


Bridging Time: A Dual Path Analysis of Chinese Furniture Culture from Diplomatic Exchange to Digital Narratives

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The dual pathways of historical legacy and contemporary digital perception were explored relative to cultural communication in Chinese furniture. An interactive analytical framework was established, linking material artifacts with evolving audience cognition. Historically, Ming and Qing furniture shaped European styles such as Rococo and Chippendale, serving as cultural emblems in diplomatic exchanges. However, symbolic depth was often lost in translation. The “New Chinese Style” furniture continues this legacy, yet it encounters new challenges in global online markets. Through natural language processing (NLP) of user reviews from Wayfair, consumer perceptions were analyzed in this work across three cultural layers: tangible, behavioral, and intangible. Results revealed a perceptual asymmetry: international users consistently value material authenticity and visual beauty but tend to overlook craftsmanship and cultural narratives. Notably, attention to cultural narrative declined significantly, while emotional resonance and functional attributes increased, reflecting a shift in user priorities toward lifestyle alignment. To reconcile these gaps, a responsive strategy was proposed that includes: (1) dual semantic encoding—preserving traditional design forms while reframing meanings for global relevance; (2) multi-modal visualization—leveraging AR, process videos, and interactive interfaces to convey craftsmanship; and (3) culturally segmented design—to align diverse audience motivations with tailored messaging.

DOI: 10.15376/biores.20.4.9008-9019

Keywords: Chinese furniture; Cultural communication; E-commerce reviews; Ming furniture; Diplomatic gifts

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INTRODUCTION

Furniture, as a core embodiment of material culture, has long mediated cross-civilizational dialogue. From lacquered cabinets traded along the Silk Road to the contemporary global furniture brands, Chinese furniture has not only functioned as utilitarian design but also carried encoded values—through craftsmanship (tangibility), stylistic form (symbolism), and philosophical ideology (spirituality) (Appiah-Kubi *et al.* 2021; Cui *et al.* 2021; Sun *et al.* 2022; Luo and Sangiamvibool 2024). In the evolving landscape of globalization and digitalization, its cultural transmission follows two interconnected trajectories: the continuity of historical tradition and the reconstruction of meaning through digital consumption (Mazurkewich 2017). Historically, Ming and Qing furniture shaped the visual grammar of Western Rococo and Chippendale styles and served

as semiotic tools in diplomatic exchange (Clunas 2004). Yet the symbolic essence—rooted in Confucian cosmology, craftsmanship ethics, or imperial semiotics—was often decontextualized. In contrast, today’s e-commerce platforms reframe Chinese furniture through user-generated discourse, where emotional utility and visual attraction dominate product narratives (Song *et al.* 2019). This phenomenon invites a critical inquiry: How do cultural values, once shaped by diplomacy and tradition, evolve or dissolve in digital consumer spaces? To explore this question, a dual-pathway analysis framework is proposed in this work. It is not merely a parallel comparison but also an interactive model. It investigates how historical legacies of Chinese furniture shape, contrast with, and inform contemporary perceptions. This framework has two pillars:

- (1) a cultural-historical analysis of furniture as symbolic and diplomatic media, emphasizing transmission through form, material, and ritual context; and
- (2) an empirical examination of digital consumer interpretation via natural language processing (NLP) across three cultural layers—tangible (materials, form), behavioral (function, craftsmanship), and intangible (aesthetics, narrative, emotion).

This study reveals a paradox at the heart of global cultural export: while the material appeal of Chinese furniture—such as wood grain or bamboo structure—remains strong across time, deeper dimensions including craftsmanship and philosophical meaning are increasingly muted in online discourse. These gaps expose not only perceptual ruptures but also the challenge of cultural continuity in algorithm-governed platforms.

Methodologically, this research advances a novel approach by embedding the Three-Layer Cultural Model into NLP-driven design communication analysis. We construct a hybrid semantic architecture that integrates domain-specific word embeddings with culturally anchored seed lexicons (Wang 2021; Bojanowski *et al.* 2017). This enables nuanced identification of implicit meanings (*e.g.*, Zen minimalism, mortise-and-tenon metaphors) often lost in generic keyword-based models (Yi *et al.* 2024; Zhou 2020). In doing so, a theoretical and practical foundation for cultural strategy is provided—one that acknowledges semantic dilution online and proposes responsive mechanisms such as dual encoding, multi-modal storytelling, and design segmentation to bridge cultural legacies with global digital audiences.

Historical Pathway: Transcultural Trajectories of Chinese Furniture

Ming furniture and the rise of cross-cultural design (16th–18th Century)

Chinese furniture from the Ming and Qing dynasties did not merely serve functional needs; it embodied refined aesthetic philosophies and became a vector of cultural soft power.

Table 1. Core Examples of Chinese Furniture’s Influence on Western Design (16th–18th Century)

Domain of Influence	Chinese Elements	Western Adaptation	Representative Works
French Furniture Design	Slender Ming forms, Qing lacquer art	Rococo curved legs, bird-and-flower motifs	La Toilette by François Boucher (Chinese screen)
British Furniture Design	Openwork backs, straight-leg frames	Chippendale chairs with silk cushions	The Gentleman and Cabinet Maker’s Director (1754)
Decorative Techniques	Inlay, lacquer, joinery	Pagoda tops, imitation lacquer, bamboo forms	Chippendale chinoiserie bed sketches

Between the 16th and 18th centuries, Chinese furniture entered European consciousness alongside porcelain and silk—commodities that represented both exotic luxury and cultural sophistication. Particularly influential were the restrained elegance of Ming forms and the elaborate surface treatments of Qing lacquerware, which profoundly shaped European design vocabularies (Wang 2021; Shen 2024).

The Rococo style in France borrowed the lightness and rhythmic curvature of Ming design. For instance, the “drum-leg” structure was absorbed into “ladies’ chairs” and decorative folding screens (Fig. 1-a). These design elements were visually retained while often stripped of their original philosophical and ritual significance (Schäfer 2015; Cheang 2007).



Fig. 1. The influence of Chinese furniture on western design: a. Qing-style lacquer work and decorative motifs featuring birds and flowers; b. Thomas Chippendale's Chinese chairs

In Britain, Chippendale institutionalized Chinese visual codes in his furniture design manuals. His reinterpretations—through chinoiserie bed frames and openwork seating—codified a hybrid aesthetic where form traveled freely but meaning dissipated (Fig.1-b). This form-before-meaning dynamic laid the groundwork for centuries of semiotic decontextualization (Bellemare 2014; Wang 2020a).

Reframing heritage in contemporary global design

Since the early 2000s, the “New Chinese Style” has emerged not as replication but as a culturally strategic reconstruction of traditional aesthetics. By fusing Ming-inspired silhouettes with modern minimalism, designers reposition Chinese furniture within a global design narrative (Kikuchi 2011). The Christie’s exhibition *The Pine Pavilion* (2016), celebrating huanghuali pieces, exemplifies this revival, reframing Chinese furniture as both collectible art and design inspiration (Shen 2024).

Contemporary designers such as Shao Fan and Zhu Xiaojie have pioneered this hybridity. Their works combine mortise-and-tenon joinery with Bauhaus principles of simplicity and function, forging what might be called a philosophical minimalism. These efforts reflect a larger movement: from exporting forms to actively shaping meanings through globally legible narratives—where Zen, for example, operates as both an aesthetic marker and a marketing construct (Wong 2011; Zhang 2022).

The Semiotic Significance of Diplomatic State Gifts

Diplomatic furniture as semiotic messaging

Imperial Chinese furniture also functioned as a political symbol in diplomatic contexts. The Qing court’s pieces embodied state ideology, projecting legitimacy through

coded material choices and ritual form. Objects such as the jiaoyi (folding chair) or pingfeng (screen) were not only functional but metaphysical devices of sovereignty and cosmic order. Their symbolism—such as “sitting in the first chair”—reflected the emperor’s centrality in heaven-human hierarchies (Galvany 2015; Cao 2020).

However, once exported, these artifacts were aestheticized in Europe. Qing screens, rich in dragon or phoenix iconography, were recontextualized in Versailles as decorative panels devoid of imperial gravitas. This phenomenon illustrates a key pattern: semiotic dislocation, where material form survives, but symbolic depth is culturally dissolved (Zhou 2020; Thomas 2009).

Dual semantic encoding in modern state gifts

Today, furniture in diplomatic contexts continues to encode national values, but with greater intentionality toward dual semantic decoding. Traditional motifs such as dragon-head knobs or mortise-and-tenon joints are retained for visual familiarity, while their meanings are adapted to resonate with contemporary global themes such as sustainability, ergonomic design, or ecological harmony (Table 2) (Wang *et al.* 2025; Kidd 2022).

Table 2. Dual Semantic Decoding of Diplomatic Furniture Elements

Design Element	Traditional Meaning	Global Interpretation	Adaptation Strategy
Peony motif	Prestige, imperial wealth	Vitality, natural elegance	Simplified coloring and pattern modernization
Folding chair	Authority, inspection mobility	Portability, pragmatic function	Streamlined silhouettes with neutral aesthetics
Mortise-Tenon Joint	Cosmic harmony (tian ren he yi)	Eco-design, craft innovation	Exposed joints as design feature and sustainability cue

As seen in Hans Wegner’s “China Chair”—a modern homage to Ming horseshoe-back seating—form becomes a carrier for newly constructed meanings. This design logic shows that the export of Chinese furniture has evolved from passive objectification to active symbolic reframing.

Cultural Legacy and Global Resonance: A Reflexive View

The trajectory of Chinese furniture from imperial workshops to e-commerce platforms reveals a deep pattern: design becomes diplomacy when meanings are made transferable. In the past, Chinese furniture’s appeal rested on formal elegance; today, its cultural export potential hinges on how traditions are rearticulated in global design grammars (Thomas 2009; Smethurst 2015).

Rather than mourn the loss of original symbolism, this paper embraces a pragmatic-culturalist view: Chinese furniture can act as a bridge not by preserving fixed meanings, but by enabling semantic flexibility across time and audience. This aligns with the broader thesis of the paper: that effective cultural communication today relies not on static preservation, but adaptive reinterpretation grounded in both heritage and market fluency.

EXPERIMENTAL DESIGN AND DATA PIPELINE

Data Collection

To investigate how international consumers perceive Chinese-style furniture in the digital marketplace, we collected user-generated content (UGC) from the global e-commerce platform Wayfair. Product reviews were scraped using the search terms “Chinese furniture” and “Zen style furniture”—terms reflective of both traditional cultural identity and modernized marketing language. While “Zen style” may originate from Western consumer discourse rather than authentic vernacular usage, its inclusion reflects the contemporary framing of Chinese aesthetics in global retail platforms, aligning with issues of potential semantic inflation.

A total of 15,783 raw reviews with timestamps were extracted using the Yingdao RPA automation tool. After data deduplication, language filtering (removing non-English entries), and validity screening, 13,341 clean reviews were retained. This dataset forms the empirical basis for tracing consumer interpretations across symbolic, functional, and emotional dimensions.

Data Preprocessing and Normalization

To prepare the data for semantic modeling, a multi-stage preprocessing pipeline was applied:

- Text Cleaning: Using Python’s `re` module, all URLs, punctuation, numerals, emojis, and anomalous characters were stripped from the review corpus.
- Tokenization and Lemmatization: The NLTK toolkit was used to segment sentences, remove stop-words, and normalize words to their base forms (*e.g.*, “crafted” → “craft”) (Lazzez *et al.* 2024).
- Data Structuring: The Pandas library was employed to align review texts with their respective metadata, including timestamps, product IDs, and rating scores (not used in the final model, but retained for future correlation analysis).

These steps ensured semantic consistency and removed noise, enabling robust cultural signal extraction.

Word Embedding Architecture

To model latent semantic associations in the reviews, a Word2Vec Skip-Gram model was trained using Gensim 4.3.3. Hyperparameters were optimized to capture micro-level contextual meaning (Peñuela *et al.* 2023):

- Vector dimensions: 300
- Context window: 3
- Minimum frequency: 2
- Training epochs: 50
- Fine-tuning passes: 10
- Negative sampling (*k*): 5
- Subsampling rate: 1e-5

To enhance cross-cultural lexical sensitivity, the authors integrated pre-trained FastText embeddings (wiki-news-300d-1M) for core tokens (*e.g.*, Zen, bamboo, tenon, harmony). These were embedded through a vector-locking mechanism, ensuring semantic

integrity while still adapting to domain-specific usage patterns—a critical step for cultural analysis, as per Reviewer A’s concern regarding the connection between technique and interpretability (Pan *et al.* 2021).

Cultural Feature Extraction: Three-Layer Model Application

Feature extraction followed the Three-Level Theory of Culture (material, behavioral, ideational) to bridge technical analysis with anthropological constructs. Based on expert interviews and cultural semiotics literature, a Seed Lexicon was developed comprising ~150 core Chinese cultural tokens (*e.g.*, craftsmanship, mortise, Confucian, Zen, ritual, aesthetics).

Using the trained Word2Vec vectors, each seed was expanded *via* cosine similarity (> 0.65 threshold) to capture contextually related terms. This produced a semantic feature field for each of the nine subcategories under the three levels.

To compute cultural intensity, a Cultural Perception Scoring Function was defined as:

$$Score_j^c = \sum_{w_i \in c} f(w_i) \cdot \max_{s_k \in S_j} \text{sim}(w_i, s_k) \quad (1)$$

where $f(w_i)$ is a frequency of term w_i in review corpus; $\text{sim}(w_i, s_k)$ is a cosine similarity between term w_i and cultural seed s_k ; and S_j is seed set for cultural category j .

This formula produced a per-category perception score, quantifying user engagement with different cultural dimensions.

Longitudinal Trend Analysis (2020 to 2025)

To capture temporal shifts in cultural perception, reviews were grouped by calendar year, producing six time slices (2020–2025). Each review was timestamped and validated for format accuracy. For each cultural category, a frequency-weighted average score was computed annually, producing nine cultural trendlines.

This enabled detection of perceptual drift, such as the decline in narrative depth (*e.g.*, fewer mentions of Confucian, symbol, hierarchy) and the rise in affective engagement (*e.g.*, peaceful, calm, comfort). These trends align with broader global movements in design—emphasizing emotion, sustainability, and hybrid identities (Peñuela *et al.* 2024; Lazzez *et al.* 2024).

RESULTS AND DISCUSSION

Cultural Feature Perception: Hierarchies and Gaps

To assess how international consumers engage with cultural elements in Chinese furniture, weighted perception scores were computed across three cultural levels: tangible (material/form), behavioral (function/craft), and intangible (narrative/emotion). The findings reveal both clear preferences and structural blind spots—particularly in how digital environments mediate cultural visibility.

Tangible layer: Material resonates, form underexplained

The most salient cultural feature was Material & Texture, with the highest score (10,445.08), underscoring a strong global appreciation for tactile authenticity—*e.g.*, wood grain, bamboo, and rattan. This aligns with sustainability and sensory-driven design preferences. However, Form & Shape (4,524.25) and Color Scheme (4,146.47) scored

significantly lower, suggesting that while users visually register shapes and colors, they often fail to decode their symbolic meanings, such as Confucian symmetry or earth-element color theory (Pan *et al.* 2021). Tangibility alone is not enough—symbolic literacy must be cultivated, perhaps through visual cues and brief cultural annotations on product pages.

Behavioral layer: Functional usefulness outshines craft legacy

While Functionality scored solidly (6,145.36), confirming consumer interest in modularity and ergonomic design, Craftsmanship was the lowest-scoring feature across all dimensions (1,218.00). This is not necessarily due to a lack of interest but rather a perceptual void: online platforms rarely visualize joinery techniques, handwork, or design rationale, leading to invisibility by omission. Craftsmanship may be “expected but unspoken.” Its absence in user reviews could stem from assumed quality or media failure to translate technique into narrative. There is an opportunity to augment product listings with short videos, tool diagrams, or cross-sectional visuals to make hidden craftsmanship legible (Peñuela *et al.* 2023).

Intangible layer: Deep culture persists—but selectively

Both Aesthetic Taste (7,408.79) and Cultural Narrative (6,806.01) received strong recognition, suggesting that symbolic motifs (*e.g.*, mountains, plum blossoms) and philosophical echoes (*e.g.*, harmony, elegance) still resonate. Emotional Resonance (5,359.35) scored moderately but increased over time (see trend analysis), indicating growing engagement with lifestyle-aligned values such as serenity, heritage, and comfort (Table 3). While deeper philosophy may be fading, emotional analogues—comfort as harmony, minimalism as Zen—still enable indirect narrative absorption.

Table 3. Cultural Feature Scores and Interpretive Highlights

Cultural Layer	Average Score	Interpretive Insight
Outer Tangible Layer	6,381.93	High material salience; form/color lacks cultural anchoring
Mid Behavioral Layer	3,998.45	Functionality visible; craftsmanship occluded by digital opacity
Inner Intangible Layer	6,524.72	Cultural aesthetics valued; emotional resonance growing

Five-Year Trend Analysis of Cultural Feature Perception (2020 to 2025)

To explore evolving user engagement with cultural features of New Chinese Style furniture, a longitudinal analysis was conducted on 13,341 e-commerce reviews, segmented by year (2020 to 2025). Frequency-weighted average scores were calculated across nine semantic dimensions, corresponding to the three cultural layers (tangible, behavioral, intangible) (Fig. 2). The results reveal shifting patterns in consumer priorities that reflect deeper transformations in global cultural consumption.

Tangible layer: Material constancy, form fragility

Among all dimensions, Material & Texture remained the most prominent feature across all five years, confirming sustained user interest in tactile authenticity and natural aesthetics (*e.g.*, wood grain, bamboo, rattan). A small rebound in 2025 suggests renewed attention to ecological values and artisanal sourcing, potentially in response to broader sustainability discourses.

In contrast, Form & Shape showed steady growth from 2020 to 2024, followed by

a slight dip—possibly due to visual saturation or lack of interpretive context. Similarly, Color Scheme rose modestly, indicating slow but increasing engagement with palette-driven aesthetic choices. Yet both categories still trail Material in salience, highlighting that while visual design is noticed, its cultural meaning remains under-articulated in platform narratives.

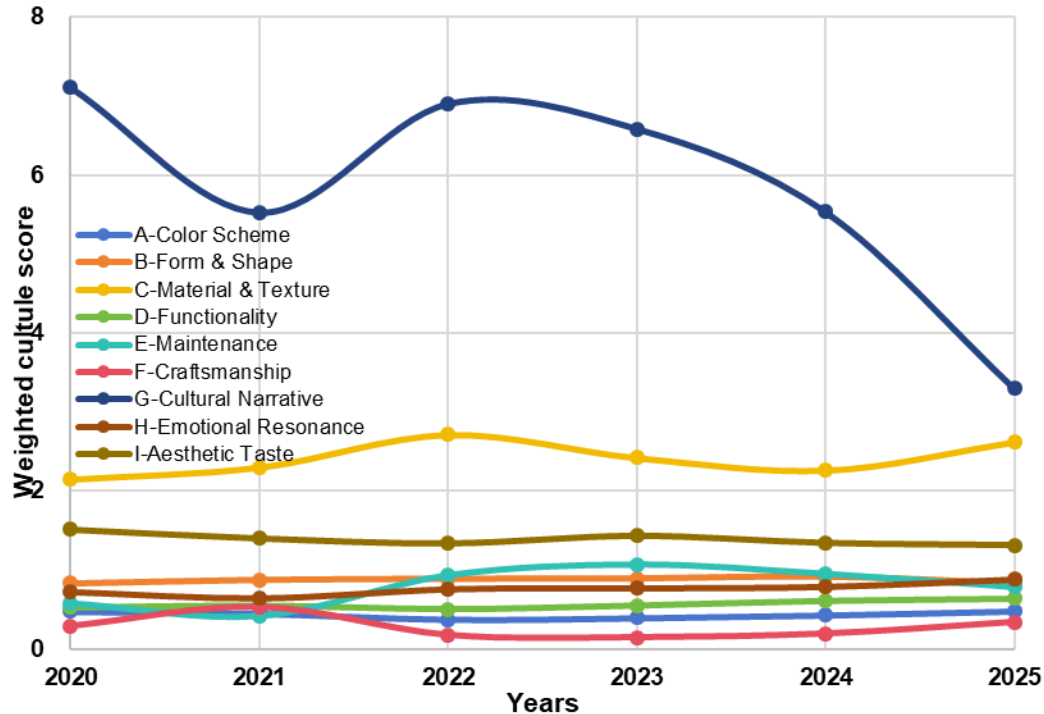


Fig. 2. Trends of cultural features in user reviews (2020 to 2025)

Behavioral layer: Functional rise, craftsmanship tension

Functionality demonstrated a gradual upward trend, reflecting consumer demand for modularity, compact design, and ergonomic solutions suitable for diverse living environments. Maintenance, however, fluctuated considerably—peaking in 2023 before tapering—suggesting responsiveness to specific product types or temporary attention spikes (e.g., pandemic-related concerns about cleaning or durability).

Most notably, Craftsmanship followed a V-shaped trajectory: attention declined from 2020 through 2023, reaching its lowest point, before rebounding in 2024 to 2025. This pattern indicates a latent but resilient interest in artisanal quality. The earlier decline likely stems from platform limitations in visualizing joinery or hand-carving, as well as consumer expectation of baseline quality in a competitive global marketplace.

Intangible layer: Narrative decline, emotional integration

The most dramatic trend was the steep decline of Cultural Narrative, which fell from a weighted score of 7.10 in 2020 to 3.30 in 2025. This erosion points to what may be termed “symbolic fatigue”—a waning novelty effect as cultural motifs become aestheticized but unmoored from historical or philosophical context. Meanwhile, Emotional resonance increased steadily, underscoring a broader shift toward psychological comfort, identity affirmation, and aesthetic well-being. Aesthetic Taste remained a consistent anchor, reflecting stable user appreciation for elegance, balance, and design.

clarity.

These five-year patterns reveal a core tension in global cultural transmission: while material and emotional qualities of Chinese furniture are increasingly valued—resonating with wellness-driven lifestyles—the deeper symbolic and philosophical dimensions are fading due to a lack of interpretive support. As a result, although New Chinese Style furniture retains strong visual and emotional appeal, its cultural richness risks being flattened unless actively recontextualized through digital storytelling, visualization tools, and audience-specific narrative strategies.

Dual Pathways of Dialogue: Bridging Historical Legacies and Digital Challenges

Chinese furniture has historically operated along a dual axis—as both a functional artifact and a cultural emblem—mediating civilizational exchange from 16th-century European elite collections to its present role in global design diplomacy (Bellemare 2014; Cheang 2007; Wang 2020b). Early Western engagements with Ming and Qing aesthetics exemplified a “form-before-meaning” pattern: visual features like curves, lacquer, and joinery were appropriated into Rococo and Chippendale styles, yet stripped of Confucian and cosmological connotations (Thomas 2009; Shen 2024). Over time, this ornamental appropriation evolved. Contemporary exhibitions (e.g., Christie’s Pine Pavilion, Salone del Mobile) and designers such as Shao Fan and Zhu Xiaojie now reinterpret classical proportions through modernist frameworks—merging traditional craftsmanship with global design language (Wong 2011; Zhang 2022). This shift reflects a renewed agency: no longer a passive exoticism, Chinese design now participates in shaping international aesthetic discourse.

However, the digital retail context poses fresh challenges. As reflected in semantic analysis of 13,341 e-commerce reviews, users emphasize Material & Texture and Emotional Resonance, while features such as Craftsmanship and Cultural Narrative are under-recognized. The dual pathway framework must do more than juxtapose history and e-commerce—it must explain the interaction between them. Our findings reveal this gap: historical forms attract attention, but meanings lose clarity in digital environments. Concerns about symbolic fatigue and the diluted relevance of terms like “Zen-style furniture” are supported by the sharp decline in cultural narrative engagement (from 7.10 in 2020 to 3.30 in 2025), even as emotional and functional dimensions rise. This reflects what we term cognitive flattening—where symbolic richness is reduced to aesthetic shorthand.

To address this disconnect, a multi-tiered strategy is proposed:

- (1) Dual Semantic Encoding—preserving traditional forms while reinterpreting meanings through globally accessible narratives (e.g., harmony, sustainability);
- (2) Multi-Modal Visualization—AR/VR, 3D modeling, and high-resolution videos to render invisible craftsmanship like mortise-and-tenon joinery visible;
- (3) Material Messaging—emphasizing ecological and health aspects of bamboo, rosewood, and rattan to align with global wellness values;
- (4) Culturally Responsive Segmentation—designing differentiated product lines (aesthetic-led, function-driven, emotionally themed) tailored to consumer motivations, including those identified by Reviewer B (e.g., historically inspired offerings for niche interest groups).

Ultimately, effective cultural dissemination in the digital age demands more than historical continuity—it requires strategic mediation, translating enduring heritage into emotionally resonant, visually accessible, and narratively meaningful design experiences.

CONCLUSIONS

1. Chinese furniture serves as a cultural interface, historically shaping Western design through the aesthetic influence of Ming and Qing dynasties, and currently evolving into a global design language through the emergence of the New Chinese Style. This trajectory reflects not only material transmission but also the reinterpretation of design values across temporal and cultural boundaries.
2. International consumer engagement is stratified: while material authenticity and surface aesthetics are highly appreciated, deeper cultural dimensions—such as craftsmanship, historical symbolism, and philosophical connotation—remain under-recognized in digital retail contexts. This asymmetry stems less from consumer disinterest and more from a lack of mediated visibility and narrative translation online.
3. Longitudinal analysis reveals a perceptual shift: cultural narratives are in decline, while emotional resonance and functional adaptability are increasingly valued. This signals a transition from heritage-based appreciation to lifestyle-oriented consumption—where products are judged not only by tradition, but by their emotional alignment with everyday living.
4. Effective cultural export today requires dual semantic encoding: preserving key formal elements (*e.g.*, joinery, motifs, silhouettes) while recoding their meanings in globally relevant narratives—such as sustainability, wellbeing, or personal identity. Chinese furniture design must actively mediate between tradition and modernity, rather than passively rely on cultural familiarity.
5. Strategic communication methods are essential: deploying multi-modal visualization (*e.g.*, AR/VR demonstrations, process videos), differentiated design segmentation, and culturally responsive storytelling will enhance visibility of underperceived features—particularly craftsmanship—and broaden international resonance. These approaches are accessible not only to major brands but also to SMEs and artisan-led studios through narrative agility and digital tools.

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Article submitted: June 26, 2025; Peer review completed: July 19, 2025; Revised version received: July 26, 2025; Accepted: August 7, 2025; Published: August 25, 2025.
DOI: 10.15376/biores.20.4.9008-9019