

# Research on design transformation and innovative inheritance pathways of Henan intangible cultural heritage wheat straw painting

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**Abstract.** Against the backdrop of the transition from traditional craftsmanship to contemporary design, Henan wheat straw painting employs natural plant fibers as its primary medium, relying on the arrangement of linear materials and the expression of inherent luster. However, it currently faces challenges such as structural rigidity and insufficient design transformation. Grounded in design methodology, this study begins with an analysis of material language, systematically examines structural characteristics and formal logic, and constructs a pathway for design transformation. It further integrates analyses of application expansion, product structuring, and brand consolidation. The findings indicate that reinforcing material properties and reconfiguring formal structures can effectively broaden its application scope and enhance its adaptability to contemporary contexts. The study argues that this pathway can provide a valuable reference for the design transformation of traditional plant fiber crafts.

**Keywords:** wheat straw painting, intangible cultural heritage, material language, design transformation, inheritance and innovation

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## 1. Introduction

Henan wheat straw painting is a traditional Chinese folk craft that uses wheat stalks as its primary material, forming pictorial compositions through processes such as splitting, shaving, pressing, assembling, and adhering. It exhibits distinctive material characteristics and strong regional cultural attributes. As a form of natural plant fiber craft, it differs from other categories of painting in that its artistic expression relies on the layered luster and textural order produced by the arrangement of linear structures, thereby presenting a unique decorative quality and material aesthetic.

The sustainable development of traditional crafts depends not only on the preservation of techniques themselves, but also on their capacity to evolve in step with the times and integrate into modern life structures and market systems [1]. In recent years, with shifts in cultural consumption patterns and the growing dissemination of design innovation concepts, the modern transformation of traditional crafts has become a focal topic in design studies. Within the broader context of intangible cultural heritage protection, wheat straw painting has received institutional recognition; nevertheless, amid changing social structures and market

environments, it continues to face a series of challenges, including the rigidification of product forms, weak design transformation, and lagging modes of dissemination.

From the perspective of design methodology, this paper focuses on material language analysis, product system construction, and communication strategies. Centering on the material characteristics and practical challenges of Henan wheat straw painting, it systematically examines its current state of inheritance and proposes feasible pathways for design transformation. The study aims to provide both theoretical and practical references for the contemporary transformation of traditional plant fiber crafts and holds practical significance for advancing the modernization of such craft forms.

## **2. A review of research on Henan intangible cultural heritage wheat straw painting from a design perspective**

Research on Intangible Cultural Heritage (ICH) in China began relatively early. Initial studies primarily focused on conceptual definition, principles of preservation, and institutional framework construction. ICH was regarded as an important carrier of cultural memory and national identity, with its core objective centered on preservation and continuity. During this stage, traditional crafts were largely treated as cultural specimens requiring intact conservation. Consequently, research emphasis was placed on documenting craft processes, compiling oral histories of inheritors, and interpreting local cultural values.

With the continuous advancement of ICH protection practices, scholars have gradually recognized that mere preservation and exhibition are insufficient to ensure the long-term survival of traditional crafts in contemporary society. As a result, the concept of "living heritage transmission" has been repeatedly emphasized. It is widely acknowledged that if ICH remains detached from real-life contexts for extended periods, it risks becoming overly symbolic and marginalized. Therefore, it is essential to explore ways of reconnecting traditional crafts with modern lifestyles while maintaining respect for their original forms [2]. This shift has laid the theoretical foundation for subsequent design interventions in ICH research.

Henan wheat straw painting, a traditional plant fiber craft that uses wheat straw as its creative medium, has long been categorized within the domains of folk art and arts and crafts. Early academic discussions primarily focused on its historical origins, technical processes, and thematic categories, highlighting its folkloric value and decorative characteristics as a by-product of agrarian civilization. It was typically classified as "folk arts and crafts" or "local traditional handicrafts". In terms of specific craft studies, some scholars began to examine wheat straw painting as a research subject, addressing issues related to its inheritance and development in contemporary society. For instance, Ying Li analyzed Puyang wheat straw painting from perspectives such as cultural symbolism, aesthetic expression, and its role in stimulating the local economy, while also identifying challenges including a shortage of skilled inheritors and market contraction [3]. Research at this stage primarily involved descriptive accounts of craftsmanship and interpretations of cultural value. Although it touched upon material composition and formal generation logic, it did not yet establish a systematic analytical framework grounded in design methodology.

With the establishment of a formalized ICH protection system, wheat straw painting has been incorporated into an institutional preservation framework, and related studies have gradually shifted toward discussions of "protection, inheritance, and development" in terms of policies and implementation pathways. Scholars have begun to address issues such as brand building, industrial transformation, and market mechanisms, providing practical references for the commercialization of wheat straw painting [4]. However, there remains a notable lack of research on material reconfiguration at the design level and innovation in product systems.

At present, both domestic and international research on straw-based crafts can generally be divided into three stages: documentation of folk culture, studies on ICH protection strategies, and research on design-driven innovation pathways. The current state of research on Henan wheat straw painting exhibits two main characteristics: first, discussions at the levels of cultural value and industrial policy are relatively well-developed; second, there is still insufficient in-depth research from a design perspective, particularly in terms of analyzing material language and proposing product system reconstruction.

Based on existing literature, this study adopts a design-oriented perspective, situating wheat straw painting within an integrated analytical framework that encompasses material studies, product system design, and brand strategy coordination. Through this approach, it seeks to establish a system for design transformation and innovative inheritance, thereby facilitating the transition of wheat straw painting from a traditional decorative craft to a resource for contemporary design.

### **3. Artistic characteristics and multidimensional value of Henan intangible cultural heritage wheat straw painting**

#### **3.1. Artistic characteristics: a material-generated visual structure**

The most distinctive artistic feature of Henan wheat straw painting—and the core of its artistic language—does not lie in subject matter, but in the visual order generated by the material structure itself. Taking Puyang wheat straw painting in Henan as an example, the material treatment emphasizes the preservation of the straw's natural luster. Through multiple processes such as smoking, steaming, bleaching, scraping, pressing, ironing, cutting, carving, weaving, and drawing, a unique visual effect is achieved [5]. Unlike painting forms that rely on the accumulation of pigments, the visual presentation of wheat straw painting is realized through the luster order created by the longitudinal arrangement of plant fibers. After being split and flattened, the straw retains the linear texture of its natural fibers. When arranged and collaged in different directions, variations in light reflection angles produce layered visual effects, generating a sense of flow and rhythm.

From a compositional perspective, wheat straw painting exhibits a strong characteristic of "linear generation". The strip-like material functions both as a formal element and as a unit for modulating light and shadow. By controlling the direction, density, and overlapping relationships of the material, artisans construct contours and a sense of volume. This generative logic enables a relief-like spatial layering within a two-dimensional plane. However, this sense of three-dimensionality does not arise from physical thickness, but from the interplay of light and shadow produced by material arrangement [6]. Consequently, its artistic language is closer to structural composition than to pictorial representation.

In terms of subject matter, traditional wheat straw paintings predominantly depict figurative themes such as flowers and birds, landscapes, human figures, and auspicious motifs [7], with an emphasis on compositional completeness and decorative qualities. Over time, artisans have developed relatively stable modeling conventions and compositional patterns, reflecting the aesthetic preferences and symbolic expressions of folk art. Nevertheless, even within figurative representation, the visual effect remains highly dependent on the inherent structural properties of the material itself—one of the most distinguishing features separating wheat straw painting from other craft forms.

Its color system likewise derives from the material itself. The tonal range primarily comes from the natural hues of wheat straw and the gradations produced during the heating process, forming a warm palette dominated by golden yellow and brown (see Figure 1). Influenced by the Central Plains cultural preference for

black, black velvet is often used as a background fabric [8]. This color system not only reinforces the authenticity of the material but also reflects the agrarian cultural ethos of respecting nature.



**Figure 1.** Wheat straw painting work

Source: work by artist Zhiwei Fang; photographed by the author

### 3.2. Multidimensional value: cultural, social, and economic dimensions

The multiple values of wheat straw painting arise from both the uniqueness of its material and its cultural symbolism. Originating within an agricultural production context, it is a form of handicraft embedded in the civilization of agrarian society. Wheat, as a staple crop in the Central Plains, plays a central role in rural life, with its cultivation and harvest structuring the rhythm of village society. After fulfilling its primary function in food production, wheat straw is reprocessed into artistic objects, embodying traditional values of resource conservation and recycling—an ecological wisdom commonly found in folk crafts of agrarian civilizations. The transformation of everyday agricultural materials into aesthetic objects represents, in itself, a form of materialized cultural expression.

From the perspective of cultural symbolism, the golden color of wheat straw is often associated with harvest, abundance, and auspiciousness. Traditional themes frequently center on auspicious imagery such as flowers and birds (see Figure 2) and festive scenes, endowing the works with symbolic meanings in celebratory and ritual contexts. Following its inclusion in the national intangible cultural heritage list, its cultural significance has evolved from a local folk practice into a public cultural symbol, serving as a visual carrier of the regional identity of the Central Plains.

From a social perspective, the transmission of wheat straw painting relies primarily on master-apprentice relationships and family-based inheritance, emphasizing embodied knowledge and long-term practice. This mode of transmission facilitates intergenerational exchange of skills, values, and emotional connections. Its relatively low requirements for production space also make it suitable for household-based production. Within the broader context of rural revitalization, effective organizational structures and market integration mechanisms could enable it to expand employment opportunities and strengthen local cultural identity.

From an economic perspective, the natural material attributes and handcrafted quality of wheat straw painting align with contemporary consumer preferences for sustainability and ecological consciousness. This trend creates favorable conditions for the marketization of traditional natural-material crafts. The distinctiveness of its material serves as a key source of market differentiation, providing a resource foundation for cultural product development. Through the establishment of tiered product systems and brand-building strategies, it is possible to extend its application from high-end artworks to everyday cultural and creative products, thereby transforming cultural resources into industrial assets.

## 4. Current state of inheritance and structural dilemmas of Henan wheat straw painting

### 4.1. Talent discontinuity risk under fragmented transmission

In terms of transmission, wheat straw painting in Henan continues to rely predominantly on master–apprentice instruction and family-based inheritance. While this mode demonstrated strong stability within traditional social structures, its limitations have become increasingly evident in the context of modern societal mobility. On the one hand, younger generations now have a wider range of career options, whereas wheat straw painting involves complex techniques, long learning cycles, and unstable income, leading to a decline in new learners. On the other hand, teaching largely depends on experiential transmission, lacking a systematic training mechanism [9].



**Figure 2.** The complex craftsmanship of Henan wheat straw painting

Source: work by intangible cultural heritage inheritor Yanyong Huang; photographed by "Yujian Intangible Cultural Heritage"

Within the framework of intangible cultural heritage protection, the system of representative inheritors provides institutional support for the continuation of craftsmanship. However, a transmission model centered on individuals also entails inherent risks. Once key inheritors withdraw from practice due to age or other factors, the lineage of skills may face discontinuity. This indicates that the current transmission structure of wheat straw painting remains at a "point-based continuation" stage, without yet forming a stable, networked system of inheritance.

### 4.2. Rigid product structure and constrained market space

From a market perspective, the product forms of wheat straw painting are relatively homogeneous, consisting primarily of medium- to large-scale decorative artworks or craft gifts. Their consumption scenarios are largely confined to cultural exhibitions, tourism souvenir markets, and festive events, with limited integration into everyday life. This rigidity in product structure restricts its ability to penetrate higher-value consumer markets.

At the same time, its market positioning tends toward "traditional craft collectibles" or "regional specialty souvenirs". While this strengthens its symbolic cultural value, it weakens its functional relevance in daily life. Consumer purchasing behavior is thus driven more by cultural identification or gift-giving needs rather than practical usage, resulting in highly volatile demand and a lack of sustained consumption momentum.

In addition, there is an imbalance in price structuring. High-end works are costly due to their labor-intensive processes, while low- and mid-range products often lack competitiveness in both visual quality and craftsmanship due to simplification. The absence of a well-defined pricing gradient further constrains the expansion of the market scale.

### 4.3. Imbalance in design intervention and weakening of material ontology

In recent years, design has been regarded as a key pathway for innovation in traditional crafts. However, in practice, design intervention often falls into the pitfalls of excessive symbolization and over-decoration. Such approaches, detached from the intrinsic characteristics of the craft, result not in innovation but in the erosion of its original language.

Although these strategies may attract short-term market attention, they tend to weaken the material distinctiveness of wheat straw painting. When wheat straw is replaced by other homogeneous materials, its characteristic linear luster structure disappears, and with it, the fundamental visual identity of the work. In essence, such transformations dissolve rather than develop the craft language.

Conversely, there is also a tendency to overemphasize authenticity while resisting design intervention altogether. This confines the craft to traditional themes and established formal conventions, limiting its ability to explore new modes of expression. As a result, its developmental potential is restricted by a form of "conservative preservation". Overall, the lack of an effective collaborative mechanism between design and craftsmanship constitutes a key structural dilemma at the current stage of development.

## 5. Constructing an innovation pathway system for Henan wheat straw painting

Based on the preceding analysis of the artistic characteristics, multidimensional value, and structural dilemmas of Henan wheat straw painting, it is evident that its challenges do not arise from a decline in skill, but from an imbalance between its value structure and the realities of its operation. Therefore, creating a pathway for innovative inheritance should not focus solely on formal updates. Instead, it must address four key dimensions—material ontology, design transformation, integration into daily life, and systemic support—forming a coherent, logically structured mechanism.

### 5.1. Defining the boundaries of innovation: upholding material ontology

The formation of any innovation pathway must begin with a clear understanding of the craft's intrinsic characteristics. For Henan wheat straw painting, its essence lies not in subject matter, but in the linear structures and luster order generated by strip-like plant fibers. If the material is homogenized or replaced by other media, its unique visual generative mechanism disappears. Hence, innovation must first adhere to the protection of material ontology.

Protecting material ontology does not imply resisting change; rather, it entails transformation within clearly defined boundaries (see Figure 3). These boundaries include: preserving the integrity of the straw's strip structure, maintaining the natural luster generation mechanism, and retaining the visual logic in which the arrangement direction produces light and shadow layers. Within this framework, adjustments can be made to subject matter, scale, composition, and combinatory approaches, provided the core structural logic remains intact.

Defining these boundaries prevents two extremes: excessive commercialization leading to superficial symbolic representations, and excessive conservatism resulting in stagnant expression. Upholding material ontology lays the foundation for subsequent design translation and marks the starting point of the innovation pathway.



**Figure 3.** Production site of Henan wheat straw painting with material at the core

Source: studio of intangible cultural heritage inheritor Yuanzheng Nie; photographed by Wei Wu

## 5.2. Dual-pathway innovation

### 5.2.1. *Renewing the classical: internal innovation based on craft ontology*

Once the material boundaries are established, the first innovation pathway focuses on internal language—updating expression within the existing craft logic. Renewing the classical does not negate traditional subject matter; rather, it respects established visual conventions while employing compositional reorganization and thematic expansion to update the craft language.

On one hand, modern compositional awareness can be incorporated into traditional figurative subjects: simplifying backgrounds, emphasizing structural rhythm, and highlighting material directionality, thereby enhancing contemporary aesthetic appeal. On the other hand, abstracted expression can be explored, letting the linear arrangement of fibers itself become the visual theme (see Figure 4), rather than serving representational imagery. By emphasizing the order of material arrangement, wheat straw painting evolves from representational decorative art into a form of structural material art.



**Figure 4.** Wheat straw sachet emphasizing linear fiber arrangement

Source: Miyi

Additionally, variations in scale constitute another aspect of internal innovation. Traditional works are mostly medium- to large-sized hanging pieces; modular assembly or smaller-scale formats can enrich formal possibilities. In-depth updating of the internal language provides the necessary precondition for external transformation.

### 5.2.2. *Cross-sector integration: embedding into everyday consumer life*

If innovation remains confined to the formal aspects of artworks without entering everyday life, the problem of sustainable inheritance cannot be fundamentally resolved. The third pathway, therefore, is life-embedded transformation—integrating wheat straw painting into contemporary daily life.



**Figure 5.** Wheat straw jewelry box from the Chuanghui period

Source: Shihuo to Gather

Life embedding is not simply a matter of reducing size or superficially attaching the craft to products. Rather, it involves designing structural integration within specific usage contexts. For example, wheat straw collage structures can be incorporated into home décor, cultural and creative stationery, or modular spatial design (see Figure 5), allowing the material to function as part of the structural system rather than merely serving as decorative overlay. Throughout this process, it is essential to uphold the integrity of the material's structure, avoiding symbolic replication.

Series-based product strategies can also establish price gradations, allowing high-end art pieces and everyday products to complement each other. High-end products maintain cultural depth and artistic value, while mid- and low-end products expand consumer reach and social visibility. A rationally tiered system facilitates the development of a dynamic, sustainable market structure.

The core of life embedding lies in transforming wheat straw painting from a visual cultural object into an integral element of daily life, thereby renewing its social presence.

### 5.2.3. *Market-oriented pathway: building brand identity*

The protection and inheritance of traditional crafts require a shift from a "passive preservation" paradigm to an "active utilization" model. Through creative transformation and innovative development, the cultural, utilitarian, and aesthetic values of traditional crafts can be integrated with modern consumption, market

demands, industry structures, and technology, thereby fostering industrial brand development [10]. For traditional folk crafts entering the modern economic system, breaking free from individualized production and achieving systematic brand operations is an inevitable trend in craft industrial innovation. Brand construction should rely on the authenticity of materials, natural luster, and handcrafted texture to define core value positioning, establishing a stable cultural narrative framework and a unified visual identity system, thereby enhancing overall brand recognition.

The product system should adopt a clear hierarchical structure. High-end artworks emphasize craftsmanship and collectible value; mid-tier custom products target cultural consumers; and everyday products cater to the mass market. All tiers share the same material language and craft characteristics, forming a complete pricing gradient and market framework.

Industrial organization also requires optimization. Regional cooperation and resource sharing can improve production stability and quality control while preserving the handmade qualities, thereby enhancing market competitiveness. Sales channels should be diversified across cultural spaces, design brands, and creative platforms to expand consumer touchpoints and improve market sustainability.

The key to a brand- and market-oriented mechanism is the establishment of a stable product structure and a coherent value-expression system, providing the foundation for traditional crafts to operate sustainably within the modern market environment.

## 6. Conclusion

The core value of Henan wheat straw painting lies in its material language, composed of strip-like plant fibers, and the luster and structural order generated therefrom. Its development challenges do not stem from a decline in craftsmanship, but from a misalignment between traditional value forms and contemporary social operational mechanisms. This study demonstrates that, by safeguarding the material ontology as a premise, combining updates to the internal craft language with life-embedded transformation, and supporting these efforts with a tiered product system and brand-oriented operations, it is possible to effectively reconstruct both design expression and market pathways, facilitating the transition from decorative craft to modern design resource.

Based on these findings, the contemporary transformation of traditional plant-fiber crafts should be grounded in a "material–form–product–system" collaborative framework. This approach preserves the essential characteristics of the craft while introducing design methodologies and industrial mechanisms, thereby unifying cultural, functional, and economic values. The study not only provides a systematic strategy for the innovative development of Henan wheat straw painting, but also offers a reference pathway for other intangible cultural heritage crafts in integrating design intervention and cross-sectoral fusion. It holds practical significance for promoting the sustainable development of traditional crafts.

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