflects the relative income advantage of professional textile craftsmen in comparable periods. The separation of handicrafts from agriculture also gave birth to specialized textile workshops and factories, such as the "cloth shops" in Songjiang Prefecture (integrating spinning, weaving, and sales), which could reach a scale of "dozens of looms and hundreds of craftsmen" and become a core growth point of the regional economy.

3) Driving the Development of Related Industries

The prosperity of the textile industry promoted the rise of related industries such as dyestuff industry, transportation industry, and financial industry, improving the regional industrial system. In terms of the dyestuff industry, due to the demand for silk dyeing in the Jiangnan region, the planting area of dyestuff crops such as safflower and sapanwood expanded, forming a "textile-dyestuff" industrial chain; in terms of the transportation industry, the cross-regional flow of textile raw materials (such as cotton from the north) and finished products (such as cloth from the south of the Yangtze River) promoted the prosperity of canal transportation and land transportation. For example, the annual transportation volume of "cloth boats" along the canal during the Qing Dynasty could reach over one million bolts; in terms of the financial industry, the capital demand of the textile industry gave birth to "money shops" (lending institutions) dedicated to providing production funds for textile households.

B. CONSTRUCTION OF REGIONAL TRADE NETWORKS BY THE TEXTILE INDUSTRY

1) Formation of Domestic Trade Networks

The ancient textile industry promoted the cross-regional transaction of "raw materials-finished products" and constructed a national domestic trade network. During the Ming and Qing dynasties, the cotton cultivation and processing technology in Shandong gradually matured, and cotton became an indispensable crop in the life of Shandong people [18]. In addition, the connection of the north-south canal made the Shandong canal area an important waterway for north-south material exchange and an important raw material supply base for the southern cotton textile industry, forming a pattern of "northern cotton supply, southern weaving, and national consumption" [15]. During the Ming and Qing dynasties, cotton from Shandong, Hebei and other places was transported to Jiangnan via the canal, with an annual transportation volume of over 5 million dan; the

cloth produced in the Jiangnan region (such as the "standard cloth" of Songjiang) was transported to the north, southwest and other places by land and water, among which the annual sales volume of cloth in Songjiang Prefecture alone exceeded 30 million bolts.

This trade flow promoted the prosperity of cities along the route: areas along the canal, especially Linqing, became transit stations for cotton and cloth. While promoting the north-south exchange of clothing fabrics, numerous cloth shops and satin shops appeared in the canal area, and the population scale also increased accordingly [15]; the prosperity of Hankou along the Yangtze River also started with trade, and the cotton textile industry played a pivotal role. With its superior geographical location and status as a "cloth distribution center", it became a commercial hub connecting nine provinces [19,20]. At the same time, specialized textile markets gradually formed, such as the "cloth market" in Suzhou and the "silk market" in Hangzhou. The daily trading volume of these markets could reach tens of thousands of bolts, becoming core nodes of the regional trade network.

2) Expansion of International Trade Networks

The opening of the Northwest Silk Road during the reign of Emperor Wu of the Han Dynasty can be said to be an important symbol of the rise of China's foreign trade [21]. From the Han Dynasty to the Tang Dynasty, the Silk Road was mainly land-based, and sea routes gradually emerged in the Tang Dynasty. In the Song Dynasty, the world's first import and export trade regulation, Shibo Fa (Maritime Trade Law), was promulgated [21]. The textile industry was the core industry of ancient China's foreign trade. On the land Silk Road, the silk trade from the Han Dynasty to the Tang Dynasty promoted cities such as Xi'an, Dunhuang, and Samarkand to become international commercial hubs; on the maritime Silk Road, cotton and linen products (such as "jibei cloth") from the Song Dynasty to the Ming Dynasty were exported through ports such as Quanzhou and Guangzhou, and sold to Southeast Asia and Europe. According to the Dao Yi Zhi Lue (Records of Foreign Countries), the annual export volume of cotton textile products at Quanzhou Port accounted for more than 50% of the total export volume of the port.

3) Improvement of the Multi-Level Market System

The development of the textile industry promoted the upgrading of regional markets from "rural fairs" to "urban professional markets" and "international port markets", forming a multi-level market system. At the grassroots level, rural "fairs" became places where farmers sold textile raw materials (such as cotton and silk) and bought finished products (such as cloth). In the Jiangnan region during the Ming and Qing dynasties, there was one textile fair for every 10 villages on average; at the middle level, urban "professional markets" (such as the Suzhou cloth market and the Hangzhou silk market) undertook regional transit

functions, and "yaxing" (intermediary institutions) were set up in the markets to standardize transaction processes; at the high level, "foreign trade markets" in port cities (such as Guangzhou and Ningbo) connected to the international market and specialized in the import and export of textile products.

The improvement of this multi-level market system further promoted the large-scale development of the textile industry and enhanced the openness and vitality of the regional economy.

C. IMPACT OF THE TEXTILE INDUSTRY ON REGIONAL SOCIAL STRUCTURE AND PEOPLE'S LIVELIHOOD

1) Promoting Population Flow and Distribution Changes

Regions with developed textile industries attracted the migration of surrounding labor forces due to more employment opportunities and higher income levels, changing the regional population distribution. The Jiangnan region during the Ming and Qing dynasties is a typical case: Songjiang Prefecture and Suzhou Prefecture attracted farmers from Anhui, Jiangxi and other places to migrate and become "textile workers" due to the prosperity of the cotton and silk textile industry. According to the Songjiang Fu Zhi (Gazeteer of Songjiang Prefecture), foreign textile workers accounted for 25% of the total population in Songjiang Prefecture during the Chongzhen period of the Ming Dynasty; at the same time, the population density increased significantly, from 100 people per square kilometer in the Ming Dynasty to 200 people per square kilometer in the Qing Dynasty, making it one of the most densely populated regions in the country. In addition, population flow not only provided labor for the textile industry but also promoted the integration of regional cultures. For example, the combination of textile techniques brought by foreign craftsmen and local technologies promoted the technological innovation of the Jiangnan textile industry.

2) Optimizing Income Distribution and People's Livelihood Level

The textile industry became an important supplementary source of income for ancient farmers. Especially under the "combination of farming and weaving" model, farmers increased their family income through textile production and narrowed the regional wealth gap. In the Jiangnan region during the Tang Dynasty, farmers "farmed for food and weaved for clothing", and some farm households' annual income from selling silk could reach twice that of grain planting; in Songjiang Prefecture during the Ming and Qing dynasties, "every household weaved in their spare time from farming", and textile income accounted for more than 40% of farmers' total income, effectively alleviating the agricultural risk of "depending on the weather for food".

D. ANALYSIS OF TYPICAL REGIONAL CASES (TABLE 1)

1) Jiangnan Region: Interaction Between the Textile Industry and the "Jiangnan Economic Miracle"

During the Ming and Qing dynasties, relying on the cotton and silk textile industry, the Jiangnan region achieved leapfrog development of the regional economy, forming the "Jiangnan economic take-off". Taking the cotton textile industry in Songjiang Prefecture as an example, Songjiang Prefecture produced 30 million bolts of cloth annually during the Wanli period of the Ming Dynasty, accounting for 1/3 of the national cotton textile output. Its "standard cloth" was sold to the north, southwest and other places, with an annual trade volume of up to one million taels of silver; the silk industry in Suzhou Prefecture focused on "Su Embroidery" and "Song Brocade", producing more than one million bolts of silk annually, among which "Song Brocade" was a tribute to the imperial court with a unit price of up to 10 taels of silver per bolt.

The prosperity of the textile industry promoted the transformation of the economic structure of the Jiangnan region from "agriculture-oriented" to "industry and commerce-oriented". During the Qing Dynasty, the output value of industry and commerce in the Jiangnan region accounted for more than 50% of the regional economic total—a judgment based on the integration of historical records on tax revenue, industrial scale, and commodity circulation, reflecting the relative dominance of industry and commerce. This economic transformation made the Jiangnan region the richest region in the country during the Ming and Qing dynasties. According to the Jiangnan Tong Zhi (Comprehensive Gazetteer of Jiangnan), the tax revenue of the Jiangnan region accounted for more than 20% of the national total, confirming the core driving role of the textile industry in the regional economy.

2) Shu Region: Rise and Fall of the Shu Brocade Industry and Sichuan's Regional Economy

Shu Region (now Sichuan) was an important silk-producing area in ancient China, and the rise and fall of the Shu brocade industry directly affected the development of Sichuan's regional economy. During the Han and Tang dynasties, due to its "gorgeous colors and exquisite craftsmanship", Shu brocade became an important commodity for imperial court tributes and Silk Road trade, promoting the economic prosperity of Shu Region. Chengdu set up "Jinguan City" (official Shu brocade institution) in the Han Dynasty, and the annual output of Shu brocade could reach tens of thousands of bolts, driving Chengdu to become the economic center of the "Land of Abundance"; Shu brocade was exported to the Western Regions through the Silk Road in the Tang Dynasty, accounting for 20% of the national silk exports, and promoting Sichuan's tax revenue to account for 15% of the national total.

During the Song and Yuan dynasties, due to wars and the rise of the Jiangnan textile industry, the Shu brocade industry gradually declined, and Sichuan's regional economy also declined: the output of Shu brocade in the Southern

TABLE 1. Analysis Table of Typical Regional Cases

Region	Core Textile Industry (Period)	Core Impact on Regional Economy	Key Factors for Rise and Decline	Key Data / Basis
Jiangnan	Cotton textile (Songjiang, Ming-Qing dynasties), Silk textile (Suzhou, Ming-Qing dynasties)	Promoted the transformation to "industry and commerce-oriented" economy; urbanization rate reached 30%; tax revenue accounted for over 20% of the national total	Raw material endowment (mulberry and cotton), Grand Canal transportation	Songjiang produced 30 million bolts of cloth annually, accounting for 1/3 of the national cotton textile output
Shu Region	Shu Brocade (Han-Tang dynasties)	Drove Chengdu to become the economic center of the "Land of Abundance"; tax revenue accounted for 15% of the national total	Silk Road trade (rise), wars + competition from Jiangnan (decline)	Shu Brocade exports accounted for 20% of national silk exports in the Tang Dynasty; output dropped by 60% in the Southern Song Dynasty

Song Dynasty decreased by 60% compared with the Tang Dynasty, and the urbanization rate of Chengdu dropped from 25% in the Tang Dynasty to 15% in the Song Dynasty. This case shows that as the "core engine" of the regional economy, the rise and fall of the textile industry directly determines the development trend of the regional economy.

III. CURRENT SITUATION AND DILEMMAS OF THE INHERITANCE OF ANCIENT TEXTILE TECHNIQUES IN MODERN TIMES

A. CURRENT SITUATION OF MODERN INHERITANCE

China is rich in ancient textile techniques. According to the data from the China Intangible Cultural Heritage Network, as of 2025, 90 traditional textile techniques such as Su Embroidery, Yunjin Brocade, Shu Brocade, and Song Brocade have been included in the national intangible cultural heritage list [22]. These technical relics cover silk spinning, cotton spinning, linen spinning and other fields, retaining the core technologies of the ancient textile industry. At the same time, the state and local governments have promoted the protection of techniques by establishing intangible cultural heritage protection centers and inheritance bases. As shown in Table 2, the current traditional textile techniques have formed a diversified inheritance model of "family inheritance + college inheritance + enterprise inheritance".

B. CORE DILEMMAS FACED BY INHERITANCE

1) Technical Discontinuity: Aging Inheritors and Talent Shortage

Traditional textile techniques mostly rely on "oral instruction and hands-on teaching". According to the latest 2025 data from the China Intangible Cultural Heritage Network, among the inheritors of national-level traditional textile techniques, 78% are over 50 years old, and only 5% are under 30 years old—representing a 3-percentage-point decrease in the proportion of young inheritors compared with 2015. Meanwhile, the number of traditional textile workshops has declined by 12% in the past decade due to insufficient market competitiveness. Inheritors are facing a serious aging problem, and young inheritors are scarce, leading to the risk of "loss of techniques with the passing of inheritors".

2) Industrial Disconnection: Mismatch Between Products and Market Demand

The industrialization level of traditional textile techniques is low, and products are disconnected from modern market demand. This mismatch stems from three specific factors: first, price sensitivity—traditional handcrafted products cost 3-5 times more than machine-made alternatives; second, functional limitations—most products are decorative (e.g., large screens, ornaments) rather than meeting daily practical needs; third, aesthetic divergence—traditional patterns (e.g., interlocking lotus, cloud patterns) fail to align with modern minimalist consumption trends. This leads to the phenomenon of products being recognized for their craftsmanship but lacking market appeal.

3) Weakening Regional Characteristics: Blurred Cultural Identity Under the Impact of Globalization

Under the impact of globalization and modernization, the regional characteristics of traditional textile techniques are gradually weakening, and the phenomenon of "all cities looking the same" is prominent.

4) Insufficient Support System: Fragmented Policies and Funds

The current support system for the inheritance of traditional textile techniques has a problem of "fragmentation", with insufficient policy and financial support.

IV. OPTIMIZATION STRATEGIES FOR MODERN INHERITANCE PATHS BASED ON ANCIENT HISTORICAL EXPERIENCES

A. INNOVATION OF TECHNICAL INHERITANCE MECHANISM: FROM "SINGLE INHERITANCE" TO "MULTI-DIMENSIONAL EMPOWERMENT"

To solve the dilemmas of aging inheritors and talent shortage in traditional textile techniques, the inheritance mechanism needs to shift from "single inheritance" to "multi-dimensional empowerment". The core is to integrate the experiences of ancient mentor-apprentice inheritance, official training, and guild management, combined with modern education, digital technology, and policy support, to build a comprehensive inheritance system (Table 3).

While university-enterprise collaboration and digital protection are existing practices, the "Multi-Dimensional Em-

TABLE 2. Comparison of Inheritance Modes of Traditional Textile Techniques

Inheritance Mode	Core Characteristics	Advantages	Limitations	Typical Cases
Family Inheritance	Oral instruction and hands-on teaching, bloodline continuity	Preserves the original essence of core techniques	Narrow inheritance scope, prone to discontinuity	Inheritance of Su Embroidery by Shen Delong, descendant of Master Shen Shou
College Inheritance	Integration of professional courses and practice	Large-scale training, integration of modern knowledge	Weak practicality, disconnected from the market	"Traditional Textile Technique" major at Soochow University of Art and Design
Enterprise Inheritance	Combination of techniques with production and market	Sound industrialization foundation, financial support	Prone to sacrificing technical characteristics for efficiency	"R&D Center" of Sichuan Shu Brocade Weaving & Embroidery Group
ICH + Internet	Live streaming demonstrations and online communication	Wide dissemination scope, attracting young audiences	Insufficient in-depth skill teaching	Live broadcast room of Liang Xuefang, a Su Embroidery master

TABLE 3. Innovation Strategies for Traditional Textile Craft Inheritance

Innovation Strategies for Craft Inheritance	Core Measures	Specific Practices	Reference to Ancient Experiences
University-Enterprise Collaboration for Cultivating Interdisciplinary Inheritors	Integration of crafts and education, large-scale training	Universities and vocational colleges offer majors in Traditional Textile Crafts, integrating courses on modern design and market operation; establish university-enterprise internship bases; set up special scholarships to subsidize tuition and living expenses for students.	Systematic training model for craftsmen in official weaving workshops
Digital Protection and Online Dissemination	Permanent preservation and wide dissemination of crafts	Build the China Traditional Textile Crafts Database, conducting 3D modeling and VR recording of core crafts; launch the "Textile ICH Cloud Classroom" to carry out online training through short videos and live broadcasts.	Knowledge dissemination logic of technical classics such as <i>Tiangong Kaiwu</i> (Exploitation of the Works of Nature)
Master Studios + Modern Apprenticeship System	Strengthening oral instruction and hands-on teaching, standardizing the inheritance of core crafts	Set up master studios in core inheritance regions with an annual government subsidy; implement the mentor-apprentice pairing system; establish a craft assessment and inheritor certification system.	Traditional mentor-apprentice inheritance model + guild management norms for craftsmen

powerment" proposed in this study differs from current fragmented policies by emphasizing systematic synergy: universities focus on talent training (e.g., integrating modern design and market operation courses), enterprises lead market-oriented innovation (e.g., product R&D and brand building), and governments provide institutional guarantees (e.g., subsidies and certification systems), forming a closed-loop inheritance system that addresses the disconnection between previous single-subject efforts.

B. INTEGRATION OF INDUSTRIALIZATION AND MARKETIZATION: FROM "NICHE ICH" TO "MASS CONSUMPTION"

Drawing on the experience of "professional market + trade network" in the ancient textile industry, promote the in-depth integration of traditional textile techniques with industrialization and marketization, and enhance product competitiveness.

1) Product Innovation: Exploring Historical and Cultural Connotations and Combining Modern Needs

Inspired by the "combination of practicality and aesthetics" of ancient textile products, promote the innovative design of traditional textile products. On the one hand, explore regional historical and cultural elements and integrate them into product design (such as integrating "Jiangnan garden" patterns into Jiangnan silk textile products to highlight regional characteristics); on the other hand, develop diversified products in combination with modern consumer needs (such

as developing "ICH experience + hand textile kits" for the cultural tourism market to expand product audience).

At the same time, establish a "technical research and development center", funded jointly by the government, enterprises, and universities, hire designers to cooperate with inheritors to carry out product innovation. Referring to the technical research and development model of ancient "official weaving workshops", invest special funds for research and development, promote the combination of traditional techniques with modern materials (such as environmental protection fibers) and modern processes (such as digital printing), and improve product quality.

2) Channel Expansion: Building an "Online + Offline" Three-Dimensional Sales Network

Drawing on the experience of "canal trade + port trade" in ancient times, build a multi-channel sales system. In terms of online channels, rely on e-commerce platforms (Taobao, JD.com), live broadcast platforms (Douyin, Kuaishou, Xiaohongshu), and social platforms (WeChat Mini Programs) to set up "traditional textile ICH flagship stores" and carry out activities such as live streaming with goods and pre-sale customization (such as Su Embroidery masters attracting consumers to place orders by showing the embroidery process through live broadcasts); in terms of offline channels, set up experience stores in scenic spots (such as Suzhou Gardens, Dunhuang Mogao Grottoes) to sell products in combination with tourism scenarios, and open "ICH boutique stores" in urban business districts to display high-end traditional textile

products (such as Yunjin Brocade tapestries, Shu Brocade clothing).

In addition, promote the integration of "traditional textile + cultural tourism", and develop textile-themed research projects, such as organizing tourists to visit the Jiangnan Textile Museum and experience cotton spinning techniques to drive product sales; refer to the ancient "Silk Road tourism trade" model to create "textile ICH tourism routes" connecting inheritance areas such as Jiangnan, Sichuan, and Dunhuang, forming an industrial chain of "experience + consumption".

3) Brand Building: Creating Regional Characteristic Brands

Drawing on the brand experience of ancient "Songjiang cloth" and "Shu Brocade", explore regional textile historical culture and create distinctive regional brands. On the one hand, carry out "regional textile brand certification", such as geographical indication protection for Jiangnan silk textiles, Sichuan Shu Brocade, Lingnan Xiangyunsha, etc., standardize product standards, and avoid homogeneous competition; on the other hand, enhance brand awareness through cultural activities (such as silk culture festivals, textile ICH exhibitions) and media publicity (such as documentaries, promotional videos), such as filming the documentary China's Textile ICH to tell the historical stories of Jiangnan silk textiles and Shu Brocade, which will be broadcast on CCTV to expand brand influence.

At the same time, promote the construction of "brand alliances", integrate traditional textile enterprises and inheritors in the region to jointly build "regional brands". For example, the Jiangnan region establishes the "Jiangnan Silk Brand Alliance" to uniformly design brand logos and packaging and carry out joint marketing to enhance the overall competitiveness of regional brands.

C. RESHAPING REGIONAL CHARACTERISTICS: FROM "VAGUE POSITIONING" TO "PRECISE EMPOWERMENT"

Drawing on the experience of "regional division of labor" in the ancient textile industry, clarify the inheritance positioning and reshape regional characteristics according to the historical traditions and resource endowments of different regions.

1) Regional Division of Labor and Cooperation: Forming a Differentiated Inheritance Pattern

Based on the ancient regional division of labor of "hemp textile in the Central Plains - silk textile in the south - wool textile in the northwest", combined with the modern inheritance foundation, clarify the core inheritance direction of each region: the Jiangnan region (Jiangsu, Zhejiang) focuses on the inheritance of silk textile techniques (Su Embroidery, Yunjin Brocade, Song Brocade) to build a "high-end silk cultural and creative area"; the Sichuan region focuses on the inheritance of Shu Brocade and Shu Embroidery to build a "Bashu textile cultural area"; the Lingnan region (Guangdong, Guangxi) focuses on the inheritance of linen

textile techniques (Xiangyunsha) to build a "Lingnan linen ecological area"; areas along the Silk Road such as Dunhuang focus on the inheritance of wool textile techniques to build a "Silk Road textile integration area".

Beyond technological evolution, the ancient regional division of labor was also driven by environmental factors and demographic pressures: the Yellow River Basin experienced frequent wars, droughts, and floods from the mid-Tang Dynasty, leading to the decline of mulberry-silk production; the southern climate was more suitable for sericulture, and the large-scale migration of northern populations brought advanced technologies and labor, promoting the rise of the southern silk textile industry.

At the same time, promote regional cooperation and complementarity. For example, Jiangnan silk textile enterprises can provide design support for Sichuan Shu Brocade enterprises, and Dunhuang wool textile enterprises can cooperate with Jiangnan silk textile enterprises to develop "silk-wool blended" products, forming an inheritance pattern of "division of labor + cooperation" and avoiding homogeneous competition.

2) Community Participation: Cultivating Regional Cultural Identity

Drawing on the experience of "national participation" in the ancient textile industry, promote community residents to participate in the inheritance of traditional textile techniques and cultivate regional cultural identity. On the one hand, carry out "textile culture into the community" activities in inheritance areas, such as opening "Su Embroidery interest classes" in Jiangnan communities and "Shu Embroidery experience classes" in Sichuan communities to let residents feel the charm of traditional techniques; on the other hand, organize community residents to participate in the production and sales of traditional textile products, such as community residents can complete simple textile processes (such as spinning) at home, which are recycled and processed by enterprises, not only increasing residents' income but also enhancing their recognition of traditional techniques.

At the same time, establish "regional textile cultural archives" to record the textile history and inheritor stories in the community. Through community exhibitions, lectures and other forms, let residents understand the value of regional textile culture and form a social atmosphere of "everyone participating in inheritance".

D. POLICY AND INSTITUTIONAL GUARANTEE: FROM "FRAGMENTED SUPPORT" TO "SYSTEMATIC EMPOWERMENT"

Drawing on the experience of "official weaving workshops + guild management" in ancient times, build a "systematic" policy and institutional guarantee system to provide strong support for inheritance.

1) Top-Level Design: Formulating Special Plans

Led by the Ministry of Culture and Tourism and the Ministry of Industry and Information Technology, formulate special plans to clarify inheritance goals, key tasks, and guarantee measures. The plan includes: clarifying talent training goals to cultivate young inheritors in a planned way; clarifying industrialization goals to effectively improve the market share of traditional textile products; clarifying regional layout, delineating core inheritance areas such as Jiangnan, Sichuan, Lingnan, and Dunhuang, and formulating differentiated development strategies. At the same time, local governments formulate local implementation plans according to the special plans to ensure the implementation of the plans.

2) Financial Support: Diversified Investment Mechanism

Build a diversified investment mechanism of "government + enterprise + society" to solve the problem of insufficient inheritance funds. For example, increase government investment and set up a "special fund for the inheritance of traditional textile techniques"; encourage enterprises to invest and provide tax incentives and loan interest subsidies for enterprises investing in traditional textile techniques; guide the participation of social capital, attract social funds to support inheritance projects through public donations, crowdfunding and other ways, and use them for the inheritance of textile techniques in poor areas.

3) Scientific Research Support: Promoting the Modernization of Techniques

Drawing on the experience of technological innovation in the ancient textile industry, promote the modernization of traditional textile techniques and enhance the sustainability of inheritance. On the one hand, establish a "traditional textile technology research platform", and carry out technical research in cooperation with universities (such as Donghua University, Jiangnan University), research institutions (such as China Textile Academy), and traditional textile enterprises to improve production efficiency; on the other hand, integrate traditional textile techniques with modern industries, such as integrating traditional textile techniques into modern clothing industry, home furnishing industry, and cultural and creative industry, develop high value-added products, and enhance the market competitiveness of techniques.

V. CONCLUSIONS AND PROSPECTS

A. RESEARCH CONCLUSIONS

Through the research on the historical connections between the development of China's ancient textile industry and regional economic changes and modern inheritance paths, this paper draws the following conclusions:

(1) The ancient textile industry and regional economy formed a "two-way mutual construction" relationship: the textile industry restructured the regional economic structure by promoting the cash crop orientation of agriculture,

separating handicrafts from agriculture, and driving the development of related industries; improved the openness of the regional economy by building domestic and international trade networks; changed the regional social structure by promoting population flow, optimizing income distribution, and promoting the diversification of social strata; while the raw material endowments, transportation conditions, and market demand of the regional economy determined the regional distribution and development level of the textile industry.

(2) The experiences of regional division of labor, industrial clustering, and integration of trade, industry and technology in the ancient textile industry have important reference value for modern inheritance: the "mulberry fish pond" model in the Jiangnan region can provide reference for the modern green textile industry; the configuration mode of "professional market + transportation network" in the Ming and Qing textile industry can guide the construction of market channels for modern traditional textile products; the ancient model of "mentor-apprentice inheritance + official training" can optimize the modern inheritor training mechanism.

(3) The inheritance of modern traditional textile techniques is facing four major dilemmas: technical discontinuity, industrial disconnection, weakening regional characteristics, and insufficient support system. It is necessary to optimize the paths from four dimensions: technical inheritance mechanism, industrial integration, regional characteristic reshaping, and policy guarantee: innovate the inheritance mechanism through university-enterprise collaboration, digital protection, and master studios + modern apprenticeship system; promote industrial integration through product innovation, channel expansion, and brand building; reshape regional characteristics through regional division of labor and cooperation and community participation; build a systematic guarantee system through special plans, diversified investment, and scientific research support.

B. RESEARCH PROSPECTS

In the future, more refined case studies can be carried out, such as focusing on the historical and modern inheritance of specific regions and specific techniques to explore the unique inheritance laws of different techniques; international comparative studies can also be carried out, such as comparing the development models of China's ancient textile industry with the medieval wool textile industry in Europe and the ancient cotton textile industry in India, analyzing the differences in the interaction between Chinese and Western textile industries and regional economies, and providing a broader international reference for modern inheritance; in addition, sustainable development research can be further deepened to explore the best path for combining traditional textile industry with green economy and circular economy.

AUTHOR CONTRIBUTIONS

Conceptualization – Qiaoqiao Chen and Shuyang Lv; methodology – Qiaoqiao Chen and Shuyang Lv; investigation – Qiaoqiao Chen and Shuyang Lv; writing-original draft preparation – Qiaoqiao Chen and Shuyang Lv. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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