

# The Contemporaneous Inheritance Dilemma of Beijing Palace Carpet Weaving Skills and the Exploration of Digital Living Protection Path

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## ABSTRACT

Within the overarching narrative of intangible cultural heritage (ICH) preservation, traditional crafts deeply embedded in imperial court life and ceremonial systems now confront increasingly complex challenges in contemporary inheritance. The Beijing Palace Carpet Weaving Technique stands as a quintessential example of such challenges. This multifaceted art form integrates painting concepts, pattern design, natural dyeing, and intricate hand-weaving techniques. For centuries, it served as the spatial order and aesthetic framework of the Forbidden City, embodying the court's majesty and opulence. Yet with modernization and industrialization, this traditional craft—often hailed as "soft gold on earth"—now faces multiple crises: broken inheritance chains, diminished practical relevance, and an imbalanced ecological system for its preservation. This study examines the weaving techniques of Beijing Palace Carpets as a research subject, analyzing their challenges within contemporary social structures and cultural contexts through the lens of "living heritage preservation." Building on this foundation, the article proposes a comprehensive "digital living heritage protection" framework. It emphasizes that digital technology should not merely serve as static documentation or visual aids but must be integrated into practical approaches. By establishing digital archives, immersive virtual experiences, collaborative digital design, and online cultural community engagement, the study explores sustainable preservation strategies for Beijing Palace Carpets and similar intangible cultural heritage projects. The research seeks to balance the preservation of cultural DNA with contemporary innovation, charting a path for the enduring legacy of these traditions.

## KEYWORDS

Beijing palace blanket; Intangible cultural heritage; Living inheritance; Digital protection; Cultural innovation

## 1 Introduction

### 1.1 Research Background and Issues

China's intangible cultural heritage protection efforts have achieved notable results, with many techniques on the verge of extinction being preserved through systematic rescue. However, as the practice continues, some intangible cultural heritage projects, though meticulously preserved in texts, images, and exhibitions, are gradually becoming detached from the social and environmental contexts that originally sustained them. They resemble cultural examples transplanted into "greenhouses," maintaining only superficial survival in controlled environments. As Liu Kuili emphasized, the "living inheritance" of intangible cultural heritage is not merely about archiving the techniques themselves, but lies in their genuine and enduring connection to people's daily lives—being applied in life and perpetuated through application. Once separated from specific life contexts, even with highly comprehensive protection mechanisms, such efforts risk becoming formalistic.

The craftsmanship of Beijing Palace Carpets epitomizes this structural paradox. As a national intangible cultural heritage project recognized among the "Eight Unique Arts of Yanjing," it enjoys significant institutional recognition. Its iconic pieces have even graced international stages as state gifts, earning fleeting yet dazzling cultural acclaim. Yet behind these symbolic honors lies a grim reality: the master artisans are aging, with only a handful of young practitioners remaining. Market demand remains severely limited, and consumption scenarios are highly restricted. The once complete production chain now shows clear signs of disintegration. This "visually dazzling yet structurally fragile" predicament poses a real challenge to the continuation of Palace Carpet craftsmanship.

### 1.2 Research Status at Home and Abroad

A systematic review of existing research reveals that both domestic and international academia have established distinct research trajectories in intangible cultural heritage (ICH) conservation. Early foreign studies focused on the "living" continuity of traditional crafts, introducing key concepts like "ecological museums" and "cultural ecological protection zones." These frameworks emphasize that ICH is not isolated technical entities but is deeply intertwined with the social structures, lifestyles, and cultural contexts that sustain them. As part of digital preservation efforts, such practices have reached maturity—exemplified by Europeana, a European digital heritage platform that integrates and

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opens up fragmented cultural resources, enabling cross-regional dissemination and public access to cultural heritage.

Domestic research has increasingly focused on the dynamic inheritance and productive protection of intangible cultural heritage (ICH), gradually emerging as a long-standing academic focus. Li Jun, in related studies, asserts that the essence of productive protection lies not merely in expanding production scale, but in fostering a positive interaction between skill transmission and real market demands. Some scholars have also warned against potential skill distortion and value distortion caused by excessive commercialization. However, regarding the digital preservation of ICH, most existing research remains confined to technical application levels. As Zhang Yi noted, current digital practices still primarily revolve around "documentation" and "exhibition" services, failing to fully unleash the creative potential of digital technologies.

In the study of intangible cultural heritage (ICH) related to carpets, existing research predominantly focuses on tracing historical contexts, analyzing craft processes and artistic features, or exploring single preservation approaches. While Xue Qing's analysis of the "Beijing-style" decorative patterns in Beijing Palace carpets and Kang Yusheng's summary on the inheritance and innovation practices of palace carpet techniques provide essential foundations for understanding this craft, they fail to address the deeper integration of digital tools with the comprehensive restructuring of the inheritance ecosystem. This research gap serves as a critical starting point for the discussion in this paper.

## 2 The Historical Context and Core Value of Beijing Palace Carpet Weaving Technology

### 2.1 Historical Origins and Courtly Connections

The history of Beijing palace carpets traces back to the Yuan Dynasty. As the Mongol Empire expanded, carpet weaving techniques originating from the Western Regions were introduced to the Central Plains. Through prolonged practice, these techniques blended with the region's established silk weaving techniques and painting traditions, ultimately shaping the foundational form of early palace carpets. The imperial court established the "Sishijian" (Imperial Carpet Supervisor) to oversee their production. The designs predominantly featured symbolic motifs like dragons, phoenixes, and coiled lotus patterns, marking a significant improvement in craftsmanship. However, both in terms of production scale and artistic expression, the craft remained in a phase of gradual development.

The Qianlong era of the Qing Dynasty witnessed a true golden age in imperial craftsmanship. With the establishment of the 'Carpentry Workshop' under the Imperial Workshop, skilled artisans from across the empire were systematically organized. The weaving process was thoroughly integrated with the court's aesthetic standards and meticulous production protocols. These palace carpets were designed exclusively for imperial use, with their patterns, dimensions, and color schemes strictly governed by imperial regulations. Thus, they transcended mere practical objects to become essential components of ceremonial protocols and the visual framework of imperial authority.

From the late Qing Dynasty to the Republican era, with the disintegration of the imperial court system, palace carpets gradually moved beyond the Forbidden City and shifted to civilian production and circulation. Famous workshops such as "Yongcheng" and "Tiancheng" emerged successively, winning gold medals at the 1900 Paris World Expo and the 1904 St. Louis World Expo, marking the initial transformation of palace carpets from imperial tributes to national craftsmanship. After the establishment of the new China, this craft continued to develop under the new institutional environment. In 2009, it was included in the third batch of the National Intangible Cultural Heritage List, becoming one of the representative items among the "Eight Delicacies of Yanjing."

### 2.2 Analysis of Core Skills

The essence of palace carpets lies in their intricate and meticulous handcrafted craftsmanship. The production process involves over twenty interdependent steps, including wool selection, dyeing, weaving, and finishing. The signature "eight-character knot" (a special knotting technique) creates a dense structure that ensures exceptional durability. Even after centuries of wear, the knots remain tightly bound. Industry statistics reveal that palace carpets can contain up to 14,400 knots per square meter, far exceeding the density of ordinary hand-woven carpets.

In terms of pattern design, Beijing palace carpets have developed a distinctive "Jing-style" motif system. Their compositions emphasize neat symmetry, creating a visual order akin to "metrical poetry." As Xue Qing noted in related research, the commonly referred "Jing-style motifs" center on the symbolic meaning of imperial authority, with symmetry and balance as fundamental principles. They prioritize an overall aesthetic of opulence and solemnity. Typical patterns feature the central dragon motif as the focal point, supported by cloud patterns at the four corners and floral borders. The layout remains orderly yet diverse, while the use of rich, stable colors creates a distinct sense of ceremony and dignified presence.

### 2.3 The Process of Identity Transformation

The transformation of Beijing palace carpets underwent a gradual and complex process that couldn't be accomplished overnight. As the imperial court system disintegrated, the carpet weavers who had long served the court gradually transitioned to civilian life, beginning to produce palace carpets for the social market. This shift marked the initial stage of their identity transformation. While maintaining the core craftsmanship standards of imperial production, these carpets gradually incorporated folk aesthetic elements in their patterns and themes. Their usage expanded from the strict confines of imperial decorations to the residential spaces of wealthy merchants and gentry, reflecting the evolving tastes of the populace.

Since the establishment of the new China, the state has reorganized the scattered folk craftsmen by setting up state-owned carpet factories, gradually building a relatively stable centralized production framework. During this period, palace carpets, as important export products for foreign exchange, saw their production processes and quality standards further standardized and unified. With the implementation of major national public buildings and reception venues, palace carpets began to be widely used in the decoration of government spaces and high-end hotels, achieving a substantive transition from "court tributes" to "national craftsmanship." Entering the 21st century, during a series of major national events such as the 2008 Beijing Olympics, the 2016 Hangzhou G20 Summit, and the 2022 Beijing Winter Olympics, Beijing palace carpets repeatedly appeared as cultural symbols. Their symbolic significance, continuously reinforced, gradually evolved into a typical national cultural calling card.

## 3 Current Status and Challenges of Contemporary Inheritance

### 3.1 Status of the Inheritor

Taking Master Kang Yusheng's studio as an example, this space located in an old courtyard in Beijing's Dongcheng District covers approximately 80 square meters. As one of the most vital heritage carriers in the industry, the studio houses three vintage looms with only five artisans engaged in weaving. Four of them are already over 60 years old. These artisans serve as living embodiments of key techniques, yet their ability to sustain creative work and systematic teaching has noticeably declined due to physical and mental limitations. The survival and retention of young practitioners have become increasingly pressing. Currently, most young apprentices enter the field due to family background or personal emotional factors. However, when confronted with monotonous processes, low wages, and unclear career paths, they often struggle to maintain their commitment, resulting in a persistently high attrition rate. This phenomenon directly highlights the severe crisis of disconnection in the inheritance chain of Beijing Palace Carpets.

### 3.2 Market Demand Dilemma

In traditional societies, palace carpets primarily served to insulate vast palace spaces and provide ceremonial decor. However, this function has largely disappeared in modern contexts. Currently, their market demand is concentrated in three niche sectors: 1) decorative installations in high-end hotels, museums, and other public or semi-public venues; 2) collections by affluent collectors with cultural discernment; and 3) bespoke gifts for official or diplomatic occasions. The highly concentrated market structure has significantly reduced the actual demand for palace carpets. Consumers predominantly favor antique-inspired designs, which further limits the creative potential for innovative craftsmanship in their visual presentation.

The more striking contradiction lies in the mismatch between the high production costs of palace carpets and the minimalist aesthetics and rational consumption trends in contemporary home environments. While some inheritors and related enterprises have attempted to develop smaller derivative products like coaster pads and table flags to expand their daily applications, the limited market response stems from designs that merely replicate traditional symbols and relatively narrow sales channels.

### 3.3 Effectiveness of Protection Policies

Since being inscribed on the National Intangible Cultural Heritage List, Beijing Palace Carpets have received consistent policy support. The Beijing Municipal Bureau of Culture and Tourism has established special subsidies to encourage inheritors to conduct public welfare teaching and skill demonstrations. Dongcheng District has integrated Palace Carpet weaving experiences into its Central Axis cultural tourism routes, organizing over 30 related public activities in 2024 alone. The government has also coordinated inheritors to participate in restoration projects for the Forbidden City's Palace Carpets and major public venue decorations, providing essential financial and technical support. As stated in the corresponding report by the Beijing Municipal Bureau of Culture and Tourism, these policies "not only enhance public

awareness of intangible cultural heritage projects but also provide basic livelihood security for inheritors."

While these policies have partially served as a safety net, their limitations are equally evident. The low subsidy amounts and limited coverage fail to support systematic talent development or sustained R&D initiatives. Most public welfare programs struggle to form stable learning communities or generate meaningful consumer demand. More critically, current policies primarily focus on "list recognition" and "individual assistance," without addressing the structural collapse of the palace carpet heritage. This fundamental approach cannot fundamentally resolve the challenges hindering its long-term survival and development.

## 4 Path Exploration

Amid the challenges confronting Beijing Palace Carpet weaving techniques, scholars in academic research often reach consensus on certain viewpoints while occasionally diverging. Digitalization should transcend mere documentation and exhibition, becoming a pivotal force to reshape the ecological framework of heritage preservation. As Zhang Yi emphasized, the true value of digital technology lies in transcending temporal and spatial constraints to reconstruct cultural continuity. Building on this foundation, this paper proposes a four-tiered digital preservation framework—Basic Layer, Experience Layer, Innovation Layer, and Community Layer—aiming to support the inheritance and renewal of these techniques through multidimensional approaches.

### 4.1 Basic Layer: Digital Archives Construction

The core mission of the foundational layer is to preserve the critical elements of the palace tapestry weaving technique through rescue efforts. Unlike traditional collections of texts or images, this archive employs advanced digital methods such as high-precision scanning, 3D modeling, and 8K imaging to conduct comprehensive and interactive documentation of the existing veteran artisans.

In practical craftsmanship, the focus should be on capturing the nuances of technical execution—such as the "eight-character knot" weaving technique, precise control of cutting force, accurate dyeing ratios, and the artisans' decision-making logic and adaptability. This includes adjustments based on material properties, aesthetic evaluations in pattern design, and the accumulated wisdom of veteran artisans. These elements are preserved by documenting their artistic journeys, stories of skill transmission, and insights into the cultural essence of their craft.

To build a dynamic knowledge base that supports data retrieval, content analysis, and immersive learning not only preserves the original technical genes for future generations but also provides a solid foundation for heritage transmission, research, and innovation.

### 4.2 Experience Layer: Digital Experience Development

The core mission of the experience layer is to lower the barrier for public engagement with palace carpets, fostering emotional resonance. By leveraging digital technologies like VR, AR, and MR, it develops interactive immersive experiences that transform these artifacts from museum exhibits into dynamic cultural paradigms. This approach plants the seeds of both technical understanding and emotional connection in the audience's mind.

The preparatory program features two immersive experiences: 1) VR "Craftsman's Day" – a hands-on virtual journey through the entire process of palace carpets from design to completion. Participants experience key techniques like the "eight-character knot" weaving from a first-person perspective, gaining a visceral understanding of the intricate craftsmanship. 2) AR "Central Axis Restoration" – visitors can scan designated areas at landmarks like the Forbidden City and Temple of Heaven to see palace carpets digitally unfold in historical spaces. This allows them to trace the carpets' original connections with imperial architecture and ceremonial settings while exploring their cultural significance. The program also creates museum digital zones that blend physical exhibits with interactive virtual experiences, enhancing visitors' immersive engagement.

### 4.3 Innovation Layer: Design Co-Creation Platform

The core mission of the Innovation Layer is to facilitate the contemporary reinterpretation of palace carpet craftsmanship, integrating traditional aesthetics into modern life. By establishing an online digital design co-creation platform, it transforms the cultural essence of palace carpets into modular, open-source formats. This approach breaks down barriers to heritage preservation and inspires global creators to innovate. As Chen Shaofeng states in "The Construction and Operation of Cultural IPs\*", the key to modernizing traditional crafts lies in converting cultural elements into reusable "material libraries" that seamlessly integrate with contemporary design.

The platform enables digital decomposition of traditional palace carpet patterns, color systems, and craftsmanship parameters, creating modular design components. For instance, it breaks down motifs like "Kui Dragon" and "Entwined Lotus" into basic graphic elements, transforms traditional color systems into directly applicable color parameters, and mobilizes designers, artists, and the public to utilize these digital "cultural genes" for creating modern products—such as home decor, stylish accessories, or cultural and creative items. The platform also facilitates direct collaboration with manufacturers to produce small-batch batches of outstanding designs, forming a closed-loop cycle of "design-production-sales." This co-creation model preserves the cultural essence of palace carpets while endowing them with contemporary aesthetics and practical value, bringing palace carpet aesthetics back into daily life in a dynamic and fashionable manner, while also contributing to the preservation of core craftsmanship.

#### 4.4 Community Layer: Inheriting Community Cultivation

The core mission of the community initiative is to revitalize the legacy of palace tapestry traditions by transitioning from the conventional master-apprentice model to a collaborative community approach. Through digital archives, immersive experiences, and a co-design platform, it establishes a cross-regional online cultural community that brings together scholars, artisans, designers, collectors, and enthusiasts to foster meaningful exchanges.

Communities can host various activities, such as online masterclasses where inheritors demonstrate techniques and share their artistic journeys through live streams, breaking geographical barriers to expand cultural inheritance. Alternatively, they may organize design challenges like the "Palace Carpet Elements Modern Home Design Competition" to spark creativity and identify talented designers. These initiatives transform knowledge transmission and value recognition from a master-apprentice dynamic into a collaborative cultural practice network, establishing a sustainable living heritage system for palace carpets.

## 5 Conclusion and Prospects

### 5.1 Research Conclusions

Through field research and systematic analysis of Beijing Palace Carpet weaving techniques, this study identifies four key challenges: the craft's contemporary predicament stems from multiple factors including aging artisans with generational gaps, weak market demand, flawed talent development systems, and ineffective preservation policies. These issues fundamentally reflect a disconnect between traditional craftsmanship and modern societal needs. While conventional "list-based protection" and "production-based preservation" models struggle to address systemic problems or rebuild sustainable inheritance ecosystems, digital technology offers transformative solutions. By establishing an integrated framework combining "digital archives, immersive experiences, collaborative digital design, and online cultural communities," we can shift preservation from emergency rescue to systematic ecological reconstruction. This approach transforms Palace Carpets from endangered handicrafts into sustainable cultural innovation IPs that thrive through digital innovation.

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## References

- [1] Beijing Municipal Bureau of Culture and Tourism. Beijing Intangible Cultural Heritage Protection and Development Report (2024) [R]. Beijing: Beijing Municipal Bureau of Culture and Tourism, 2024.
- [2] Yuan Li. Revelation of China's Intangible Cultural Heritage Protection [M]. Beijing: China Federation of Literary and Art Circles Press, 2018.
- [3] Kang Yusheng. The inheritance and innovation of palace carpet-making techniques [J]. China Arts and Crafts, 2023(02):72-75.
- [4] Xue Qing. Artistic Characteristics and Cultural Connotations of the "Beijing Style" Patterns on Beijing Palace Carpets [J]. Intangible Cultural Heritage Research, 2022(04):45-50.
- [5] Li Jun. Productive Protection and Ecological Reconstruction of Intangible Cultural Heritage [J]. Ethnic Art Research, 2021(03):89-96.
- [6] Zhang Yi. Application and Reflection of Digital Technology in the Protection of Intangible Cultural Heritage [J]. Cultural Heritage, 2020(02): 145-152.
- [7] Wang W. Research on the Protection of Intangible Cultural Heritage [M]. Beijing: Educational Science Press, 2016.
- [8] Chen Shaofeng. The Construction and Operation of Cultural IP [M]. Beijing: Peking University Press, 2022.
- [9] Liu Kui-li. Living Inheritance of Intangible Cultural Heritage [J]. Folk Culture Forum, 2019(01):5-12.