

## Research on the Differentiation between Xiangxi Tie-dye and Nantong Tie-dye

Gao Xiang

Ph.D. Candidate, Faculty of Decorative Arts, Silpakorn University

Corresponding Author: gaoxianglife@gmail.com

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### Abstract

Tie-dyeing is a specific fabric dyeing pattern resulting from binding and dyeing the fabric in particular ways. Tie-dyeing in China developed into diverse styles due to geographical, historical, and cultural factors. This paper compared the tie-dye products, development process, and sales mode in Xiangxi and Nantong. The development of tie-dye in Xiangxi is mainly a combination of traditional tie-dye and local tourism. In contrast, Nantong tie-dyeing is more modern in its techniques and production methods and thus is more innovative than traditional tie-dyeing. This paper identified the major problems in developing the tie-dye industry in Xiangxi: insufficient talent, low production efficiency, and low product quality. The current problems in Nantong include the tie-dye industry lacking designing talents, products lacking cultural heritage, and cooperates lacking brand awareness. This paper suggested that the tie-dye industry in Xiangxi and Nantong should learn from each other and improve personnel training, product marketing, and brand building to promote their status quo. This research is conducive to the target protection of the tie-dye industry and the inheritance of other traditional handicraft arts.

**Keywords:** Xiangxi tie-dyeing; Nantong tie-dyeing; comparative study; traditional art preservation

## 湘西扎染与南通扎染的对比研究

Gao Xiang

Ph.D. Candidate, Faculty of Decorative Arts, Silpakorn University

Corresponding Author: gaoxianglife@gmail.com

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### 摘要

扎染是一种染色技艺，通过在织物染色前，采用特定方式将部分织物结扎，以防止其染色，形成特定图案。中国的扎染由于地域、历史和文化等因素的影响，形成了多种风格。本研究比较了湘西和南通两地的扎染产品、发展历程和销售模式。湘西扎染主要与传统技艺和当地旅游结合，而南通扎染更注重现代技术和创新。研究发现，湘西扎染面临人才不足、生产效率低等问题，南通扎染则存在设计人才缺乏和产品缺乏文化底蕴等挑战。建议两地相互学习，加强人才培养、产品营销和品牌建设，以促进扎染产业发展和传统手工艺传承。

**关键字:** 湘西扎染, 南通扎染, 比较研究, 传统艺术保护

## Introduction

Tie-dyeing refers to a dyeing method in which the fabric is tied up so that it cannot be dyed when dyed and form a particular pattern (Wang, 2019, p.13). This expressive art Tie-dye sprouted in China during Qin (221 BC-207 BC) and Han Dynasties (202 BC-220 AD) and reached its peak in Tang Dynasty (618 AD-907 AD) (Yang, 2010, p.17). Since then, tie-dye artifacts and technology thrived and have been exported to surrounding nations. During the development of tie-dyeing, geographic conditions, ethnic cultures, and historical backgrounds lead to specific regional differences in tie-dyes. Among the significant variants of tie-dyeing art, Nantong tie-dyeing, and Xiangxi tie-dyeing are China's intangible cultural heritage protection projects. As part of the doctoral study, this qualitative descriptive study aims to address two research questions:

1. What are the different features of the tie-dyeing products and industries in Nantong and Xiangxi?
2. What are the current problems in the preservation and development of tie-dyeing industry in Nantong and Xiangxi?

The production area of Xiangxi Tie-dyeing is in Phoenix County, Hunan Province, on the border of Xiangqian. In 2012, the technique of Xiangxi Tie-dyeing was declared an Intangible Cultural Heritage of Hunan Province. Several ethnic groups, such as Han, Miao, Tu, and Hui, in the mountainous region, contribute to the unique culture of this region. The landscape and synthetic ethnic culture form precious tourism resources. Therefore, Xiangxi Tie-dyeing has a distinctive ethnic style bound up with tourism. On the one hand, traditional handicrafts like tie-dyes should create more economic and social benefits by catering to tourists' needs. On the other hand, such traditional handicrafts industry needs to balance the intangible cultural inheritance and the innovation of the art form (Liu, &Liu, 2022, pp. 156-160).

Nantong is another central production area of Tie-dyes. Nantong tie-dyeing originates from Nantong, Jiangsu Province, where the traditional fabric and silk industry has thrived for thousands of years. In the 1970s, orders for tie-dye products were transferred to Nantong from North Korea, benefiting from its geographical location, human resources, and developed transportation. Thanks to the overseas orders, Nantong tie-dyeing is modern and innovative (Lu, 2014, p.69). In 2011, Nantong tie-dyeing techniques were selected as an Intangible Cultural Heritage of Jiangsu Province. However, in a competitive market, Nantong's tie-dye products suffer the plight of the production and sales of tie-dye products in Nantong. (Zheng, &Jiang, 2018, pp. 82-83).

Previous studies have focused on the history of tie-dyeing tie-dye patterns and techniques tie-dye materials and modernized tie-dye crafts. The objective of this study

is to provide theoretical and practical analysis and suggestions for the conservation and development of the tie-dyeing industry. In this research, the development of Xiangxi tie-dyeing and Nantong tie-dyeing will be contrasted to guide the further development of the tie-dyeing industry. (Y. Zhang, 2000; Q. Zhang, 2007; Yang, 2010; Zhu & Zhang, 2019; Liang, Gu & Liu, 2009)

## Methodology

This research was a qualitative descriptive study based on relevant literature on the products, history, production methods, and development status of tie-dyeing in Xiangxi and Nantong, analyzing the differences between Xiangxi tie-dyeing and Nantong tie-dyeing and summarizing their respective status quo and problems in development.

## The Comparison of Xiangxi Tie-Dye and Nantong Tie-Dye

### 1. The Differences in Tie-Dye Products

Xiangxi tie-dye and Nantong tie-dye have different product styles due to differences in cultural background, historical background, and geographical conditions. Xiangxi tie-dye's origin is in inland China (Figure 1). It is also an area where ethnic groups live together, which gives the tie-dye products of Xiangxi tie-dye a unique ethnic style. The origin of the Nantong tie-dye is in the coastal area (Figure 1), which is highly active in foreign trade. Thus, tie-dye products in this area integrate elements of Western culture, making the style of Nantong tie-dye modern and fashionable.



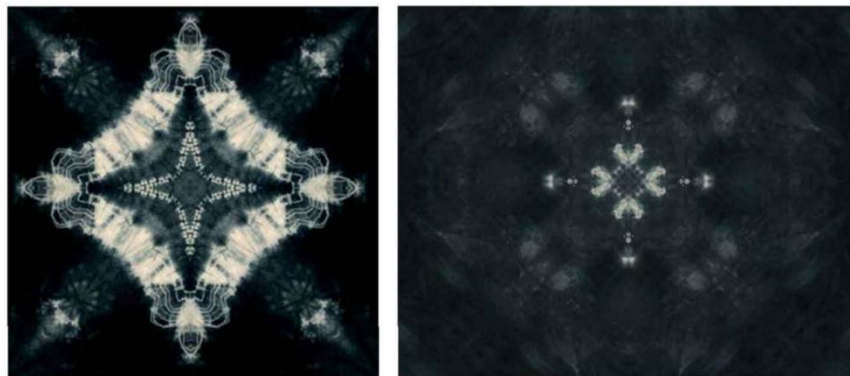
**Figure 1:** The geographical location of Xiangxi Tie-dye and Nantong Tie-dye  
(Source: Author, 2022)

Map of China (Source: Geographia Map Company, 1879-1958)

### 1.1 The differences in the tie-dyeing process

Xiangxi tie-dyeing is based on the traditional tie-dyeing process. The process is divided into nine steps: painting the pattern, tying the knot, dipping, dyeing, rinsing, removing the thread, rinsing, drying, and ironing (Tian, 2013, p.29). The technique is sophisticated and intricate. For example, there are eight methods to tie the knots. The shortcomings of this traditional production process are evident in its high workload and low efficiency. However, its strength is the unique product design from small production runs.

Nantong tie-dye, based on the inheritance of handmade tie-dye, is one of the first areas in China to utilize digital tie-dye. Two digital production approaches are the most used. One is to use fractal means to imitate the pattern-forming method of tie-dyeing. The other is to directly use modern methods to extract tie-dye patterns and then use two-dimensional design software to process the patterns (Figure 2). The advantages of digital tie-dyeing are rich patterns and vivid shades, which can be mass-produced by machinery. Nevertheless, digital tie-dye patterns look too mechanical and lack a handcrafted texture.



**Figure 2:** Pattern Transformation Using Photoshop Software (Source: The research on the application of combining tie dyeing art with digital printing technology take the tie-dye of the Bai people of Dali as an example (Zhang, 2020))

### 1.2 The differences in tie-dye raw materials

The main fabrics of Xiangxi tie-dyeing are cotton, linen, silk, and other natural materials. Xiangxi tie-dyeing uses pure natural indigo dye solution as the main dye, which is healthy and environmentally friendly.

Nantong is close to the silk production area. Nantong tie-dyeing used silk and cotton fabrics as the primal fabrics and later included polyester habotai, synthetic chemical fiber materials, and wool materials. The dyes of Nantong tie-dye are divided into

traditional and modern tie-dye dyes. Traditional hand tie-dyeing usually uses vegetable dyes, while modern tie-dyeing uses reactive dyes, direct dyes, and acid dyes.

### 1.3 The differences in tie-dye patterns

The patterns and graphics of Xiangxi tie-dyeing are inspired by the myths and legends of local ethnic groups, natural landscapes, animals and plants, and traditional auspicious patterns to create symbolic tie-dye patterns. For example, the pattern of “butterfly” represents good fortune, “peony” represents wealth, “bird” means joy, and “phoenix” means good luck (Figure 3).



**Figure 3:** Phoenix pattern in tie-dye in Xiangxi (Source: The People’s Government of Hunan Province, 2014)

Nantong sprouted and boosted in the 1970s. It started by producing and imitating Japanese tie-dye orders. In addition to the traditional Chinese culture, Nantong tie-dye patterns are also influenced by abstract patterns in foreign cultures. Other patterns are renovated from Han ethnic culture, the mainstream tradition in China, carrying auspicious meanings. Some characteristic tie-dye themes include “Blossoming Mountain Flowers” (Figure 4) and “Jinyu Mantang”.



**Figure 4:** Blossoming Mountain Flowers (Source: Xiaoman M., 2017)

2. The differences in the processes of development

The development of the modern tie-dye industry in Xiangxi has undergone three stages. The first stage, from the late Qing Dynasty (1840 AD-1912 AD) to the late 1950s, was the transition from independent, family-owned production to collectively owned cooperatives. The second stage was from the late 1970s to the 1990s when collective ownership cooperatives were transformed into private companies. The third stage, from the 1990s to the present, is the market-oriented transformation of the production methods of private companies, mainly driven by tourism.

The foreign trade orders, the 1970s was the revival stage for tie-dyeing in Nantong. In this stage, some tie-dye factories in Nantong have introduced machinery and equipment to combine manual printing and mechanical printing, boosting rapid development.

3. The differences in the way of production and sale

Xiangxi tie-dyes are mainly produced in family workshops and sold in local stores. Taking advantage of the local tourism market, tie-dyeing workshops, experience halls, and souvenir stores are established to promote the tie-dyeing industry.

The production and sales of Nantong tie-dye mainly rely on exportation. Nantong tie-dyers creatively created a new industrialized operation model of “enterprise + craftsman + rural surplus labor”. It contributed to the development and prosperity of poverty-stricken rural areas and solved the problem of rural surplus labor employment.

Table 1 The Difference Between Xiangxi Tie-Dye and Nantong Tie-Dye

	Xiangxi tie-dye	Nantong Tie Dye
Tie-dye process	Design, composition, painting, ligation, soaking, dip dyeing, stitch removal, cleaning, drying, mounting and other processes.	Fractal art means and software drawing means
Tie-dye fabric	Cotton, linen, silk, and other natural materials	Silk, cotton, polyester spinning, chemical fiber materials, etc.
Tie-dye dyes	Pure natural indigo dyeing solution made from fermented plant leaves.	Traditional dyes: mainly vegetable dyes Modern Dyes: Reactive Dyes, Direct Dyes, Acid Dyes

**Table 1** The Difference Between Xiangxi Tie-Dye and Nantong Tie-Dye (continue)

	Xiangxi tie-dye	Nantong Tie Dye
<b>Tie-dye pattern</b>	Animal and plant patterns, auspicious patterns, natural scenery patterns	Animals and plants, human figures, auspicious patterns of the Han nationality, abstract geometric patterns
<b>The difference in the development process</b>	Family workshops - collective cooperatives - private tie-dye enterprises or family workshops	Relying on foreign trade orders in the initial stage-Introducing machinery in an independent development stage-Entering a new development stage
<b>The differences in production and sales models</b>	Family workshop production	The new industrialized production mode of "enterprise + craftsman + rural surplus labor."

To sum up, tie-dyes in Nantong and Xiangxi have different patterns, development processes as well as production and sales modes (Table 1), which leads to the strengths and shortcomings of the tie-dying industry in the two areas.

### Analysis of The Current Situation of Tie-Dyeing in Xiangxi and Nantong

Under the impact of modern industrial products, the traditional handicrafts industry is withering and losing its craftsmanship, a common problem faced by both Xiangxi and Nantong tie-dyeing. However, due to the differences in products, history of development, and marketing methods, the tie-dyeing industry in the two regions is currently in different development situations and encounters varied problems.

#### 1. Analysis of the current situation of tie-dyeing in Xiangxi

Unique cultural attributes are the advantages of Xiangxi tie-dyeing. Xiangxi tie-dye shows the unique Xiangxi culture to the outside world through tie-dye souvenirs with ethnic characteristics. However, the study found two main problems in developing tie-dyeing in Western Hunan. Firstly, the personnel in traditional tie-dye manufacturing is inadequate. Traditional tie-dye products are mainly handmade. Young people are reluctant to engage in tedious labor with low wages. As a result, few senior local craftsmen are adept at the intricate production techniques of Xiangxi tie-dyeing, which further limits the scale of the traditional handmade Xiangxi tie-dye production.



Secondly, the traditional tie-dyeing process has a long history and rich cultural connotations. However, compared with low-cost, effective modern mechanized production, the traditional tie-dyeing process faces immediate economic contradiction, mainly due to production constraints such as cumbersome processes, long production cycles, and low output. However, as the market concepts increasingly apply to the handicraft industry, the proportion of mechanical processing is gradually expanded, leading to many homogenized handicrafts with rough artistry and low prices with excessive use of chemical dyes.

To sum up, several problems exist in the contemporary development of the Xiangxi tie-dye. On the one hand, the industry needs to attract more fresh blood. On the other hand, it has to avoid the potential risks of modernizing a traditional cultural heritage. A clear and rational route should be explored for the Xiangxi tie-dye to convert cultural products into a commercial advantage in the modern age.

## **2. Analysis of the current situation of tie-dyeing in Nantong**

Nantong tie-dye has a variety of styles, synthesizing local and foreign cultures. While tie-dyeing in other regions in China is stuck in traditional mindsets of dyeing skills and pattern designs, Nantong tie-dyeing has taken the initiative to develop products adapted to overseas markets. However, three apparent problems with the Nantong tie-dye are identified. Firstly, the Nantong tie-dyeing industry is short for designers. Many tie-dyeing enterprises in Nantong believe their tie-dyeing technology has met the market demands and therefore do not need to hire professional design talents. They neglect the significance of product design and market development. When the market demands change, the development of the enterprises will be in trouble due to the lack of design and market research talents. Secondly, the products lack cultural attributes. Most Nantong tie-dye manufacturers mainly process foreign orders on their behalf, which deprives Nantong tie-dye products of their unique regional and ethnic cultural characteristics, resulting in limited product recognition. Another problem concerns the sustainable development of the Nantong tie-dye industry. Tie-dyeing factories in Nantong mainly produce for other brands. Lacking independent brands will hinder the development of the tie-dyeing industry in Nantong in the long run.

To sum up, Nantong's tie-dye industry has a considerable scale, and its product sales range is also the widest among China's major tie-dye production areas. However, the lack of professional product designers, the lack of cultural attributes of products, and the lagging in brand building are the major obstacles to developing tie-dye in Nantong.

## **Suggestion**

According to the above analysis and discussion, this research proposes suggestions for Xiangxi tie-dye and Nantong tie-dye in four aspects: talent cultivation, production and sales, cultural value and brand building, publicity, and sales channels.

### **1. Cultivating tie-dye talents**

Beyond tie-dye industry associations and government departments, cultivating tie-dye talents should exploit the talent resources in the entire industry. Comprehensive analysis and research should be carried out to survey the actual situation in China and the actual local situation. The improvement of the legal and regulatory system related to traditional handicrafts should be accelerated.

To foster the heirs of the tie-dye tradition, the importance of the inheritance and innovation of tie-dye should run through education at all levels. For example, tie-dye experience courses can be carried out in tie-dye production areas and even more expansive areas to improve young people's understanding of tie-dye and their interest in this art. Colleges and universities should give full play to their teaching and human resources, creating tie-dye art creation studios and inviting experienced masters to the studios for training. Besides, comprehensive training of personnel currently engaged in the tie-dye industry should be provided regularly, improving the technical personnel's design and marketing abilities. It is also necessary to introduce professional design talents to local enterprises. Moreover, strategies like effective incentive mechanisms should be developed to retain professional tie-dye artists. Efficiency and fairness must be considered in the payment. Distribution according to work should be the main principle, while multiple distribution methods, including contribution distribution and production factor distribution, can inspire engagement. Both technical and capital factors should be involved in the reward mechanism. The organic combination of spiritual and material incentives can form a diversified reward model, with administrative rewards as the guide, unit rewards as the main, and social rewards as the supplement.

### **2. Adjusting the structure of tie-dye production and sales**

Several strategies can be applied to promote tie-dye manufacturing and sales modes. First, the sales structure can be adjusted to optimize the profit pattern. Tie-dye producers should develop or innovate low-end, mid-end, and high-end products to realize the profit complementarity of tie-dye products of different grades. For example, in tie-dyeing in western Hunan, individual workshops should overcome their relatively weak "going it alone" position and consider appropriate alliances to strengthen their merits. Meanwhile, large tie-dyeing households should pay more attention to the accumulation and reinvestment of capital, making the original small factories bigger and stronger.

Modern corporate enterprises should introduce new equipment, expand production scale, improve efficiency, and broaden sales channels. Focusing on the development trend of the industry and considering its long-term development from a more macro perspective, it is necessary not only to invest in the complex powers such as increasing output value, expanding scale, and improving sales but also to focus on technological innovation, brand building, cultural connotation enhancement, and other perspectives. Expanding market information exchange can reduce related information costs and optimize sales.

Another strategy is to expand the industrial chain. For example, in Xiangxi tie-dye, in terms of the sales form of tie-dye products, the direct retail of tie-dye products and the wholesale of foreign merchants should be combined. The mature order sales form should be consolidated and improved in terms of sales scope, ensuring the current retail scale of tie-dye products in surrounding villages and towns, and expanding the wholesale sales business in other parts of the province. In addition, the scope of order sales in peripheral markets outside the province and overseas markets should be expanded.

Moreover, market research plays a crucial role in grasping market positioning. To successfully occupy the market, conducting an accurate research job is necessary, focusing on potential customers of tie-dye products. Four questions should be answered before designing and producing the tie-dye product. First, who will choose tie-dye products? Second, who would not choose tie-dye products? What factors prevent these customers from buying tie-dye products? The third is what kind of tie-dye products should be produced to meet the diversified needs of consumers. Moreover, the fourth is what promotional methods should be used to stimulate consumers' purchase behavior. Practical and informative market research is the prerequisite for the market occupation.

### **3. Excavating the cultural value of tie-dye and accelerating the brand building of tie-dye**

Its cultural values should be exploited and cherished to boost the development of the tie-dyeing industry.

Each nation and ethnic group has its unique culture based on varied values, living habits, and historical encounters. These differences can satisfy modern people's psychology of pursuing novelty. Tie-dye is not an independent cultural carrier but a part of the entire cultural system. Tie-dye handicrafts can be an art form that tells stories reflecting Chinese aesthetics. For example, Nantong tie-dyeing can use characteristic Chinese crafts such as embroidery, hollowing out, and inlaying to increase the Chinese style of products. Meanwhile, tie-dye patterns can integrate symbols, characters, and

plots of legends and folklore. It is an integral part of developing the tie-dye industry to give full play to cultural charm and explore the aesthetic value of tie-dye.

Meanwhile, Nantong tie-dye and Xiangxi tie-dye must grasp fashion trends. The tie-dye products should cater to the demands of the market. The tie-dye designers should even predict and plan for the future market and develop tie-dye products in advance to avoid missing significant opportunities. The current designs of tie-dye products are obsolete. Most practitioners still replicate relatively simple styles, which is not conducive to market competition. The tie-dye design should adapt the traditional culture to the trend in fashion. In a society that praises innovation and individualism, the unique tying techniques, the wide variety of patterns, and the fresh and elegant aesthetic taste of tie-dyeing can effectively exploit the cultural legacy to take a firm ground in market competition. Products that integrate cultural values and consumer needs will help the tie-dyeing industry in Xiangxi and Nanto to form distinctive brands.

#### **4. Expanding tie-dye product promotion channels and sales channels**

Another significant aspect of preserving and developing the tie-dye industry is expanding its promotion and sales channels to enlarge product sales.

To promote the tie-dyeing industry, using modern information technology is essential. Firstly, effective publicity is critical. Various social media platforms can be used to promote the charm of intangible cultural heritage and the uniqueness of tie-dye techniques. Video clips and commercials can be released on popular social media platforms like Weibo, WeChat Moments, and Tik-tok to appeal to potential consumers. In addition, documentaries and vlogs recording tie-dyeing skills can also serve as amazing promotional tools. Secondly, sales can be enhanced by leveraging modern and advanced information technology like big data and virtual reality. With national policies encouraging these information technologies, many tie-dye producers are selling their handicrafts in online shops.

To expand the sales channels for tie-dye products, the government can utilize various sales platforms like Taobao, Jingdong, and Pinduoduo to organize producers for collective training, update their management concepts, and enhance their marketing skills. Furthermore, the sales channels for tie-dye products can be diversified using the "Internet + intangible cultural heritage" and "Internet + handicrafts" approaches. In this way, not only the tie-dye products can be sold in offline souvenir shops and exhibitions, but they can also be sold via online channels. The combination of online and offline modes provides a diverse range of promotion and sales channels, attracting wider consumer groups and increasing the revenue of practitioners and enterprises.

## Conclusion

The tie-dye art expresses China's rich cultural heritage, which has developed for centuries. It embodies traditional artistic charm while also reflecting contemporary characteristics and regional culture. Tie-dye has a robust and enduring vitality and should be preserved and developed for future generations. Xiangxi and Nantong tie-dye differ significantly in their production techniques, sales modes, and product styles, resulting in differing statuses for each. Foreign cultures have influenced the Nantong tie-dye and have become more inclusive. As a result of its location, it has developed a foreign trade industrial chain focused primarily on production and sales. Xiangxi tie-dye, on the other hand, has maintained its unique national characteristics and cultural heritage and has always adhered to developing an industrial chain with national characteristics.

To achieve greater sales and a broader influence, Xiangxi Tie-dye should learn from Nantong Tie-dye's innovative technology and advanced production and sales methods. Meanwhile, Nantong tie-dye should further explore its distinctive regional culture to create a unique artistic style, becoming a cultural symbol of the region. By complementing each other, Xiangxi tie-dye and Nantong tie-dye can jointly promote the development of the tie-dye industry and achieve sustainable growth. This research has significant theoretical and practical implications for the country's economic development and ethnic minorities, and there is still a broad space for exploration. While this study may have limitations, future researchers can approach the problem from various angles and introduce new vitality and development directions to tie-dye art.

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