

Artistic Evolution of Color-Printed Cloth in Linyi: Strategies for Cultural Industry Advancement

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Abstract

This study is to explore the artistic features of color prints in Linyi City, Shandong Province, China, examining their potential contributions to the creative endeavors of the cultural industry. It involves an analysis of these features, unveiling their cultural significance and artistic value, establishing them as vital elements in literary design. Additionally, the paper proposes an application and development strategy for color-printed cloth, exploring how the fusion of design and technology plays a pivotal role in cultural creative design. The functional aspects of color-printed cloth as a product are elucidated, highlighting its capacity to symbolize design and artistic features. Furthermore, it discusses how it alters the way cultural transmission and dissemination occur, expands marketability through popularization, and establishes branding strategies. These facets, when harnessed effectively, foster the prosperity and advancement of local cultural industries. Moreover, the artistic transformation of color-printed cloth is shown to engender the potential for sustained design development.

Keyword : Color Printed Cloth, Artistic Features, Cultural Transmission Strategies, Design Creation

1. Introduction

In recent times, there has been a global consensus on the ecological preservation and transmission of intangible cultural heritage and it leads to a newfound appreciation for many traditional crafts. Across various regions in China, cultural creation derivatives utilizing non-material resources have emerged with the comprehensive exploration and organization of exceptional cultural practices. Among them, color-printed cloth, originating in the Qin Dynasty and flourishing during the Song and Yuan Dynasties, was once widely integrated into everyday civilian life, manifesting in commonplace items like index cards and paper shoes. However, the advent of industrialization gradually supplanted these folk arts with mechanized mass production, contributing to the slow erosion of color printing from contemporary society. Presently, only the elderly from preceding generations continue to pass down this skill, signifying its fading presence in today's era.

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Recognizing its significance, Linyi City's color-printed cloth was designated as an intangible cultural heritage item of Shandong Province in 2006. Its enduring artistic value and allure lie in its intricate compositions, vibrant hues, artistic patterns, and profound symbolism. The inheritors of this craft strive to evolve its traditional techniques, incorporating modern dyeing equipment to propel its development. Color-printed crafts stand as prized intangible cultural heritage assets in various provinces across China, notably in Shandong, Henan, Zhejiang, Xinjiang, and others. Despite its recognition, there exists a limited number of contemporary color-print-related productions in China, with most belonging to earlier periods. Noteworthy works in this domain include publications such as Lin Hanquan's 'Folk Color Printing Patterns' (1955), Bao Jia's 'Shandong Folk Color Prints' (1986), and 'Folk Prints' (1987) by Zhang Doyil and Xu Yeot.

The academic research on color-printed cloth has made significant strides. Sheng Wu delves into the history and evolution of Chinese intaglio crafts, concentrating on design formations, cultural implications, and the underlying aesthetic and cultural attributes [1]. Regarding color-printed cloth, studies have investigated production techniques, materials, and applications in Linyi, Shandong [2]. Some research focuses on the development direction and brand value of Shandong index designs [3], as well as the current status of folk color prints and channels of cultural transmission [4]. Other studies begin with folklore, interpreting the form and content of Linyi color prints [5]. Addressing the decline of traditional color print canvases due to outdated production crafts, one study recommends developing new production methods and exploring novel product forms for industrialization [6][7]. Presently, both domestic and international academic research on color-printed cloth primarily concentrates on aspects such as its historical origins and pattern characteristics. Most common color-printed cloths date back to the Qing Dynasty, continuing until the reform and opening up period in China. However, only a limited number of tinted printing works have survived, restricting the scope of color-printed cloths primarily to the private domain. This limitation poses a challenge in comprehensively studying and understanding the broader landscape and potential of color-printed cloth.

However, there remains a notable gap in the preservation efforts and a dearth of specific studies exploring the development of derivatives stemming from color-printed cloth. In this regard, the objective of this paper is to address these gaps by thoroughly exploring the development, historical trajectory, current status, and craftsmanship associated with Linyi's color-printed cloth. Through this exploration, the paper aims to unearth its distinct artistic features and unravel its cultural significance.




2. Development of China's Civilian Color-Printed Cloth

2.1 The Origin and Evolution of Color-printed Cloth

The folk art of printing and dyeing in Shandong traces its roots back to the Qin Dynasty and witnessed gradual advancements in crafts and printing technology during the Sui Dynasty. Notably, wood block printing with convex patterns and openwork printing gained popularity during this period. Further evolution occurred in the Song Dynasty when craftsmen introduced copperplate techniques to ease engraving and printing processes. By the Qing Dynasty, two prominent crafts emerged: polychrome scratch printing and openwork brush printing. However, the advent of machine textiles following the Opium Wars significantly impacted handcrafted traditional color printing, resulting in the survival of only a handful of precious color printing plates to this day [8].

The preservation of intangible cultural heritage serves as a catalyst, breathing life into color-printed cloth, prompting increased attention toward its conservation and transmission. This study centers on the colors of Linyi City in Shandong Province, with key transmitters being Zhang Mingjian, Wang Bin, and Wu Qi. Notably, [Table 1] shows representative works such as Zhang Mingjian's The Lotus Leaves, Wang Bin's Zero Light and Harmony Ten Arts, and Wu Qi's The White Fish. These works stand as significant contributions to exemplify the essence and artistic brilliance of color-printed cloth within the region.

[Table 1] A representative artwork from Linyi City, Shandong Province






Artist	Zhang Mingjian	Wangbin	Wu Qi
Work	The Lotus Leaves	Zero Light and Harmony Ten Arts	The White fish
Image			

2.2 How to Create Color printed Cloth

The most common craft of Linyi coloring paper is openwork paperboard printing, and its main

practitioner is Zhang Mingjian. As shown in [Table 2], the process of openwork paperboard printing can be explained, which mainly includes five processes: typography, painting, engraving, toning, and dyeing.

[Table 2] Procedure for openwork cardboard stitching

Step	Techniques	Details	Image
Typography	Soak paper	To dip glue, cut a piece of paper and soak it in water, and when the paper is flat, let it dry for 6-7 minutes. Apply the glue to the cardboard.	
	Apply gule		
Painting	Drawing	Draw your design on a piece of cardboard and divide the board by color.	
	Division		
Engraving	Engraving	First, carve the design of the abacus with a large area, then the corners and sides with a smaller area. After carving, trim the thorns with talc and paint over and over again with copper oil.	
	Trimming		
	Oiling		
Toning	Coloring	The colors I use most often are black, green, fuchsia, and magenta, and I mix them based on experience.	
	Mixing		
Dyeing	Pressing	Cheesecloth and paper are pressed with a platen press, and the paintbrush is dipped in the appropriate dye to print.	
	Dyeing		










3. The artistic and cultural significance of color-printed cloth

Linyi's colored warp dyeing finds its primary applications in civilian contexts, commonly seen in crafting furoshiki wraps, bed sheets, door decorations, and doll accessories. The patterns predominantly feature depictions of birds, animals, fish, flowers, vegetables, myths, legends, dragon motifs, auspicious symbols, seasonal themes portraying abundance, leisure scenes, and harmonious depictions and imbue these designs with significant cultural and spiritual meanings. The vibrant color schemes employ stark contrasts and complementary tones, creating a visually striking impact. The patterns can be categorized broadly into anisotropic continuous, four-way continuous, and single patterns, collectively lending a sense

of grandeur, historical richness, and ornate decoration.

Furthermore, color-printed cloths often take center stage in ceremonial events like weddings and poetry recitals. These occasions commonly feature patterns symbolizing joy and harmony, including dragon, phoenix, and monkey motifs, each representing different facets of happiness and unity. [Table 3] illustrates the wide-ranging diversity in materials used, primarily categorized into plant, animal, and geometric patterns. Botanical motifs, especially floral designs like peonies, plums, and lotuses, alongside fruits such as grapes, pomegranates, and pumpkins, dominate the patterns. Trees like bamboo and pine complement these botanical themes. Animal patterns encompass real-life creatures like goldfish, butterflies, monkeys, cranes, and lions, as well as mythical creatures like dragons, phoenixes, and giraffes. Geometric patterns, involving dots, lines, and planes, manifest as spiral, circular, and rhombus patterns, often adorning the edges or corners of tie-dye pieces. These diverse patterns collectively enrich the visual and symbolic tapestry of color-printed cloths, reflecting rich cultural traditions and values.

[Table 3] Analyze material representations of iconic symbols







Plant pattern			Animal pattern			Geometric pattern		
Category	Name	Image	Category	Name	Image	Category	Name	Image
Flower	Peony		Birds and animals	Dragon and phoenix		Rhombus	Doors	
Tree	Plum		Bugs and fish	Goldfish		Geometric characters	囍	
Fruits	Pomegranate		Animals	Crane		Comprehensive configuration	Edge	

Color-printed cloths boast bold and vibrant color palettes, often employing contrasting and complementary hues to create visually compelling designs. Red stands as the predominant color, commonly used in significant folk rituals such as weddings, birthdays, and celebratory occasions. Alongside red, highly saturated monochromatic colors like green, yellow, blue, black, and white find widespread usage, allowing for the incorporation of up to ten colors in a single color print [9]. These vivid and diverse color combinations generate a lively visual impact, characterized by strong contrasts.

As shown in [Table 4], quantitative analysis of Linyi's folk color printing papers can be conducted by extracting color data from patterns. In Zhang Mingjian's renowned masterpiece The Lotus Leaves, the symbolism of five red lotus flowers representing the five doors of fortune is accentuated by the

contrasting presence of four goldfish in red and green. The surrounding pomegranates and peonies against a black backdrop further enhance the vibrancy of colors. Wang Bin's Zero Light and Harmony Ten Arts draws inspiration from the cover design of the Shandong Ten Rites, featuring lotus flowers and red carp as primary elements, complemented by blue crabs at the corners and adorned with floral and carp patterns throughout the periphery, resulting in vivid and distinct colors. In Wu Qi's representative work, The White fish, a prominent fish shape, harmoniously integrates complementary colors with a relatively extensive color palette, achieving a harmonious and luminous overall color scheme. These exemplary works showcase the intricate and captivating interplay of colors within color-printed cloths, emphasizing their dynamic visual appeal and cultural significance.

[Table 4] Interpreting the Color of a Colorprint Cloth


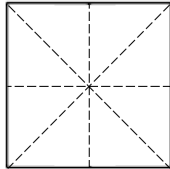

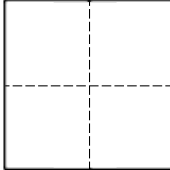


Name	Image	Coloring	HSB	Interpretation
The Lotus Leaves			H:6 S:86% B:93% H:345 S:80% B:93% H:110 S:70% B:72% H:100 S:7% B:18% H:120 S:0% B:100%	The high saturation and high vibrancy reds and greens complement each other, creating a black and white hue and a strong cooling and heating color difference.
Zero Light and Harmony Ten Arts			H:17 S:100% B:86% H:330 S:63% B:87% H:128 S:67% B:49% H:294 S:86% B:52% H:55 S:100% B:92%	High-saturated oranges are paired with high-saturated, medium-vivid purples, and medium-saturated pinks and greens.
The White fish			H:6 S:89% B:85% H:243 S:65% B:55% H:328 S:78% B:61% H:106 S:62% B:68% H:51 S:100% B:93% H:180 S:3% B:13% H:115 S:0% B:100%	The complementary contrast of saturated yellows and medium-saturated purples against saturated reds and medium-saturated blues makes the entire screen feel heavy and harmonious.


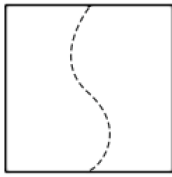
The design structure of color-printed cloths adheres to relatively fixed formats, primarily encompassing single patterns, suitable patterns, and continuous patterns [10]. Different applications dictate specific design preferences: items like belly pouches, bedding surfaces, doorsteps, and wall hangings predominantly feature single and suitable patterns, whereas bed and table perimeters, commonly utilize anisotropic continuous and four-way continuous patterns. Additionally, hoods, and curtains consistently incorporate anisotropic continuous patterns along their edges [11].

Single patterns offer a more flexible compositional approach, typically featuring central motifs like phoenixes, dragons, peonies, nautiluses, pine trees, or pomegranates, often surrounded by secondary elements such as bees, butterflies, leaves, or other animals and plants. Geometric shapes like directions, rhombuses, circles, or natural forms like petals serve as decorative elements, adapting to spatial changes and contributing to the pattern's outline [12]. Continuous patterns, whether anisotropic or orthographic, create rhythmic compositions by repeatedly arranging one or multiple basic unit patterns in a regular left-right or up-down manner. Anisotropic continuous patterns are commonly found in outer layers, often in lace-like designs, while four-way continuous patterns circulate dynamically in all directions [13][14].

Placement formats typically rely on symmetry, rotation, and continuity, forming shapes like 'cross' or 'meter'. For instance, as shown in [Table 5], Pattern 1 demonstrates symmetry with a 'meter' arrangement and rotation around a lotus flower, while Pattern 2 exhibits a 'cross' arrangement with complete side-to-side symmetry around the central cover. Pattern 3 features a single 'shu' character surrounded by cranes and deer to achieve balance and harmony, and Pattern 4's central character creates a harmonious and unified screen composition [14]. These design principles underscore the intricate and purposeful arrangement of patterns within color-printed cloths, contributing to their aesthetic allure and symbolic significance.

[Table 5] Compositional form

Name	Image	Batch configuration	Patter composition
Pattern 1 : The Lotus Leaves			Center: Fit to Pattern Corner Modifier: Bisecting
Pattern 2 : Zero Light and Harmony Ten Arts			Center: Fit to Pattern Corner Modifier: Bisecting
Pattern 3 : Luck Drawing			Center: Custom Glyph, Solo Glyph Corner modifier: Bisexual continuous

Pattern 4 : Ostrich			Center: Individual glyphs
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Art symbols possess a dual nature, serving as part of a symbolic system while also pointing to broader cultural contexts. Color printing, being a familiar folk art symbol, holds significant practical and aesthetic value, seamlessly integrated into everyday civilian life. The vivid and comprehensive colors alongside richly designed patterns carry profound aesthetic and cultural significance, encapsulating the vitality and essence of people's lives while interpreting color as an artistic symbol. Analyzing their forms and compositions reveals the inherent meaning and artistic worth embedded within color-printed cloths.

These cloths represent a fusion of practical utility and aesthetic allure, their materials not only possessing beauty but also bearing sacred significance. They directly or indirectly mirror the local populace's aesthetic preferences and folklore, reflecting their aspirations for a joyful life. For instance, the symbolism within these patterns is profound: the phoenix and peony symbolize beauty and prosperity, the dragon and phoenix signify marriage, the pomegranate denotes fertility and good fortune, while the magpie symbolizes harmonious unions. Characters like 'Shu' represent longevity and good fortune, with combinations like bats and 'Shu' symbolizing a 'revenge pair', while cranes and pine trees signify health and longevity.

4. Color Printed Cloth Applications for Product Packaging Design

Color-printed cloth, with its distinctive artistic features and deep cultural significance, reflects the social dynamics and aesthetic sensibilities of local communities. However, in contemporary society, the marginalization of color-printed cloth due to the transition from traditional craftsmanship to mechanized production has gradually diminished its prominence [15][16]. Despite this challenge, the fusion of intangible cultural heritage with literary design provides a promising avenue for preserving and transmitting folk handicrafts like color printing, facilitating a broader understanding of this traditional art form.

The design of the 'The Lotus Leaves' scarf pattern, inspired by Zhang Mingjian's work as shown in [Fig. 1], serves as an exemplary illustration. The scarf's front features a lotus flower at its center,

surrounded by eight carp arranged symmetrically in all directions, creating an axisymmetric structure. On the reverse side, a central circular pattern is surrounded by carp and lotus flowers against the background. The color palette employs contrasting orange and blue tones, modulated in saturation and purity to complement the overall scheme. Leveraging this design, the creation of applied products such as cultural items including backpacks and scarves is underway, bridging traditional color-printed cloth with contemporary utility and aesthetics. This approach not only preserves the essence of folk artistry but also ensures its relevance and accessibility in modern contexts, extending its cultural legacy into everyday life.



[Fig. 1] Design and Cultural Products of The Lotus Leaves

Similarly, the packaging design of the Color print series draws inspiration from the theme of tinted printing as shown in [Fig. 2], unified by a dominant yellow color tone. The fish design prominently features saturated red, green, dark blue, and pink hues, strategically chosen to accentuate the product's shape and create a vibrant contrast. This fusion of decoration and application achieves an impactful design, effectively promoting Linyi's folk art and its rich heritage.



[Fig. 2] Color-printed packaging design products

In the realm of product development, the strategic approach involves integrating color-printed cloth artifacts from museums into modern products and lifestyles. This approach opens diverse development

avenues, including exploring artistic values, innovating product functionalities, and revolutionizing methods of transmission and dissemination. The success of this strategy can be measured by the integration of color-printed cloth into contemporary products, consumer engagement, and the positive impact on local cultural industries. Through these approaches, color-printed cloth showcases its unique charm and relevance in contemporary society, bridging the gap between tradition and modernity while preserving its inherent cultural richness.

5. Conclusion

The patterns and colors within color-printed cloth show distinct regional characteristics. By employing symbolic design methods, these patterns can be reimagined and infused with new colors and motifs, fostering the development of innovative cultural products such as candy bags, cell phone cases, clothing and jewelry [17]. Tinted prints, used in crafting wraps, have become popular among young women, signifying a wish for blessings. As lifestyles and aesthetic preferences evolve, the significance of marriage integrates more Western cultural elements, demanding products that cater to modern needs beyond mere formality. To restore its relevance as household items, color-printed cloth can expand their functions to include sofa covers, curtains, wall decorations, bed sheets, and pillowcases.

To ensure the widespread dissemination of color-printed cloth products, both offline and online distribution channels have been proposed. However, the effectiveness and reach of these strategies may vary, and future research could provide a more nuanced understanding of the impact of different distribution channels on market penetration and consumer engagement [18].

In the context of preserving intangible cultural heritage with strong local roots, this paper aims to study the evolution of Linyi's color printing cognition and address issues related to craft techniques, artistic elements, and transmission routes. It proposes strategies focused on enhancing design innovation, symbolizing artistic features, innovating product functionalities, altering transmission methods, and fostering cultural product development through brand imaging. These strategies aim to facilitate Linyi's innovative transformation and sustainable development of color printing art while fostering the prosperity of local cultural industries. Ultimately, these efforts seek to ensure the continuation and appreciation of this rich cultural heritage.

Moving forward, future research directions will address the need for a more extensive cross-regional analysis to capture diverse perspectives on color printing. In addition, this study only focuses on design innovation, artistic features, and product functionalities so the further studies can expand t explore into

consumer preferences and market dynamics. Further research could delve into the socio-economic impact of these strategies while taking consideration into the factors such as market penetration, consumer acceptance, and economic sustainability.

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