

HERITAGE CONTINUITY AND CULTURAL VALUE OF YEXIE BAMBOO WEAVING IN SHANGHAI: A STUDY FROM THE PERSPECTIVE OF INTANGIBLE CULTURAL HERITAGE SUSTAINABILITY

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ABSTRACT

This study explores the historical development and cultural significance of Yexie bamboo weaving as an intangible cultural heritage from the perspective of sustainable heritage development. The research aims to analyze its craft characteristics and cultural value within the context of rapid urbanization and changing lifestyles in Shanghai. A qualitative research approach is adopted, including literature review, field observation, and semi-structured interviews with heritage inheritors and cultural administrators. The findings indicate that Yexie bamboo weaving embodies strong regional craft identity, material intelligence, and structural logic, yet its continuity is challenged by industrial substitution, weakened daily-life usage, and limited market integration. The study highlights that although existing preservation strategies focus on documentation and exhibition, they often lack pathways for functional reintegration into contemporary life. Therefore, a shift toward design-oriented transformation is necessary to enhance its cultural vitality and sustainability. This research provides a theoretical foundation for understanding how traditional bamboo weaving can be reinterpreted as a living heritage system within modern urban contexts.

Keywords: Intangible Cultural Heritage, Bamboo Weaving, Sustainable Development, Craft Transformation

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INTRODUCTION

With rapid urbanization and industrial transformation, many traditional handicrafts are experiencing a gradual decline in their functional role and cultural continuity. Among them, bamboo weaving in Yexie, Shanghai, represents a typical intangible cultural heritage practice deeply embedded in local daily life and material culture. However, changes in production systems, consumption patterns, and modern lifestyles have weakened its practical relevance and transmission context. While existing studies have focused on documentation and preservation, fewer have addressed how traditional bamboo weaving can be reconnected to contemporary life through design-driven approaches. Therefore, this study examines Yexie bamboo weaving from the perspective of sustainable heritage development, aiming to explore its cultural characteristics and transmission challenges within modern urban contexts.

Research Objectives

This study aims to investigate Yexie bamboo weaving as an intangible cultural heritage from the perspective of sustainable development. The specific objectives are:

- 1) To examine the historical development, craft characteristics, and cultural significance of Yexie bamboo weaving.
- 2) To analyze the key challenges affecting its transmission and sustainability in contemporary society.
- 3) To explore how traditional bamboo weaving can be reinterpreted within modern cultural contexts to enhance its relevance as a living heritage.

LITERATURE REVIEWS

Theoretical Framework

This study is grounded in the integration of Intangible Cultural Heritage (ICH) Theory and Sustainable Design Theory, while incorporating the perspective of Design Transformation to explain how traditional bamboo weaving can be regenerated within contemporary society. This theoretical framework argues that the sustainable development of traditional crafts depends not only on cultural preservation but also on their successful reintegration into modern lifestyles through innovative product design.

The concept of Intangible Cultural Heritage originates from the Convention for the Safeguarding of the Intangible Cultural Heritage (UNESCO, 2003), which defines heritage as a living cultural practice rather than a static cultural object. UNESCO (2016) further emphasizes that the vitality of ICH relies on the continuous transmission and recreation of knowledge, craftsmanship, and cultural practices within communities. Kirshenblatt-Gimblett (2004) argues that heritage is a dynamic cultural process constantly reconstructed through social practice, while Smith (2006) suggests that heritage value is created through social interactions rather than residing solely in physical artefacts. From this perspective, Yexie bamboo weaving should be understood not merely as a traditional handicraft but as a living cultural resource that embodies local identity, collective memory, and cultural knowledge.

Sustainable Design Theory provides the methodological foundation for transforming traditional craftsmanship into contemporary design practice. Papanek (1971) proposed that design should assume social and environmental responsibility by making efficient use of natural resources. Throsby (2001) further incorporated cultural capital into the sustainability framework, arguing that cultural resources are essential components of sustainable development alongside environmental and economic resources. Building upon this, Manzini (2015) emphasized that design should reconstruct relationships between people, products, and their environment, enabling traditional culture to generate new social value within contemporary contexts.

Based on these theoretical perspectives, this study develops an analytical framework consisting of three interconnected dimensions: Cultural Foundation, Craft System, and Design

Transformation. The cultural dimension examines the historical significance and intangible heritage value of Yexie bamboo weaving. The craft dimension focuses on material characteristics, weaving structures, and craftsmanship logic. The design transformation dimension investigates how traditional craft knowledge can be translated into contemporary product systems that meet modern lifestyles. This framework provides the theoretical foundation for analysing the characteristics of Yexie bamboo weaving, understanding its transformation of use value, and guiding the subsequent development and evaluation of innovative bamboo-woven products.

Historical Development of Yexie Bamboo Weaving

Yexie bamboo weaving is one of the representative traditional bamboo weaving crafts in Shanghai. Its development has been shaped by the natural environment of the Jiangnan region, local production systems, and traditional lifestyles. Located in Songjiang District, Shanghai, Yexie Town has long been characterized by an extensive waterway network and convenient transportation, which facilitated commercial activities and the circulation of bamboo materials. Abundant bamboo resources, together with generations of accumulated craftsmanship, provided the material and technical foundation for the development of the local bamboo weaving tradition. Initially, Yexie bamboo weaving primarily served agricultural production and daily household needs, producing baskets, sieves, trays, and other woven utensils for storage, transportation, food processing, and domestic use.

Since the mid-to-late 20th century, plastic, metal, and other industrial materials gradually replaced traditional bamboo products, leading to a significant decline in the production scale, market demand, and practical use of Yexie bamboo weaving. In recent years, supported by China's policies on safeguarding intangible cultural heritage, Yexie bamboo weaving has gradually shifted from producing daily necessities to cultural exhibitions, educational activities, and cultural creative products. Its value has expanded from functional utility to cultural identity, historical memory, and ecological knowledge transmission. Nevertheless, challenges such as the aging of inheritors, shrinking market demand, and limited product innovation continue to threaten its long-term sustainability.

Material Characteristics

Bamboo is the primary material underpinning the craft of Yexie bamboo weaving, and its natural properties directly influence structural formation, manufacturing processes, and design potential. China possesses the world's richest bamboo resources, with most bamboo forests distributed throughout the Yangtze River Basin and southern regions, providing a stable material base for traditional bamboo weaving (Jiang, 2002). Compared with timber, bamboo has a shorter growth cycle, excellent renewability, and lower environmental impact, making it an ideal material for sustainable design (Ben-Zhi et al., 2005).

In terms of material performance, bamboo exhibits high tensile strength, excellent flexibility, and outstanding splitability. Through traditional processing techniques such as splitting, scraping, and steaming, bamboo can be transformed into fine and elastic strips that maintain structural stability during bending and weaving (Liang et al., 2023). Furthermore, its naturally aligned fibers and distinctive surface texture not only create a unique visual identity but also influence weaving techniques and product forms.

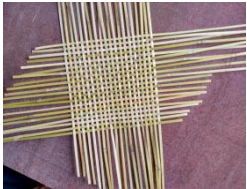
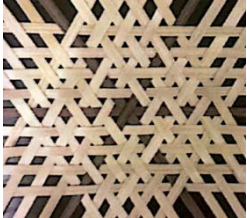
Weaving and Structural Logic

Weaving structure is the core of bamboo weaving craftsmanship and the fundamental mechanism through which linear bamboo strips are transformed into three-dimensional objects. Unlike woodworking or ceramics, which rely on joints or molds, the stability of bamboo weaving is achieved through the continuous interlacing of bamboo strips and the balance of intersection, overlapping, and tension within the woven network. Pye's (1968) concept of Workmanship of Risk argues that the quality of handcrafted objects depends on the craftsman's continuous judgment and control throughout the making process rather than

standardized industrial procedures. This perspective effectively explains the structural formation of bamboo weaving, in which every weaving operation directly influences the strength, stability, and final form of the product.

Traditional bamboo weaving is primarily based on the warp-and-weft principle, where longitudinal and transverse bamboo strips are repeatedly interwoven to form a stable structural network (Xu, 2010). Over centuries of development, Chinese bamboo weaving has evolved into various weaving typologies, Table 1 lists the Common Weaving Techniques in Bamboo Craft. Each weaving pattern determines not only the mechanical performance of the product but also its spatial form and visual characteristics. For example, hexagonal weaving produces a honeycomb-like structure with high stability and efficient material utilization, making it suitable for load-bearing products. Twill weaving provides greater flexibility and dynamic visual rhythm for curved surfaces.

Table 1 Common Weaving Techniques in Bamboo Craft

Weave Type	Craft Characteristics	Example
1) Cross Weave	First, arrange the warp materials. Then, weave the weft materials horizontally using a “pick one, press one” pattern.	
2) Twill Weave	This technique evolves from the cross weave. When weaving each row of weft strips, ensure the warp strips pressed down alternate by one position each time.	
3) Loop Weave	Beginning at the center, this pattern extends symmetrically in all directions using a “press three, lift three” technique. The loop weave represents an advanced, patterned evolution of the cross weave.	
4) Triangular Weave	Begin with 3 strips at center, radiating outward in equiangular crossings. Overlay six strips on this base, then incrementally add more strips sequentially.	
5) Hexagonal Weave	Start with three strips. Overlay three more strips to form hexagonal openings, then incrementally add six strips sequentially.	

6) Circular Opening Weave	Strips radiate outward from the wheel's center point. Begin with four strips as a unit, overlapping and spreading outward as shown in the diagram. Then increase by four strips for each subsequent weave.	
7) Chrysanthemum Base Weave	Arrange eight bamboo strips radially from the center at equal angles. Use a circular weaving tool to press and weave them into a circular pattern.	

Importantly, woven patterns are not decorative elements added after production but are generated simultaneously with the structural process. The direction of the weave, the density of intersections, and the repetition of geometric units collectively create the distinctive visual language of bamboo weaving, demonstrating the principle that "structure is pattern, and pattern is structure" (Bao, 2014). Recent studies further suggest that the geometric regularity of woven units can be interpreted as an algorithmic structural system, providing a theoretical basis for digital modeling and parametric design in contemporary product development (Zhang, 2023). As a representative craft of the Jiangnan region, Yexie bamboo weaving is distinguished by its characteristic of fine-strip dense weaving. Through precise bamboo splitting, careful surface preparation, and high-density weaving techniques, Yexie products achieve lightweight yet stable structures with delicate textures and refined craftsmanship. This integration of material properties, structural logic, and regional aesthetics establishes a strong structural foundation for the contemporary transformation of Yexie bamboo weaving into modern household and lifestyle products.

Transformation of Use Value

Traditional bamboo-woven products originated from the practical needs of agricultural society, serving essential functions such as storage, transportation, food processing, and everyday household use. As functional tools, they were deeply embedded in local production systems and daily life, becoming indispensable artifacts within traditional rural communities (Chen, 2017). However, with the rapid development of industrialization and urbanization, plastic, metal, and other industrial materials gradually replaced bamboo products because of their lower cost, standardized production, and improved durability. Consequently, the practical functions of traditional bamboo weaving have steadily declined (Fu, 2023).

At the same time, the social value of bamboo weaving has shifted from functional utility toward cultural representation and experiential consumption. Kirshenblatt-Gimblett (2004) describes this transformation as a process of heritagization, in which traditional crafts move from everyday life into systems of cultural display, tourism, and heritage interpretation. Today, bamboo weaving is increasingly presented through museum exhibitions, cultural and creative products, and intangible cultural heritage experience programs, where its symbolic and cultural meanings often outweigh its practical functions. Smith (2006) argues that this process of de-functionalization helps preserve cultural heritage but weakens its connection with contemporary everyday life.

Contemporary Adaptation Potential

In recent years, design research has increasingly focused on the concept of re-domestication, which seeks to reintegrate traditional crafts into contemporary everyday life rather than limiting them to cultural exhibitions or tourism experiences (Banerjee, 2024). From a design perspective, the value of traditional craftsmanship lies not only in cultural preservation but also in its ability to respond to contemporary lifestyles, consumer expectations, and product experiences. Manzini (2015) argues that design should reconstruct the relationship between people, products, and the environment, enabling traditional crafts to regain practical relevance and social significance within modern contexts.

Bamboo weaving possesses considerable potential for contemporary adaptation. Its lightweight structure, natural translucency, and rich woven textures make it highly suitable for modern residential interiors, commercial environments, and public cultural spaces, particularly in lighting, furniture, and interior accessories. Furthermore, the visible traces of handcraftsmanship enhance emotional attachment and cultural identity, responding to the growing consumer demand for natural materials, authentic experiences, and locally rooted cultural products. In addition, bamboo is renewable, low-carbon, and biodegradable, making it well aligned with current trends in sustainable design and environmentally responsible consumption (Fang et al., 2025). These characteristics indicate that bamboo weaving is not only a valuable cultural heritage but also a promising resource for contemporary product innovation and sustainable design development.

Related Studies

Table 2 is a comprehensive analysis of the relevant studies, covering a comparative review of 12 studies.

Table 2 Tools for Bamboo Weaving and Their Functions

Author and Year	Theoretical framework and Research methodology	Research focus and Main findings	Research gap
Kirshenblatt-Gimblett (2004)	Intangible Cultural Heritage Living Culture Theory, Literature Analysis	The cultural production mechanism of intangible cultural heritage, Intangible cultural heritage is not a static legacy, but a cultural practice that is continuously reproduced in modern society	Did not involve how specific processes enter modern product systems
Greenhalgh (2003)	Craft Persistence Theory, Study of the History of Technology	The continuation of handicrafts in modern society requires contemporary crafts to reestablish their social function.	No systematic product conversion path proposed.
Smith (2006)	Heritage Uses Theory, Cultural studies, case analysis	The Social Construction of Heritage, Heritage value comes from social use rather than the object itself.	Lack of discussion on design intervention mechanisms.
Walker (2014)	Sustainable Design Theory, Design Theory Research	Sustainable design and social relations, sustainable design should focus on cultural and ethical dimensions	There are few case studies on traditional craftsmanship
He Xiaoyou (2022)	Design-driven Creativity, Case Study	Yixing purple clay teapot design innovation:	Emphasizes visual

Author and Year	Theoretical framework and Research methodology	Research focus and Main findings	Research gap
		traditional craftsmanship can achieve innovation through design-driven approaches.	innovation, lacks user evaluation
Wang Zuotang (2005)	Theory of Craft Deconstruction, Theoretical Analysis	Traditional craftsmanship is transformed for the modern era, and craft elements can be deconstructed and recombined into modern design.	Lack of complete design practice verification
Xu Bing (2019)	Theory of Craft Integration, Product Case Analysis	The integration of bamboo weaving with modern furniture allows bamboo weaving to enhance the cultural recognition of the product.	Sustainable design and digital technology not discussed
Hong Zihan (2021)	Theory of Lighting Design Application, Product Design Practice	The application of Wuzhen bamboo weaving in lighting fixtures strengthens the spatial aesthetic experience through the relationship between light and shadow.	Lack of systematic user feedback research
Ma Xiaona et al. (2019)	Theory of Digitalization of Intangible Cultural Heritage, Technical Review	Digital development of intangible cultural heritage, digital technology can enhance the efficiency of intangible cultural heritage dissemination	Has not involved the transformation of physical product design
Lo et al. (2025)	Digital Craft Theory, Digital Modeling Experiment	Bamboo digital workflow, digital modeling can expand the possibilities of bamboo design	Ignoring cultural significance and local issues
Wong et al. (2024)	Sustainable Material Design, Experimental research	3D printing applications of bamboo materials, bamboo materials can enter the modern manufacturing system	Leans towards engineering research, lacking the dimension of cultural studies
Fang et al. (2025)	Wabi-Sabi Aesthetics, Aesthetic Analysis	Bamboo woven furniture and Eastern aesthetics, bamboo weaving conforms to contemporary naturalist aesthetics	Lack of industrialization and product system research

Recent studies on bamboo weaving, intangible cultural heritage (ICH), and design transformation can be broadly classified into four areas: heritage conservation, the integration of traditional crafts with contemporary design, sustainable design, and digital technologies. In the field of ICH, UNESCO (2003; 2016), Kirshenblatt-Gimblett (2004), and Smith (2006)

argue that intangible cultural heritage should be understood as a living cultural practice sustained through the transmission of knowledge, skills, and social relationships rather than merely preserving traditional techniques. This perspective has shifted heritage research from static preservation toward dynamic cultural continuity.

Within design research, scholars such as Wang (2002) and He (2022) propose that traditional crafts should be revitalized through contemporary design so that they can re-enter modern life. Increasing attention has also been given to the application of bamboo weaving in furniture, lighting, and interior products. Xu (2010) systematically documented the craftsmanship and typology of Chinese bamboo weaving, while Hong (2021) highlighted the unique structural aesthetics and light-transmitting qualities of bamboo weaving, emphasizing its potential for contemporary lighting design.

Meanwhile, sustainable design and digital manufacturing have become important directions for craft innovation. Papanek (1971), Throsby (2001), and Manzini (2015) emphasized ethical design, cultural sustainability, and social innovation, whereas Lo et al. (2025) and Wong et al. (2024) demonstrated that digital modeling and 3D printing can expand the structural possibilities and manufacturing approaches of bamboo products. Nevertheless, existing studies largely focus on heritage conservation, material performance, or technological innovation, while offering limited discussion of how craft logic, cultural value, and contemporary product development can be systematically integrated and validated through user-centered evaluation.

Research Gap and Innovation

Although previous studies have investigated bamboo weaving from the perspectives of heritage conservation, traditional craftsmanship, sustainable design, and digital technology, several important gaps remain. Existing research has primarily focused on historical documentation, cultural preservation, and craft representation, while paying limited attention to the relationships among material characteristics, weaving structures, cultural significance, and the contemporary adaptation of bamboo weaving. Moreover, systematic discussions on how traditional bamboo weaving can achieve sustainable continuity within modern urban contexts remain insufficient.

To address these gaps, this study examines Yexie bamboo weaving through the dimensions of historical development, craft characteristics, and cultural significance. It further analyzes the major challenges affecting its transmission and explores its potential for contemporary adaptation as living heritage. Based on these findings, the study provides a culture – craft – sustainability analytical perspective for understanding the sustainable continuity and contemporary adaptation of traditional bamboo weaving, providing a theoretical foundation for understanding the sustainable continuity and contemporary adaptation of traditional bamboo weaving, while offering implications for future research on heritage conservation and design-oriented revitalization.

RESEARCH METHODOLOGY

Research Question

This study focuses on the sustainable development of Yexie bamboo weaving in Shanghai. It investigates the historical development, craft characteristics, and cultural significance of Yexie bamboo weaving, examines the major challenges affecting its inheritance in contemporary society, and explores possible approaches for reintegrating this traditional craft into modern life.

Research Design

A mixed-methods research design was adopted, integrating both qualitative and quantitative approaches. The research process consisted of literature review, field investigation, in-depth interviews, questionnaire survey, and comprehensive data analysis, thereby improving the reliability and completeness of the research findings.

Research Participants

The study focused on Yexie bamboo weaving in Shanghai and its related stakeholders. The qualitative research adopted purposive sampling and involved 10 participants, including representative inheritors of Yexie bamboo weaving, bamboo weaving practitioners, intangible cultural heritage (ICH) administrators, cultural center staff, and academic experts. All participants had extensive experience in the preservation, transmission, management, or research of Yexie bamboo weaving, enabling them to provide professional insights into its craft characteristics, cultural significance, and contemporary development.

The quantitative research consisted of a consumer questionnaire survey with 384 valid responses. The respondents were members of the general public in Shanghai who had experience using or purchasing bamboo-woven products or expressed potential interest in such products. The survey aimed to investigate public perceptions of the cultural value, aesthetic quality, functional performance, cultural expression, contemporary applicability, and purchase intention of bamboo-woven products, thereby providing empirical evidence for evaluating the contemporary relevance and sustainable development potential of Yexie bamboo weaving.

Qualitative Methods

The qualitative phase consisted of literature review, field observation, and semi-structured interviews. The literature review examined the historical development, craft system, and theoretical background of Yexie bamboo weaving, while field investigations documented bamboo processing techniques, weaving procedures, and product categories. Semi-structured interviews explored five major themes: historical development, craft characteristics, cultural significance, inheritance challenges, and sustainable development. Interview data were analyzed using thematic analysis to identify, categorize, and interpret the key factors influencing the continuity and development of Yexie bamboo weaving.

Quantitative Methods

The quantitative phase employed a consumer questionnaire comprising 25 measurement items. A five-point Likert scale was used to investigate public perceptions of bamboo-woven products in terms of aesthetics, functionality, cultural expression, contemporary applicability, and purchase intention. Prior to the formal survey, the questionnaire was reviewed by experts for content validity and pilot-tested to ensure its validity and reliability. The collected data were analyzed using SPSS Statistics 25.0 through descriptive statistical methods, including frequencies, percentages, means, and standard deviations, to summarize consumer evaluations of traditional bamboo-woven products.

Data Analysis

The findings from the qualitative and quantitative phases were integrated to provide a comprehensive understanding of the historical development, craft characteristics, cultural significance, and sustainability challenges of Yexie bamboo weaving. Qualitative analysis was used to interpret the historical and cultural dimensions of the craft, while quantitative analysis reflected public perceptions and evaluations. The integration of both datasets provided a comprehensive basis for understanding the sustainable development and contemporary relevance of Yexie bamboo weaving.

RESEARCH RESULTS

This study integrated literature analysis, field observation, semi-structured interviews, and a consumer questionnaire survey to comprehensively examine the craft characteristics, cultural significance, and sustainable development of Yexie bamboo weaving in Shanghai. The research findings can be summarized into four main aspects.

First, the study confirms that Yexie bamboo weaving possesses distinctive regional craft characteristics. The literature review and field investigation indicate that the craft originated from the long-term production and daily life practices of the Jiangnan water-town region. Its

technical system is based on high-quality bamboo resources, finely processed bamboo strips, and high-density weaving techniques. Unlike the bamboo weaving traditions of southwestern China, which emphasize coarse bamboo strips and load-bearing structures, Yexie bamboo weaving is characterized by fine-strip dense weaving, resulting in delicate textures, lightweight structures, and refined forms. Interview findings further reveal that local artisans regard bamboo weaving not merely as a handicraft but also as an important cultural medium that embodies the aesthetic values of Jiangnan, local collective memory, and the harmonious relationship between humans and nature.

Second, material characteristics and weaving structures together constitute the core craft logic of Yexie bamboo weaving. The study finds that bamboo possesses excellent sustainability attributes, including renewability, light weight, high flexibility, and excellent splitability, providing a reliable material foundation for traditional bamboo weaving. After undergoing traditional processing procedures such as splitting, shaving, steaming, and boiling, bamboo can be transformed into flexible linear strips that are woven into stable structural systems through various techniques, including plain weaving, hexagonal weaving, and herringbone weaving. The analysis further demonstrates that the woven patterns are not decorative elements added after production but are generated simultaneously with the structural formation process, illustrating the integrated characteristic of "structure as pattern and pattern as structure." The close interaction between material properties, structural logic, and cultural expression provides an important foundation for the contemporary transformation of traditional bamboo weaving. Third, the qualitative findings indicate that the sustainable transmission of Yexie bamboo weaving is constrained by multiple interrelated factors, including the disappearance of everyday usage contexts, the aging of craft inheritors, limited market demand, and insufficient product innovation. Based on thematic analysis, four major themes emerged from the interview data: (1) loss of everyday functionality; (2) shortage of young successors; (3) limited market integration; and (4) increasing demand for design-oriented innovation.

Most craft inheritors and practitioners agreed that the widespread adoption of industrial materials and changing lifestyles have significantly reduced the practical use of traditional bamboo products. As one representative inheritor commented: In the past, almost every household used bamboo baskets, sieves, and containers. Today, most of them have been replaced by plastic products, and young people rarely use bamboo weaving in their daily lives. Another frequently mentioned issue was the shortage of young practitioners. One experienced artisan stated: Learning bamboo weaving requires years of practice, but the income is unstable. Most young people are unwilling to devote themselves to this craft. Interviewees from cultural heritage management organizations emphasized that current conservation efforts mainly focus on documentation, exhibitions, and public promotion, while systematic support for product development and market cultivation remains limited. As one cultural project manager explained: Heritage preservation has improved considerably, but there are still very few bamboo products that can truly enter contemporary markets and everyday households. Regarding future development, nearly all experts agreed that design innovation represents the most promising pathway for sustainable revitalization. They suggested preserving the material characteristics and weaving structures of Yexie bamboo weaving while integrating contemporary product design concepts and digital manufacturing technologies. One design scholar remarked: What should be inherited is not merely the appearance of bamboo weaving, but its material logic, structural principles, and cultural meanings, all of which can be reinterpreted through contemporary design.

Finally, the consumer questionnaire provided complementary evidence regarding public perceptions of Yexie bamboo weaving products. A total of 384 valid questionnaires were collected. The age distribution indicates that respondents aged 26-35 years accounted for the largest proportion (30.2%), followed by those aged 18-25 years (27.1%), suggesting that the

sample was primarily composed of young and middle-young consumers, representing 57.3% of all respondents. Regarding occupation, students (25.5%) and corporate employees (24.0%) constituted the largest groups, followed by respondents working in the design and creative industries (19.8%), providing a representative sample of potential consumers and design-oriented users.

With respect to experience using bamboo-woven products, 38.0% of respondents had only seen such products, while 36.7% had occasionally purchased or used them. Only 12.5% reported frequent use, indicating that traditional bamboo products have gradually disappeared from everyday life. Concerning familiarity with intangible cultural heritage (ICH), 44.5% of respondents reported being familiar or very familiar with ICH, 32.8% expressed a neutral level of familiarity, and only 22.7% reported being unfamiliar. These findings suggest that the public generally possesses a relatively good awareness of ICH, providing a favorable social foundation for the contemporary dissemination and design adaptation of Yexie bamboo weaving.

Based on the descriptive statistical analysis of questionnaires (Table 3). All five evaluation dimensions obtained mean scores above 4.00, indicating an overall positive evaluation. The relatively small standard deviations (0.71 – 0.82) further indicate a high level of agreement among respondents. Among them, Cultural Expression received the highest score ($M = 4.33$, $SD = 0.71$), suggesting that respondents strongly recognized the ability of bamboo weaving products to convey traditional Chinese craftsmanship, local cultural identity, and the value of intangible cultural heritage. This was followed by Purchase Intention ($M = 4.22$, $SD = 0.77$) and Aesthetic Value ($M = 4.18$, $SD = 0.78$), indicating that bamboo weaving products integrating traditional craftsmanship with contemporary design language were perceived as highly attractive.

In addition, Contemporary Applicability ($M = 4.16$, $SD = 0.79$) and Functional Value ($M = 4.05$, $SD = 0.82$) also achieved relatively high ratings, demonstrating that respondents generally believed bamboo weaving products could adapt well to contemporary home environments while benefiting from the ecological advantages of bamboo and its compatibility with modern materials and manufacturing technologies. Overall, the results indicate that consumers value not only the cultural significance of bamboo weaving but also its practical performance, aesthetic quality, and adaptability to modern lifestyles. These findings suggest that traditional bamboo weaving retains considerable market potential, and that its future development largely depends on effectively integrating traditional cultural values with contemporary lifestyle needs through design innovation.

Table 3 Descriptive Statistics by Dimension

Dimension	Items	Mean	SD
Aesthetic Value	Q5-Q9	4.18.	0.78
Functional Value	Q10-Q14	4.05	0.82
Cultural Expression	Q15-Q19	4.33	0.71
Contemporary Applicability	Q20-Q24	4.16	0.79
Purchase Intention	Q25	4.22	0.77

Overall, the findings demonstrate that Yexie bamboo weaving possesses a well-established craft system, rich cultural significance, and considerable ecological advantages, providing a solid foundation for its sustainable development. Nevertheless, its long-term viability continues to be challenged by the disappearance of traditional usage contexts, insufficient market demand, and weaknesses in the inheritance system. Therefore, strengthening the connection between traditional craft culture and contemporary lifestyles is essential for promoting the

sustainable revitalization and continued development of Yexie bamboo weaving in modern society.

CONCLUSION AND DISCUSSION

This study examined the historical development, craft characteristics, and contemporary inheritance challenges of Yexie bamboo weaving from the perspective of sustainable development of intangible cultural heritage. The findings indicate that Yexie bamboo weaving is distinguished by its fine-strip dense weaving, lightweight structures, and refined textures. Its material properties, weaving logic, and regional cultural traditions together constitute an integrated craft system. Furthermore, bamboo's renewability, low-carbon characteristics, and excellent processing performance provide significant ecological advantages and long-term sustainability potential.

Nevertheless, rapid industrialization, changing consumer behavior, and evolving lifestyles have gradually weakened the traditional practical functions of bamboo weaving. The craft currently faces multiple challenges, including an aging group of inheritors, declining market demand, and limited public awareness. As a result, Yexie bamboo weaving has gradually shifted from a functional household craft toward a form of cultural display and intangible heritage experience, preserving its symbolic value while gradually losing its connection with everyday life.

These findings support the view that safeguarding intangible cultural heritage should move beyond static preservation toward adaptive regeneration. Rather than treating traditional crafts merely as cultural symbols, future conservation strategies should strengthen their relevance within contemporary lifestyles through design-oriented reinterpretation, cultural innovation, and broader public engagement. By identifying the historical characteristics, craft logic, and contemporary challenges of Yexie bamboo weaving, this study contributes to the theoretical understanding of traditional bamboo weaving in Shanghai and provides a valuable reference for future research on cultural sustainability, heritage adaptation, and the revitalization of traditional crafts.

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