A Study on Innovation in Chongming Rural Arts and Crafts and In-depth Integration of Industry, Academia, Research, and Application Based on Grounded Theory

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Abstract: This paper took rural arts and crafts in Chongming Shanghai as the research object, focusd on representative categories such as soil cloth weaving and bamboo weaving techniques. It used Grounded theory to explore the path of promoting their innovation through the in-depth integration of industry, academic, research, and application. Primary data were collected through semi-structured interviews with 25 research subjects and participatory observation. Used grounded theory and three-level coding analysis, it was found that the innovation of Chongming rural arts and crafts faces resource constraints such as heritage discontinuity, weak innovation capability, and fund shortage. The root caused insufficient collaboration among industry, academic, research, and application entities, specifically manifested in issues such as academia/research being disconnected from reality. The study constructed and revealed the mechanism of in-depth integration: efficient allocation of knowledge, and market elements through resource integration; formation of a multi-subject consultation and decision-making mechanism relying on collaborative governance; and promotion of the conversion of cultural and ecological valued to economic values through value conversion. It proposed optimization paths: strengthened top-level design, industries enhance their main capabilities, deepened cooperation with academia and research, and users actively participate; innovated integration models such as "craft + eco-tourism" and "Internet + craft". The research provided a theoretical reference and practical paradigm for the innovation and collaborative development of rural arts and crafts.

Keywords: Rural Arts and Crafts; Industry; Academic; Research; Innovation Path; Grounded Theory

1. Introduction

1.1 Research Background

Against the background of the comprehensive advancement of the rural revitalization strategy, the inheritance and innovation of rural culture have become important paths to activate the endogenous driving force of rural areas. As a material carrier and spiritual symbol of rural culture, rural arts and crafts have both cultural inheritance value, economic empowerment function, and ecological synergy effect [1]. They not only carry regional historical memories and folk customs but also can be transformed into new growth points for rural industrial revitalization through creative conversion. At the same time, their characteristics of using local materials and handcrafting are highly consistent with the concept of green ecological development.

As Shanghai's world-class ecological island, Chongming's rural arts and crafts have distinct regional characteristics and ecological imprints. The traditional crafts handed down on the island, such as soil cloth weaving, bamboo weaving, kitchen flower painting, and paper-cutting, have formed an artistic style of "simplicity, practicality, and ecological friendliness" relying on the unique natural environment of the Yangtze River estuary (such as abundant bamboo resources and cotton crops) and the historical background of the integration of immigrant cultures [2]. However Chongming rural arts and crafts are facing practical difficulties such as heritage discontinuity, insufficient innovation, and weak market competitiveness. The disconnect between

traditional techniques and modern lifestyles and consumer demand is becoming increasingly prominent. The in-depth integration of government, industry, academia, research, and application provides a systematic solution to these difficulties. The "government" can provide guidance and resource coordination; "industry" (enterprises, cooperatives) undertakes the function of market conversion; "academia" (colleges and universities) provides talents and knowledge; "research" (research institutions) provides technical support; and "users" (villagers, consumers, cultural and tourism markets) clarify the innovation orientation[3]. This multi-subject collaborative model can integrate scattered innovation elements and make up for the shortcomings of rural arts and crafts in funds, talents, and technology.

1.2 Research Questions

This study focused on two core questions: First, what are the core bottlenecks faced by the innovation of Chongming rural arts and crafts? What is the formation mechanism of these bottlenecks? Second, in what ways can the entities of government, industry, academia, research, and application achieve in-depth integration to effectively break through these bottlenecks and promote the innovation of arts and crafts?

The theoretical significance of this study lies in: On the one hand, applying grounded theory to the field of rural cultural innovation and collaborative governance can enrich the theoretical system of rural arts and crafts innovation, especially improving the adaptability theory of "government, industry, academia, research, and application" in rural scenarios; on the other hand, by analyzing the Chongming case, it can provide a new perspective for the theoretical research on the collaborative development of cultural resources under the urban-rural dual structure. The practical significance is reflected in: providing operable integration paths for the living inheritance and innovative development of Chongming rural arts and crafts, and serving as a reference sample for the collaborative revitalization of rural cultural industries in similar regions across the country.

2. Literature Review

2.1 Research on Innovation in Rural Arts and Crafts

Foreign research on traditional craft innovation began in the mid-20th century with discussions on "modernization of folk crafts", focusing on the combination of traditional techniques and modern design. In recent years, research has mostly focused on the balance between cultural identity and economic value. For example, case studies on African tribal crafts breaking into the international market by integrating contemporary art elements emphasize "modern translation of traditional symbols" and "community-participatory innovation"[4].

Domestic research can be divided into three dimensions: First, the inheritance dimension, focusing on the protection of intangible cultural heritage inheritors and the sorting out of technical pedigrees, such as discussions on the inheritance mechanisms of techniques like Yixing purple clay in Jiangsu and Dai brocade in Yunnan; Second, the innovation dimension, focusing on design improvement, material innovation, and function expansion, such as practical research on integrating traditional patterns into modern clothing and home products; Third, the market dimension, analyzing the role of e-commerce platforms and cultural-tourism integration in promoting the sales of craft products, such as the traffic empowerment of Douyin's "Intangible Cultural Heritage Shopping Festival" for rural crafts. However, existing research has insufficient attention to "systematic innovation" of rural arts and crafts, mostly staying in the improvement of a single link, and lacking in-depth analysis of multi-subject collaborative innovation [5].

2.2 Chongming Rural Arts and Crafts

Chongming rural arts and crafts refer to the sum of traditional techniques and products that originate and spread in rural areas of Chongming Island, mainly made by hand, and reflect the local natural ecological characteristics and human history. Its connotation includes three levels: first, a cultural carrier, bearing the collective memory of Chongming's "reclamation culture", "immigrant culture", and "ecological culture" (for example, the "field grid" in soil cloth patterns symbolizes the spirit of reclamation); second, a technical system, covering unique knowledge such as material processing (e.g., anti-mildew treatment of bamboo), tool use (e.g., special looms), and creation processes (e.g., the "one draft, multiple paintings" technique of kitchen flower painting);

third, innovation potential, which can realize functional and aesthetic upgrading through modern design transformation.

Its main types and characteristics are as follows [6]:

2.2.1 Soil cloth weaving

Using pure cotton as raw material, adopting the "warp straight and weft dense" weaving method, with colors mostly blue, white, and gray, and patterns mainly geometric and plant patterns, having both durability and decorativeness;

2.2.2 Bamboo weaving

Using local fresh bamboo as materials to weave daily necessities such as baskets and mats, with "warp and weft interlacing" as the basic technique, emphasizing "making the best use of bamboo";

2.2.3 Kitchen flower painting

Decorative paintings directly painted on farm kitchen stoves, mostly with auspicious patterns and opera stories, painted with mineral pigments mixed with glutinous rice juice, having moisture-proof and wear-resistant characteristics.

2.3 Research on Integration of Government, Industry, Academia, Research, and Application

Foreign related research centers on the "Triple Helix" theory (university-industry-government), emphasizing the dynamic interaction of the three in the innovation system [7]. Domestic research initially focused on technology transformation between colleges and enterprises, and in recent years has gradually expanded to the whole-chain integration of "government, industry, academia, research, and application", with many cases formed especially in the fields of agriculture and manufacturing[8]. However, in the field of rural culture, research has two obvious deficiencies: first, the "user" subject is marginalized, and "users" are mostly equated with consumers, ignoring the core role of villagers as technique holders and innovation participants[9]; second, the definition of "integration depth" is vague, mostly staying in the description of cooperation forms, lacking discussion on deep mechanisms such as benefit distribution and risk sharing[10].

2.4 Application of Grounded Theory in Related Fields

Grounded theory [11], since proposed by Glaser and Strauss, has been widely used in social science research. In the field of cultural industries, scholars have used this method to study issues such as the identity of intangible cultural heritage inheritors and the evolution of cultural and creative industry clusters; in the field of collaborative innovation, it has been used to analyze micro-processes such as trust mechanisms and conflict mediation models in industry-academia-research cooperation. However, the application of grounded theory in the interdisciplinary research of rural arts and crafts and the integration of government, industry, academia, research, and application is still rare, especially lacking targeted analysis of specific regions such as Chongming.

To sum up, existing research has not fully revealed the internal logic of the integration of government, industry, academia, research, and application in promoting the innovation of arts and crafts in rural scenarios, and case studies on ecologically sensitive areas like Chongming are even blank. Based on these research gaps, this study uses grounded theory to explore the collaborative path of Chongming rural arts and crafts innovation.

3. Research Design and Methodology

3.1 Research Objects

The study selected 18 research samples using theoretical sampling, including: government entities: 2 staff members from the Cultural Heritage Section of Chongming District Culture and Tourism Bureau, 1 staff member from the Rural Industry Section of the Agriculture and Rural Affairs Commission (responsible for rural handicraft industry planning); industry entities: 1 person in charge of a soil cloth enterprise, 2 owners of bamboo weaving workshops, 1 operator of a kitchen flower painting studio; academic and research entities: 2 teachers from Xianda College of Economics and Humanities, Shanghai International Studies University (who have participated in Chongming craft design projects); inheritance entities: 3 soil cloth inheritors, 2 bamboo weaving inheritors, 1 kitchen flower inheritor (aged between 50-70 years); user entities: 2 villagers who have participated in craft experience (aged 25-60 years), 1 seller of craft products on e-commerce platforms.

The initial sample was 18 people. Through coding, it was found that information on categories such as "cooperation mechanism between colleges and enterprises" and "villagers'

participation motivation" was insufficient. 2 heads of university-enterprise cooperation projects and 3 villagers not involved in craft production were supplemented for interviews, resulting in a final sample size of 25, reaching theoretical saturation.

3.2 Research Methods

This study took grounded theory as the core methodology, adopting semi-structured interviews: in-depth interviews with different subjects, with interview outlines including modules such as "current status of technical inheritance", "interaction between subjects", and "innovation needs and obstacles". Each interview lasted 40-90 minutes, with full recording and transcription into text materials.

3.2.1 Participatory observation

participating in activities such as Chongming cloth workshops, bamboo weaving training courses, and "intangible cultural heritage entering scenic spots", recording on-site interaction details, technical operation processes, and communication modes between subjects and other non-verbal information.

Grounded theory was composed of three-level coding as its core operational steps:

3.2.2 Open coding

Analyzing Original data sentence by sentence, assigning initial concepts to each paragraph of text, and then clustering similar concepts into categories. For example, from the interview statement "Young people think weaving soil cloth is too time-consuming and go out to work", concepts such as "heritage discontinuity" and "labor loss" can be extracted and classified into the category of "inheritance dilemma";

3.2.3 Axial coding

Associating categories obtained from open coding through the paradigm model of "causal conditions - phenomenon - context - intervening conditions - action/interaction strategies - results" to form main categories. For example, associating categories such as "inheritance dilemma", "narrow market", and "insufficient funds" into the main category of "innovation resource constraints";

Selective coding: determining the core category from the main categories, and using the core category to connect other categories to form a complete theoretical framework. The core category should be commanding and able to explain most of the data content.

First, issues such as "integration depth" and "innovation mechanism" focused on in this study are complex and vague, requiring extraction from actual data rather than preset theories; Second, rural arts and crafts innovation involves multi-subject interaction, and grounded theory can capture subtle differences and deep logic in subject behaviors; Third, this method emphasizes the "practicality" of theories, and the generated theoretical model can directly guide practice.

4. Research Data Collection

4.1 Sample Determination

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4.2 Data Collection Methods

4.2.1 Semi-structured Interviews

The interview outline was designed around three core dimensions:

4.2.1.1 Innovation status

Including the current inheritance status of traditional techniques (e.g., number of inheritors,

mastery of techniques), innovation attempts made (e.g., product improvement, use of new materials), innovation effects and bottlenecks;

4.2.1.2 Subject interaction

Forms of cooperation between subjects (e.g., government funding, university design cooperation), frequency of interaction, communication content, conflicts and solutions in cooperation;

4.2.1.3 Integration needs

Expectations of each subject for other subjects (e.g., enterprises' expectations for government support, inheritors' technical needs for universities), and visions of ideal integration models.

4.2.1.4 The interview implementation process

From March to May 2024, field interviews were conducted in Chenjia Town (soil cloth industry concentration area), Shuxin Town (birthplace of bamboo weaving techniques), and Dongping Town (kitchen flower culture village) in Chongming Island. For inheritors, an "interview + technique observation" format was adopted, with questions raised while watching technique operations (e.g., "Why is this bamboo weaving pattern woven this way? Can it be made lighter?"); for enterprise owners, on-site inspections of production were conducted to understand the entire process of product design, production, and sales; for government staff, the focus was on the formulation background and implementation effects of documents. All interviews were recorded with consent, and subsequently transcribed into approximately 50,000 words of text materials.

4.2.2 Participatory Observation

Observation objects included:

Chongming Cloth Culture Festival (April 2024): recording the organization and coordination of government departments, product displays of enterprises, on-site demonstrations by inheritors, and interactions with consumers; A design workshop co-organized by a soil cloth enterprise and a university (May 2024, 3 days): observing the communication and collaboration process between designers and inheritors in pattern design and improvement, and recording points of disagreement; Bamboo weaving training courses (March 2024, once a week, 4 times in total): observing villagers' participation, learning effects, and interaction patterns with inheritors.

During the observation, "field notes" were used for recording, including scene descriptions, dialogue summaries, and non-verbal behaviors (e.g., gestures of inheritors during demonstrations, expressions of enterprise owners when communicating with university teachers), accumulating 30,000 words of observation records.

4.3 Data Processing and Reliability and Validity Assurance

4.3.1 Data collation

All data were entered into Nvivo20 software to establish a database, including: interview texts: named by "subject type - name - interview date"; observation notes: named by "observation scene - date"; secondary data: named by "data type - source". Three-level verification of data was conducted: first, the researcher himself checked the consistency between the transcribed text and the recording; second, an expert in intangible cultural heritage research was invited to review the relevance of the data (excluding content unrelated to the research topic, such as pure personal life descriptions); finally, ambiguous information (e.g., an enterprise owner mentioned "insufficient cooperation funds" without specifying the specific amount) was supplemented and confirmed through telephone follow-up.

4.3.2 Reliability assurance

The following methods were used to ensure reliability:

Coding consistency test: another researcher with experience in using grounded theory was invited to randomly select 20% of the data for independent coding, and the coding consistency coefficient (Kappa value) was calculated to be 0.82, which is higher than the acceptable standard of 0.7;

4.3.3 Validity assurance

Validity assurance measures included:

4.3.3.1 Theoretical saturation test

Sampling was stopped when new samples no longer generated new categories and the core category could fully explain all data;

4.3.3.2 Member checking

Preliminary coding results were fed back to 5 interviewees (e.g., 1 inheritor, 1 enterprise owner, 1 government official, etc.) to confirm their recognition of the descriptions (recognition rate was 85%);

4.3.3.3 Peer review

Three experts in rural culture research were invited to review the theoretical framework, and the category association methods were adjusted according to their suggestions to enhance the

logic and explanatory power of the theory.

5. Results

5.1 Open Coding

Through sentence-by-sentence analysis of the collected 50,000-word text data, meaningful words, phrases, or sentences were extracted as initial concepts. For example, " support short-term" was extracted from "The government gave a sum of money for training, but it stopped after two sessions"; "design disconnected from market" was extracted from "The soil cloth bags we designed are considered too old-fashioned by young people and cannot be sold".

After repeated comparison and clustering, similar concepts were classified into the same category, resulting in 28 initial concepts and 10 categories (Table 1).

Table 1. Open Coding Categories and Examples

Category	Examples of Initial Concepts
Heritage discontinuity	Aging inheritors, young people unwilling to learn, loss of techniques
Weak innovation capability	Lack of design talents, insufficient application of new materials, difficulty in Arts and Crafts improvement
Low market awareness	Low brand popularity, consumers' lack of understanding, narrow sales channels
Fund shortage	Insufficient production funds, low R&D investment, difficulty in financing
strategy fragmentation	Unclear departmental powers and responsibilities, poor continuity, inadequate implementation
Academia and research being disconnected from reality	Unpractical design schemes, difficulty in transforming research results, lack of targeting
Imbalanced benefit distribution	Uneven cooperation benefits, low remuneration for inheritors, thin corporate profits
Information asymmetry	Little communication between subjects, opaque needs, non-sharing of resources
Low villagers' participation	Weak participation willingness, lack of incentives, insufficient skills
Unrevealed ecological value	Failure to highlight the environmental friendliness of materials, failure to integrate ecological concepts into design

5.2 Axial Coding

By analyzing the relationships between categories, the 10 categories were integrated into 4 main categories using the paradigm model of "causal conditions - phenomenon - context - intervening conditions - action/interaction strategies - results":

5.2.1 Innovation resource constraints (causal conditions)

This main category consists of "heritage discontinuity", "weak innovation capability", and "fund shortage", reflecting the problem of insufficient basic resources faced by the innovation of Chongming rural arts and crafts. Heritage discontinuity leads to ineffective transmission of techniques, weak innovation capability limits product upgrading, and fund shortage restricts the expansion of production scale and R&D investment. The three factors overlap, forming a vicious circle of "no one available - no techniques to innovate - no money to invest".

For example, a bamboo weaving inheritor mentioned: "Now only my wife and I are weaving. My son works in the urban area. Even if I offer a monthly salary of 3,000 yuan, no young people are willing to learn, let alone spend money on new designs."

5.2.2 Subject collaboration obstacles (phenomenon)

Composed of "strategy fragmentation", "academia and research being disconnected from reality", and "information asymmetry", reflecting the stagnation in interaction between government, industry, academia, research, and application subjects. Strategy fragmentation leads to fragmented governance of government departments (e.g., the craft support projects of the Culture and Tourism Bureau and the Agriculture and Rural Affairs Commission overlap but have different standards); academia and research being disconnected from reality makes university design schemes difficult to implement (e.g., bamboo weaving products designed by a university are too complex to mass-produce); information asymmetry prevents enterprise needs from matching academic and research capabilities (e.g., enterprises need soil cloth anti-mildew technology but do not know which institution can provide it).

5.2.3 Insufficient integration motivation (intervening conditions)

Including two categories of "imbalanced benefit distribution" and "low villagers' participation", which are key factors hindering the deepening of

integration. Imbalanced benefit distribution is manifested as: government investment is not proportional to output (e.g., a large amount of funds is used for training but fails to form industrial benefits), inheritors only receive labor fees but no intellectual property income in cooperation, and enterprises are unwilling to invest for a long time due to thin profits. Low villagers' participation is due to the lack of incentive mechanisms (e.g., income from participating in craft production is lower than that from working outside), resulting in their failure to play the role of technique holders and potential innovators.

5.2.4 Lag in ecological value conversion (results)

Composed of "low market awareness" and "unrevealed ecological value", which are the final manifestations of insufficient innovation and integration. The ecological characteristics of Chongming crafts (e.g., natural materials, handcrafting) have not been effectively disseminated, leading to market perception remaining at the level of "traditional old objects" and failing to form differentiated competitiveness. For example, soil cloth products still mainly use traditional fabrics, failing to highlight the "pure cotton and environmental protection" selling point, and their price is higher than that of chemical fiber products but not understood by consumers.

5.3 Selective Coding

5.3.1 Establishment of core category

Through further integration of main categories, "collaborative evolution of government, industry, academia, research, and application in the innovation of Chongming rural arts and crafts" was determined as the core category. This category can command the other 4 main categories, explaining how innovation resource constraints lead to lag in ecological value conversion through subject collaboration obstacles and insufficient integration motivation, and also includes the possibility of subjects breaking through constraints and promoting innovation through collaborative actions.

5.3.2 Construction of theoretical framework

Based on the core category, the "theoretical model of integration and innovation of government, industry, academia, research, and application in Chongming rural arts and crafts" was constructed, with the following logical relationships:

5.3.2.1 Starting point: stimulation of innovation needs

Under the background of rural revitalization, Chongming rural arts and crafts face dual pressures of inheritance and development, generating strong needs for technique inheritance, product innovation, and market expansion, which constitute the original driving force for integration.

5.3.2.2 Process: collaborative interaction and obstacle elimination

Government, industry, academia, research, and application subjects interact around innovation needs: the government formulates policies to guide resource flows, enterprises connect with market demands, universities and research institutions provide design and technical support, villagers and inheritors provide technical foundations, and consumers feed back market information. However, the interaction process is constrained by collaboration obstacles (academic-research, information issues) and insufficient motivation (benefit, participation issues), requiring the establishment of long-term mechanisms to eliminate obstacles.

5.3.2.3 Result: ecological value innovation and conversion

When collaboration obstacles are effectively eliminated, all subjects form an innovation synergy, promoting arts and crafts to achieve innovation at three levels: techniques (e.g., improvement of ecological materials), products (e.g., cultural and creative products integrating ecological design), and business formats (e.g., "craft + eco-tourism"), ultimately highlighting their ecological value and achieving a win-win situation of cultural inheritance and economic benefits.

5.3.3 Extraction of storyline

Under the promotion of the rural revitalization strategy, Chongming rural arts and crafts face innovation resource constraints such as heritage discontinuity and fund shortage, generating a demand for multi-subject collaboration to achieve innovation. However, collaboration obstacles such as government fragmentation, academia and research being disconnected from reality, and information asymmetry between subjects, as well as problems of insufficient motivation such as imbalanced benefit distribution and low villagers' participation, result in the integration of government, industry, academia, research, and application remaining at a shallow level, failing to effectively break

through innovation bottlenecks, and ultimately leading to the ecological value of craft products not being recognized by the market and facing sales difficulties. By constructing a closed-loop mechanism of 'demand - collaboration - motivation - value', all subjects can form an in-depth integrated innovation system, promoting arts and crafts to achieve the integration of tradition and modernity, and the unification of ecological value and economic value."

6. Conclusion & Suggestion

6.1 Conclusion

Based on coding analysis and status observation, the core problems in the innovation and integration of Chongming rural arts and crafts are as follows:

6.1.1 Government level: insufficient coordination and lack of long-term mechanisms

Strategy fragmentation: Departments such as culture and tourism, agriculture, and science and technology have their own support policies but lack overall coordination. For example, the Culture and Tourism Bureau focuses on inheritance and protection, while the Agriculture and Rural Affairs Commission focuses on industrial development, leading to enterprises having to apply to multiple departments and resource waste;

Lack of supervision: There are no standards for the quality and intellectual property protection of craft products, and there is a phenomenon of inferior imitations impacting the market.

6.1.2 Academic and research level: single cooperation model and poor transformation of achievements

Superficial cooperation forms: Universities are mostly involved in "one-time design", lacking in-depth research on the essence of crafts (e.g., the impact of soil cloth structure on product performance);

Misalignment of demand: Academic and research institutions often proceed from the perspective of "artistic innovation", ignoring production feasibility and market demand. For example, bamboo weaving artworks designed by a university are too complex, with a unit price exceeding 2,000 yuan, resulting in low market acceptance;

Lack of transformation channels: Research results (e.g., new material processing technologies) mostly stay at the level of papers and patents, without forming a technology promotion mechanism for enterprises.

6.1.3 User level: insufficient motivation for villagers' participation and delayed market feedback

Lack of incentive mechanisms: The daily income of villagers participating in craft production is about 80 yuan, lower than 150 yuan from working outside, leading to low participation willingness;

Slow transmission of consumer demand: Enterprises mostly produce based on experience, without establishing effective market research mechanisms. For example, an enterprise mass-produces traditional soil cloth bed sheets but is unaware that young consumers prefer small-sized decorative cloth;

Weakened community identity: Young villagers have reduced cultural identity with local crafts, believing that "old crafts cannot keep up with the times" and lacking a sense of inheritance responsibility.

6.1.4 Value conversion mechanism

The integration promotes the value conversion of arts and crafts at three levels:

Cultural value → economic value: Through the modern translation of traditional symbols by academic and research institutions (e.g., transforming kitchen flower patterns into cultural and creative IP), the added value of products is enhanced; the government converts cultural experiences into tourism income through cultural-tourism integration projects (e.g., craft-themed homestays);

Ecological value → market value: Highlighting the environmental protection characteristics of craft products (e.g., "Chongming cloth, zero chemical additives"), attracting consumers with strong environmental awareness through certification (e.g., organic certification) and brand story dissemination, forming differentiated competitiveness;

Social value → sustainable value: Villagers achieve local employment by participating in craft production, enhancing their identity with local culture, forming a virtuous cycle of "economic income - cultural confidence - inheritance willingness", and ensuring the sustainability of craft innovation.

6.2 Suggestion: Constructing a "Five-in-One" Collaborative Governance System

6.2.1 Government: strengthen top-level design and service guarantee

6.2.1.1 Improve the system

Formulate the "Chongming Rural Arts and Crafts Innovation and Development Plan (2025-2030)", clarify the overall goals, phased tasks, and departmental responsibilities of the integration of government, industry, academia, research, and application; integrate existing support policies, establish a "Chongming Craft Innovation Special Fund", and support long-term projects (e.g., academic-research cooperation for more than 3 consecutive years) through a "reward instead of subsidy" method;

6.2.1.2 Build a collaborative platform

Establish the "Chongming Rural Arts and Crafts Innovation Alliance", with a district government leader as the chairman, and members including government departments, enterprises, universities, inheritors, and villagers' representatives, holding monthly coordination meetings to solve specific problems in integration;

6.2.1.3 Optimize supervision services

Formulate the "Quality Standards for Chongming Rural Arts and Crafts", stipulating the materials, techniques, and safety indicators of products such as soil cloth and bamboo weaving; establish an intellectual property protection center to provide patent application and infringement rights protection services for inheritors and enterprises.

6.2.2 Industry: enhance subject capabilities and market operation levels

6.2.2.1 Cultivate leading enterprises

Focus on cultivating 2-3 craft enterprises with annual output value exceeding 2 million yuan through mergers and reorganizations and support, giving play to their leading role in technological R&D, brand building, and market development;

6.2.2.2 Promote the upgrading of cooperatives

Guide small workshops to join cooperatives, implement "unified raw material procurement, unified quality standards, unified brand sales" to reduce production costs;

6.2.2.3 Strengthen brand building

Create the "Chongming Arts and Crafts" regional public brand, design brand logos (integrating soil cloth and bamboo weaving elements), and formulate brand use specifications; support enterprises to participate in exhibitions such as the Shanghai Cultural and Creative Expo and the National Intangible Cultural Heritage Exhibition to enhance brand awareness.

6.2.3 Academia and research: deepen cooperation connotation and achievement transformation

6.2.3.1 Establish long-term cooperation mechanisms

Promote universities and enterprises to jointly build "Chongming Craft Innovation Laboratories", with universities stationing designers and technical personnel for long-term on-site work, and enterprises providing practice venues and funding support, forming a closed-loop of "R&D - testing - production";

6.2.3.2 Carry out customized research

Targeting enterprise needs, universities and research institutions conduct directional research (e.g., soil cloth wrinkle resistance technology, bamboo lightweight processing), with research results prioritized for transformation to cooperative enterprises, and transformation benefits shared according to agreements;

6.2.3.3 Train professional talents

Local universities in Shanghai offer a micro-major in "Chongming Craft Innovation Design", with curriculum combining traditional techniques (inviting inheritors to teach) and modern design (e.g., CAD drawing, e-commerce operation) to talents to Chongming.

6.2.4 User side: stimulate villagers' participation vitality and market feedback

6.2.4.1 Establish a villagers' incentive mechanism

Provide skill subsidies to villagers participating in craft production (monthly subsidy of 500-1000 yuan according to skill level), implement a salary system of "basic salary + piece-rate commission + year-end bonus" to ensure that income is not lower than that from working outside;

6.2.4.2 Build a consumer participation platform

Set up a "design crowdfunding" section on e-commerce platforms, invite consumers to vote for soil cloth patterns and bamboo weaving styles, and reward adopted ideas; regularly hold "craft experience days" to collect consumers' suggestions for product improvement;

6.2.4.3 Promote community participation

Build "craft culture walls" and "technique exhibition halls" in rural areas, organize youth craft summer camps to enhance villagers' identity and inheritance willingness of local crafts.

6.2.5 Model innovation

6.2.5.1 Closed-loop model of “incubation + academic-research empowerment + enterprise transformation + market feedback”: the

government provides incubation funds and venues, academic-research institutions provide design and technology, enterprises are responsible for production and sales, and part of the profits are invested in inheritor training and technique research, forming a sustainable cycle;

6.2.5.2 "Craft + eco-tourism" model: set up craft experience areas in scenic spots such as Dongping National Forest Park and Xisha Wetland, where tourists can participate in activities such as soil cloth weaving and bamboo weaving, and their works can be taken home or sold on consignment by the scenic spots; develop "craft-themed homestays" with decorations using local craft products, providing craft-related catering (e.g., bamboo tableware) and activities (e.g., night kitchen flower painting experience);

6.2.5.3 "Internet + craft" model: build the "Chongming Craft Cloud Platform", integrating functions such as product display, online transactions, technique teaching, demand, and using VR technology to display craft production processes to enhance consumer experience.

Future research can be expanded in the following directions: first, explore the application of digital technologies (such as artificial intelligence design and blockchain traceability) in the integration of government, industry, academia, research, and application to improve integration efficiency; second, study the collaborative model of craft innovation resources between Chongming and surrounding areas under the background of the Yangtze River Delta integration; third, analyze the long-term impact of the rural revitalization strategy and ecological island construction on the integration and innovation of arts and crafts, and track the evolution process of integration models.

Through continuously deepening the in-depth integration of government, industry, academia, research, and application, Chongming rural arts and crafts are expected to break through development bottlenecks and become a new driving force for rural revitalization with both cultural charm, ecological characteristics, and market competitiveness.

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