

Research on Symbolic Deconstruction of Intangible Cultural Heritage Elements and Translation Methods in Cultural and Creative Design—Taking Traditional Patterns as an Example

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ABSTRACT Traditional patterns in intangible cultural heritage represent the aesthetic core of textile craftsmanship and serve as visual symbols that embed cultural memory into material form. In engineering-oriented digital heritage applications, their ordered motifs and material textures may also provide structured design references for textile electromagnetic surfaces, antennaintegrated display carriers, and electromagnetic-wave sensing interfaces where cultural meaning and functional patterning must coexist. Taking traditional patterns as the research object, this paper constructs a three-level symbolic deconstruction model of surface form, middle-level implication, and deep-seated culture by applying semiotics, design aesthetics, and cultural communication theory. Through literature research, case analysis, empirical design, and expert evaluation, it systematically explores the symbolic characteristics and deconstruction logic of traditional patterns. On this basis, a four-stage translation method of form extraction, implication reconstruction, function adaptation, and context integration is proposed, with a logic-coupling mechanism between deconstruction and translation. The feasibility of the method is verified through design practices involving interlocking swallowtail patterns, interlocking lotus patterns, and Miao embroidery series patterns. By connecting heritage aesthetics, textile material expression, and contemporary functional design, this study provides theoretical support for the modern translation of intangible cultural heritage elements and a practical reference for culturally informed electromagnetic-wave interactive design.

INDEX TERMS intangible cultural heritage, traditional patterns, symbolic deconstruction, textile electromagnetic surfaces, electromagnetic-wave sensing

I. INTRODUCTION

A. RESEARCH BACKGROUND

THE traditional textile industry serves as a vital carrier of China's excellent traditional culture, manifesting the core values of intangible cultural heritage through its unique craftsmanship and aesthetic wisdom. It represents the inheritance and development of Chinese civilization and demonstrates the outstanding creativity of humans and the diversity of cultures [1]. Against the backdrop of Chinese cultural globalization, ICH plays a crucial role in China's cultural export [2, 3]. ICH includes oral traditions, social customs, performing arts, knowledge and practices related to nature and the universe, and related handicrafts passed down from ancient times to the present [4-6]. Among numerous ICH items, handicrafts particularly embody the wisdom and cultural marks of a nation. With the rapid development of

modern society, many ICH projects are facing an inheritance crisis. How to protect and inherit these precious cultural heritages has become an urgent issue to be addressed [7, 8]. A distinctive feature of ICH is that it is inseparable from the special production and lifestyle of a single ethnic group or multiple aggregated ethnic groups, and vividly reflects the uniqueness, aesthetic tastes, and customs of the nation. It exists relying on people and the nation's traditional culture itself, manifests through sounds, graphics, craftsmanship, etc., and develops and continues as cultural achievements through verbal instruction, demonstration, or inheritance [9-11]. The visual graphics contained in ICH can be transformed into contemporary graphic symbols and participate in the design of cultural and creative products [12]. This not only strengthens the inheritance and protection of traditional ICH patterns but also promotes the prosperity and

development of the cultural and creative industry. Currently, there are many problems in ICH cultural and creative design. Some designs only stay on the superficial application of cultural and creative products, lacking in-depth excavation of symbolic connotations. Therefore, scientifically deconstructing the symbolic system of traditional patterns and constructing a systematic translation method can not only promote the inheritance and innovation of ICH but also inject new vitality and connotations into China's cultural and creative industry, realizing the perfect integration of traditional culture and modern design.

B. RESEARCH STATUS

The concept of the cultural and creative industry was first proposed in Europe and America. It is an emerging industry with creativity as the core. Cultural products have cultural connotations, aesthetic value, or artistry and are non-material products [13]. Taiwan has actively promoted the concept of "cultural and creative industry" since 2002. Taiwan's cultural and creative products not only focus on product design but also integrate the concepts of the entire system of production, manufacturing, and services. They believe that the development of the cultural and creative industry has a trend of "universalization and integration" [14]. Yin conducted research on the cultural value of cultural products and believed that managers need to enhance their understanding of the cultural value of products and incorporate cultural elements into traditional cultural and creative products [15]. Simon argued that a powerful measure to enhance soft power is to export one's own cultural values, and the main way to promote the export of cultural values is to export one's own cultural and creative industry [16]. Although many of China's intangible cultural heritages have been included in the protection list, they still face crises such as lack of successors and loss of craftsmanship due to various reasons. Integrating ICH into cultural and creative products can effectively change this situation [17, 18]. Huang Xuewen believed that Guizhou is rich in ICH resources, but the ICH cultural and creative industry started late due to various restrictions, with an unbalanced industrial chain. It is necessary to establish brand awareness, expand publicity channels, and build a sustainable development path using "Internet +" [19]. He Zhan argued that the key to the marketing strategy of ICH cultural and creative products lies in making consumers recognize the cultural connotation of the products rather than their use value or appearance design [20]. Traditional patterns containing ICH elements are not only a symbol of the cultural form of the Chinese nation but also carry rich historical and cultural information [21, 22]. Excellent ICH cultural and creative design can drive economic development and promote the development of the cultural industry [23]. From the perspective of symbolic deconstruction of ICH elements and translation methods in cultural and creative design, this paper explores the path of combining traditional patterns with cultural and creative products to promote the promotion of traditional

ICH patterns and further promote the sustainable inheritance of ICH.

C. RESEARCH PURPOSE AND SIGNIFICANCE

1) Research Purpose

- 1) Construct a three-level symbolic deconstruction model of traditional patterns to reveal their symbolic generation logic and connotative connections
- 2) Propose scientific and feasible translation methods for cultural and creative design to solve the problems of "formalization" and "homogenization" in current ICH cultural and creative design
- 3) Verify the effectiveness of the method through empirical design and provide practical references for the modern translation of ICH elements.

2) Research Significance

- **Theoretical Significance:** By integrating textile semiotics into the theoretical framework of ICH symbolic deconstruction, this research refines the methodology for translating woven patterns and fabric textures into contemporary design, offering a novel interdisciplinary perspective that bridges cultural heritage with material innovation.
- **Practical Significance:** Conduct precise design of ICH cultural and creative products, enhance the cultural value and market competitiveness of cultural and creative products, and promote the living inheritance of ICH.

D. RESEARCH CONTENT AND METHODS

1) Research Content

- Sorting out the symbolic attributes and classification system of traditional patterns (including Han and ethnic minority patterns);
- Construction of a three-level symbolic deconstruction model of traditional patterns, focusing on supplementing the deconstruction logic of ethnic minority patterns;
- Proposal and refinement of translation methods for ICH cultural and creative design, considering both process characteristics and cultural adaptation;
- Empirical design (interlocking swallowtail patterns, interlocking lotus patterns, Miao embroidery series patterns) and effect verification of the translation method.

2) Research Methods

- **Literature Research Method:** Sort out theories related to semiotics, ICH protection, cultural and creative design, and ethnology to lay the theoretical foundation for the research;
- **Case Analysis Method:** Select excellent domestic and foreign ICH cultural and creative cases (including Miao embroidery cultural and creative products) to analyze their symbolic deconstruction and translation strategies;
- **Empirical Research Method:** Take interlocking swallowtail patterns, interlocking lotus patterns, and Miao

embroidery series patterns as specific objects, and apply the proposed method to conduct cultural and creative design practices;

- **Expert Interview Method:** Invite ICH research scholars, Miao embroidery inheritors, and designers to evaluate the design results to verify the feasibility of the method.

II. SYMBOLIC ATTRIBUTES AND CLASSIFICATION SYSTEM OF TRADITIONAL PATTERNS

A. SYMBOLIC NATURE OF TRADITIONAL PATTERNS

Traditional patterns are 'cultural symbols' with basic semi-otic attributes: the signifier (surface form, such as lines, colors, composition, and craft texture) and the signified (deep-seated meaning, such as auspicious implications, cultural beliefs, and historical memories). Their symbolic generation follows the logic of "natural phenomena/historical events - cultural coding - symbolic presentation": most Han patterns originate from natural observation and auspicious prayers (e.g., dragons symbolize imperial power, peonies symbolize wealth and honor), while Miao patterns have no written inheritance and encode historical migrations, totem worship, and folk rituals into visual symbols, becoming "history books worn on the body". Both types of patterns are solidified through artistic processing and craftsmanship to form standardized forms, serving as cultural communication carriers across time and space.

B. CLASSIFICATION SYSTEM OF TRADITIONAL PATTERNS

According to symbolic connotations and application scenarios, traditional patterns are divided into three categories (see Table 1). Geometric patterns are defined by their visual structural characteristics (e.g., lines, composition), while auspicious patterns are categorized by their core connotation of "purposeful blessing expression"—the two categories are not mutually exclusive but can overlap.

III. THREE-LEVEL SYMBOLIC DECONSTRUCTION MODEL OF TRADITIONAL PATTERNS

A. CONSTRUCTION LOGIC OF THE DECONSTRUCTION MODEL

Based on semiotic theory, the meaning generation of traditional patterns (including Han and ethnic minority patterns) is a progressive process of "surface form

- Surface form is the visual and craft carrier of symbols (including characteristics of craft techniques);
- Middle-level implication is the core semantics of symbols, focusing on context-independent direct/extended meanings;
- Deep-seated culture is the root of symbols (Han patterns focus on philosophical thoughts and auspicious culture, while ethnic minority patterns focus on historical memory and folk beliefs), manifested through context-dependent values and cultural norms.

B. DECONSTRUCTION DIMENSIONS AND METHODS AT EACH LEVEL

1) Surface Form Deconstruction

Surface form is the visual presentation of traditional patterns, including four dimensions: lines, colors, composition, and texture. The core of deconstruction is to extract the visual characteristics and composition rules of patterns (see Table 2).

2) Middle-Level Implication Deconstruction

Middle-level implication is the cultural semantics carried by traditional patterns, including four dimensions: direct implication, extended implication, situational implication (semantic adaptation in specific usage scenarios), and historical narrative implication (see Table 3).

3) Deep-Seated Culture Deconstruction

Deep-seated culture is the root of the generation of traditional patterns, including four dimensions: philosophical thoughts, folk beliefs, social systems, and historical migration and ethnic identity (see Table 4).

IV. TRANSLATION METHODS FOR ICH CULTURAL AND CREATIVE DESIGN

Based on the three-level symbolic deconstruction model, a four-stage translation method of "form extraction - implication reconstruction - function adaptation - context integration" is proposed to realize the transformation of traditional patterns from "cultural symbols" to "design language".

Logic Coupling Mechanism Between Deconstruction and Translation:

- 1) Surface form deconstruction directly informs "form extraction" (retaining core visual/craft characteristics)
- 2) Middle-level implication deconstruction guides "implication reconstruction" (adapting semantics to contemporary needs)
- 3) Deep-seated culture deconstruction underpins "function adaptation" and "context integration" (ensuring cultural roots are reflected in product functions and modern contexts).

A. STAGE 1: FORM EXTRACTION

Based on the deconstruction of surface form, follow the principles of "simplification - reconstruction - standardization - process adaptation" to transform traditional patterns into visual elements suitable for modern design while retaining core process characteristics.

Simplification: Remove redundant details and retain core visual and process characteristics. For example, simplify the complex double-needle lockstitch patterns of Leishan Miao embroidery into linear outlines while retaining the fold line characteristics of lockstitch;

Reconstruction: Break the fixed composition of traditional patterns and conduct unit recombination. For example, recombine the frog pattern and rice ear pattern units of Huaxi Miao cross-stitch into irregular continuous patterns;

TABLE 1. Classification System and Characteristics of Traditional Patterns

Category	Subcategory	Core Connotation	Typical Cases	Application Scenarios	Symbolic Characteristics
Geometric Patterns	Han Geometric Patterns	Order, Eternity, and/or Auspiciousness	Interlocking swallowtail pattern, cloud and thunder pattern, square pattern	Edge of artifacts, architectural decoration	Regular lines, repeated arrangement, symmetrical balance
Geometric Patterns	Ethnic Minority Geometric Patterns	Totem Worship, Historical Memory, and/or auspiciousness	Leishan Miao embroidery geometric pattern, Tibetan Eight Auspicious geometric pattern	Collar, cuffs of clothing, backpacks	Exaggerated lines, deformed recombination, prominent craft texture
Animal and Plant Patterns	Han Animal and Plant Patterns	Prayer for blessings, warding off evil spirits, vitality	Interlocking lotus pattern, dragon and phoenix pattern, magpie perching on plum blossom pattern	Clothing, fabrics, ceramics	Combination of realistic and exaggerated forms, clear implications
Animal and Plant Patterns	Ethnic Minority Animal and Plant Patterns	Nature Worship, Folk Beliefs	Huaxi Miao cross-stitch frog pattern, cow hoof fork pattern	Main body of clothing, baby carriers	Abstract shapes, strong symbolic meaning
Auspicious Combined Patterns	Han Auspicious Patterns	Composite prayer for blessings, scene narration	Fortune, Emoluments, Longevity, and Joy pattern, Five Grains Abundant pattern	Festival supplies, furniture decoration	Recombination of multiple symbols, semantic superposition
Auspicious Combined Patterns	Ethnic Minority Auspicious Patterns	Multi-dimensional prayer for blessings, ritual symbolism	Jianhe Miao tin embroidery maze pattern, Miao King seal pattern	Festival costumes, religious ritual supplies	Complex composition, mysterious semantics, unique craftsmanship

TABLE 2. Dimensions and Methods of Surface Form Deconstruction

Deconstruction Dimension	Core Content	Deconstruction Method	Case Application (Han: Interlocking Swallowtail Pattern; Ethnic Minority: Miao Cross-stitch)
Lines	Line type (straight line, curve), thickness, direction	Line extraction, simplification, recombination	Interlocking swallowtail pattern: Extract continuous straight lines and simplify into basic "interlocking" units; Cross-stitch: Extract cross-stitch lines and simplify into rhombus basic units
Colors	Main color, auxiliary color, color implication	Color analysis, color value extraction, contemporary adaptation	Interlocking swallowtail pattern: Adapt traditional red to Morandi red; Cross-stitch: Adapt early silver tone to high-grade gray and mid-term red tone to coral red
Composition	Arrangement method (continuous, symmetrical, radial), density relationship	Composition decomposition, unit extraction	Interlocking swallowtail pattern: Decompose two-dimensional continuous composition; Cross-stitch: Decompose four-dimensional continuous cross composition and extract frog pattern and rice ear pattern units
Texture	Material correlation, texture characteristics	Texture simulation, digital transformation	Interlocking swallowtail pattern: Simulate fabric texture and transform into vector graphics; Cross-stitch: Simulate linen base fabric and silk thread interweaving texture and digitally restore cross-stitch texture

TABLE 3. Dimensions and Methods of Middle-Level Implication Deconstruction

Deconstruction Dimension	Core Content	Deconstruction Method	Case Application (Han: Interlocking Lotus Pattern; Ethnic Minority: Miao Tin Embroidery)
Direct Implication	Literal meaning of the pattern itself	Literature research, folk custom investigation	Interlocking lotus pattern: Lotus (integrity) + branch (continuity) → continuous integrity; Tin embroidery: Maze pattern → protection, warding off evil spirits
Extended Implication	Extended meaning based on cultural context	Semantic analysis, correlation derivation	Interlocking lotus pattern: Perpetual life, eternal auspiciousness; Tin embroidery: Maze pattern → smooth life, no disasters
Situational Implication	Semantic adaptation in specific usage scenarios	Scenario-based semantic adjustment	Interlocking lotus pattern: Wedding scene → happy marriage; Tin embroidery: Festival scene → ethnic identity, solemn ritual
Historical Narrative Implication	Historical memory carried by the pattern	ICH inheritor interviews, historical data analysis	Interlocking lotus pattern: None; Tin embroidery: Core patterns record the migration route of the Miao people, implying "not forgetting the hometown, ethnic continuity"

TABLE 4. Dimensions and Methods of Deep-Seated Culture Deconstruction

Deconstruction Dimension	Core Content	Deconstruction Method	Case Application (Han: Dragon and Phoenix Pattern; Ethnic Minority: Leishan Miao Embroidery)
Philosophical Thoughts	Concepts such as Yin-Yang and Five Elements, harmony between humans and nature	Cultural origin tracing, theoretical correlation	Dragon and phoenix pattern: Dragon (Yin) + Phoenix (Yang) → Yin-Yang balance; Leishan Miao embroidery: Symbiosis of animal and plant patterns and geometric patterns → harmony between humans and nature
Folk Beliefs	Totem worship, prayer rituals, etc.	Folk custom investigation, historical data analysis	Dragon and phoenix pattern: Ancient totem worship, later became an auspicious symbol; Leishan Miao embroidery: Frog pattern (reproductive worship), ox pattern (farming belief) → core folk beliefs of the Miao people
Social Systems	Hierarchical system, ethical norms, etc.	Social history analysis, context restoration	Dragon and phoenix pattern: Exclusive to the ancient imperial family, reflecting the hierarchical system; Leishan Miao embroidery: Different pattern combinations distinguish branches and identities, reflecting ethnic ethics
Historical Migration and Ethnic Identity	Migration memory, ethnic identity	Ethnic history research, inheritor interviews	Dragon and phoenix pattern: Inherited through written records and standardized craftsmanship, reflecting the continuity of Han culture; Leishan Miao embroidery: Patterns on long-skirt costumes record the westward migration route, becoming an important identification mark of Miao branches

Standardization: Transform the extracted forms into vector graphics and design specifications to ensure consistency in the application of different products;

Process Adaptation: Transform traditional crafts into modern achievable expressions. For example, the metallic texture of Jianhe Miao tin embroidery is restored on cultural

and creative products through bronzing technology and metallic color printing.

B. STAGE 2: IMPLICATION RECONSTRUCTION

Taking the deconstruction of middle-level implication as the core, achieve the goals of "semantic retention - con-

temporary translation of historical semantics - emotional resonance", focusing on exploring the contemporary value of ethnic minority patterns.

Semantic Retention: Retain core implications to avoid cultural distortion. For example, the implications of "ethnic continuity" in Leishan Miao embroidery and "prayer for blessings and prosperity" in Huaxi cross-stitch are always retained;

Contemporary Translation of Historical Semantics: Transform the historical narratives of ethnic minority patterns into contemporary semantics. For example, the "migration memory" of Miao embroidery is translated into "persistence of original aspiration" and "cultural inheritance" to adapt to the value pursuit of contemporary youth;

Emotional Resonance: Trigger emotional connections with the audience through symbol recombination. For example, combine the "rice ear pattern" of Huaxi cross-stitch with "workplace growth" to convey the emotion of "hard work leads to harvest".

C. STAGE 3: FUNCTION ADAPTATION

Combine product functional requirements to achieve the "double organic integration of symbols and functions - crafts and materials", avoiding symbolic formalization and process incompatibility.

Function Matching: Select translation methods according to product uses. For example, use simple linear patterns of Miao embroidery for stationery and textured process patterns for decorations;

Material Adaptation: Combine traditional crafts with modern materials. For example, the embroidery craft of Leishan Miao embroidery is suitable for canvas materials (backpacks), and the metallic texture of Jianhe tin embroidery is suitable for leather materials (notebook covers);

Cultural Value Alignment: Align traditional symbolic implications with modern user needs. For example, the "eternal auspiciousness" of interlocking swallowtail patterns is aligned with the "long-lasting use" function of mobile phone holders, while the "protection" implication of Miao embroidery maze patterns is integrated into the "wear-resistant" material selection of notebook covers
Usage Scenario Adaptation: Ensure that patterns do not affect functions. For example, Miao embroidery patterns on mobile phone cases avoid key areas, and bronzing technology does not affect the hand feel.

D. STAGE 4: CONTEXT INTEGRATION

Integrate into the contemporary design context to achieve the "balance between tradition and modernity - ethnicity and the public", enhancing the market acceptance and cultural communication power of products.

Style Integration: Combine Miao embroidery patterns with national tide and minimalist styles. For example, combine the cross-stitch patterns of Huaxi cross-stitch with minimalist styles to create products with simple and ethnic characteristics;

Technology Integration: Use modern technology to restore traditional crafts. For example, simulate the three-dimensional embroidery effect of Leishan Miao embroidery through 3D modeling and restore the cross texture of cross-stitch through digital printing;

Communication Context Integration: Adapt to contemporary communication scenarios and design cultural and creative products suitable for social media communication. For example, mobile phone holders and key chains with Miao embroidery patterns are both practical and topical, helping to spread ethnic culture.

V. EMPIRICAL DESIGN: TAKING INTERLOCKING SWALLOWTAIL PATTERNS, INTERLOCKING LOTUS PATTERNS, AND MIAO EMBROIDERY PATTERNS AS EXAMPLES

A. DESIGN THEME AND GOALS

The design theme is "Eternal Cultural Context", and the goal is to create a series of cultural and creative products with both cultural connotations and modern aesthetics, suitable for daily use, including three categories: stationery, home decorations, and clothing accessories.

B. SYMBOLIC DECONSTRUCTION PROCESS

1) Deconstruction of Interlocking Swallowtail Patterns

Surface Form: Extract basic "interlocking" units, with straight lines, two-dimensional continuous composition, and traditional colors of red and gold;

Middle-Level Implication: Core implication of "eternal auspiciousness, reunion and happiness", contemporary translation into "happy life, smooth career";

Deep-Seated Culture: Originated from pottery patterns in the ancient times, reflecting the philosophical thought of "harmony between humans and nature", symbolizing order and eternity.

2) Deconstruction of Interlocking Lotus Patterns

Surface Form: Extract basic units of lotus petals and tendrils, with curved lines, four-dimensional continuous composition, and traditional colors of green and pink;

Middle-Level Implication: Core implication of "perpetual life, integrity and elegance", contemporary translation into "growth and progress, quality life";

Deep-Seated Culture: Originated from Buddhist culture, reflecting the thought of "karma cycle", and later became a secularized auspicious pattern.

3) Deconstruction of Leishan Miao Embroidery Patterns

Surface Form: Lines are mainly fold lines and curves, with multi-unit symmetrical composition, and core colors of red, green, and blue;

Middle-Level Implication: Core implication of "ethnic continuity, prayer for blessings and warding off evil spirits", contemporary translation into "prosperous life, peace and smoothness";

Deep-Seated Culture: Originated from the totem worship and agricultural civilization of the Miao people, reflecting the philosophical thought of "harmony between humans and nature". Different pattern combinations are important identification marks of Miao branches, carrying historical memories in a non-literate context.

C. TRANSLATION DESIGN PRACTICE

1) Stationery Products (Notebooks, Bookmarks)

Form Extraction: Simplify the "interlocking" units of interlocking swallowtail patterns into minimalist lines, extract lotus petal outlines from interlocking lotus patterns, and recombine them into simple patterns;

Implication Reconstruction: The patterns on notebooks imply "recording growth, writing the future", and the patterns on bookmarks imply "accompanying reading, inheriting cultural context";

Function Adaptation: Print patterns on notebook covers and bookmark edges without affecting writing and use functions;

Context Integration: Adopt Morandi color series (gray-red, light green) to adapt to minimalist design styles, suitable for office and study scenarios.

2) Home Decorations (Throw Pillows, Decorative Paintings)

Form Extraction: Adopt textured processing for interlocking swallowtail patterns to present three-dimensional effects through embroidery craftsmanship; adopt parametric design for interlocking lotus patterns to generate irregular continuous patterns;

Implication Reconstruction: The patterns on throw pillows imply "family reunion, happy life", and the patterns on decorative paintings imply "elegant space, cultural atmosphere";

Function Adaptation: Choose soft fabrics for throw pillow patterns, and embroidery craftsmanship does not affect comfort; the size of decorative painting patterns is suitable for common wall proportions;

Context Integration: Combine with light luxury style, match with metal frames and velvet fabrics to enhance product texture.

3) Clothing Accessories (Scarves, Bracelets)

Form Extraction: Combine the double-needle lockstitch fold line patterns of Leishan Miao embroidery with interlocking swallowtail patterns and apply them to the front of canvas bags; integrate the cross-stitch patterns of Huaxi cross-stitch with the lines of interlocking lotus patterns and present them on scarves through digital printing;

Implication Reconstruction: Canvas bags imply "cultural companionship, personality expression", and scarves imply "ethnic customs, elegant temperament";

Function Adaptation: Use heavy canvas materials for canvas bags, reinforce pattern areas with embroidery craftsmanship to be durable and not easily deformed; use lightweight

silk materials for scarves, with soft printing colors, suitable for various outfits;

Context Integration: Integrate into national tide fashion style, match canvas bags with simple text "Eternal Cultural Context", and adopt gradient color transitions for scarves, balancing ethnic characteristics and modern aesthetics, suitable for daily wear and social media communication.

D. EVALUATION OF DESIGN EFFECTS

Invite 5 ICH research scholars, 3 Miao embroidery inheritors, 5 senior designers, and 30 target audiences (18-40 years old) to conduct evaluations. A new evaluation indicator "ethnic cultural restoration degree" is added, totaling five dimensions (see Table 5). To enhance empirical validity, a one-way ANOVA was conducted on the evaluation data, with results showing significant differences ($p < 0.05$) between groups, confirming that score variations are not due to chance.

VI. CONCLUSIONS AND PROSPECTS

A. RESEARCH CONCLUSIONS

- 1) This paper constructs a three-level symbolic deconstruction model for textile patterns, clarifying the analytical logic from fabric structure and motifs to their underlying cultural connotations, thereby providing a systematic tool for the creative inheritance of textile ICH symbols
- 2) Proposes a four-stage translation method of "form extraction - implication reconstruction - function adaptation - context integration", forming a complete closed loop from symbolic deconstruction to design practice, solving the problems of insufficient excavation of cultural connotations and unsystematic translation methods in current ICH cultural and creative design
- 3) Verifies the feasibility of the method through empirical design, and the design results are recognized by scholars, designers, and audiences, providing an operable practical paradigm for ICH cultural and creative design.

B. FUTURE PROSPECTS

- **Expand Research Objects:** Expand the scope of ICH elements from traditional patterns to craft techniques (such as embroidery stitches, ceramic glazes) and folk symbols (such as solar term symbols, ritual props), constructing a more comprehensive ICH symbolic deconstruction system;
- **Improve Evaluation System:** Introduce quantitative evaluation indicators, combine market feedback data (such as sales volume, repurchase rate) and user behavior data (such as usage time, communication frequency), to construct a "qualitative + quantitative" comprehensive evaluation model;
- **Technological Integration and Innovation:** By leveraging artificial intelligence and virtual reality, this research explores new digital translation paths for textile

TABLE 5. Evaluation Results of Design Effects (Full Score: 10 Points)

Evaluation Dimension	Scholar Score (Mean)	Inheritor Score (Mean)	Designer Score (Mean)	Audience Score (Mean)	Comprehensive Score	p-value
Cultural Connotation	9.2	9.3	8.8	8.5	8.9	0.032
Ethnic Cultural Restoration Degree	8.9	9.5	8.6	8.2	8.8	0.028
Visual Aesthetics	8.5	8.7	9.0	9.2	9.0	0.041
Functional Practicality	8.8	8.5	9.1	9.3	9.1	0.037
Market Acceptance	8.3	8.4	8.7	9.4	9.0	0.025

Note: One-way ANOVA confirms significant differences ($p < 0.05$) between groups, indicating non-random score variations.

ICH symbols, enabling the immersive visualization and intelligent reconstruction of traditional weaving techniques and fabric textures.

AUTHOR CONTRIBUTIONS

Guanhong Zhan designed, collected and analyzed the data, and drafted the manuscript. Guanhong Zhan conducted the study, critically revised the manuscript for important intellectual content, and gave final approval of the version to be published. Guanhong Zhan participated fully in the work, take public responsibility for appropriate portions of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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