

Inheritance And Innovation of Chinese Traditional Furniture Culture from the Contemporary Furniture Design Styles

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Abstract

This study explores the cultural heritage of traditional Chinese furniture and its integration with contemporary design, focusing on sustainable development. Historical analysis, literature review, and surveys emphasise the importance of incorporating ecological principles across the furniture's life cycle. By merging traditional cultural elements with modern materials and technology, the research establishes a framework for eco-friendly furniture design. This approach preserves cultural heritage while promoting innovation, guiding the furniture industry towards sustainability and environmental responsibility.

Keywords: *Furniture Design, Traditional culture, Innovation, Fuzzy comprehensive evaluation method*

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DOI: <https://doi.org/10.21834/e-bpj.v10iSI29.6918>

1.0 Introduction

Chinese traditional furniture represents a significant component of China's material and spiritual heritage, embodying unique aesthetic ideals and philosophical depth. At the 2023 Symposium on Cultural Inheritance in Beijing, General Secretary Xi Jinping remarked that "Chinese-style modernisation endows Chinese civilisation with modern strength, and Chinese civilisation endows Chinese-style modernisation with deep heritage" (Yuewen, Zaoqun & Bing, 2023). Over thousands of years, the Chinese civilisation has developed a distinctive system of spiritual concepts, value orientations, and behavioural norms, shaping a unique and enduring way of thinking. Characterised by continuity, adaptability, and cultural depth, this mindset influences creative fields such as furniture design.

Drawing upon longstanding wisdom and craftsmanship, Chinese artisans developed a distinctive furniture system reflecting Chinese civilisation's profound continuity (Zhenhan, 2011). As noted by French scholar Odilon Roche, "The latest discovery in the field of art is the furniture of ancient China," underscoring its significance in global art history. As a cultural artefact, furniture embodies both material function and spiritual expression, and is closely tied to its time's political, economic, and aesthetic contexts (Minxiu, 2003).

In contemporary practice, integrating traditional Chinese elements into furniture design reinforces cultural identity and creates new avenues for innovation. By combining artistic heritage, modular principles, and whole life cycle theory within a sustainable design framework, designers can develop furniture systems that are both culturally rooted and forward-looking, contributing to ecological, social, and cultural sustainability.

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1.1 Research Problem

Despite this rich heritage, contemporary furniture design often struggles to integrate traditional cultural elements while effectively meeting modern sustainability requirements. The challenge lies in balancing cultural preservation with innovation to create culturally meaningful and environmentally responsible furniture.

1.2 Research Aims and Objectives

This study explores integrating Chinese traditional furniture culture with contemporary design principles, focusing on sustainable development. The specific objectives are:

1. To identify key Chinese traditional furniture culture elements that can be meaningfully incorporated into contemporary design.
2. To investigate the relationship between traditional cultural elements and modern sustainability principles in furniture design.
3. To establish a comprehensive framework for evaluating the cultural inheritance and innovation in contemporary furniture design.

1.3 Research Significance

This research contributes to a modern furniture system with unique national cultural characteristics. By combining artistic innovation, modular design, and whole life cycle theory within a green eco-cultural integration framework, this study offers practical guidance for furniture designers seeking to honour cultural heritage while embracing sustainable development principles.

2.0 Literature review

2.1 Culture and furniture culture

The term "culture" has existed in early vocabulary worldwide. In cultural anthropology, it was first defined by British anthropologist Edward Burnett Tylor in 1871. He stated, "Culture or civilisation, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, custom, and any other capabilities and habits acquired by man as a member of society" (Marett, 1936). Analysing the human-furniture-society-nature (environment) system, the relationship between furniture and nature is examined from the horizontal spatial axis, analysing the material and aesthetic relationship between furniture and the natural environment. On the other hand, the relationship between furniture and society is discussed along the vertical axis, considering the impact and influence of traditional culture and contemporary attributes on furniture style and aesthetics (Jifeng, 2009). The formation of the aesthetic cultural mechanism of furniture cannot be separated from the relationships between various consciousnesses and facts. It requires a systematic organisational framework of various components.

The most important viewpoint of Chinese scholars on the definition of "culture" is that "culture is a complex of different forms of traits created by human beings" (Yunjie, 1996).

"In Chinese culture, furniture holds significant importance. As a typical form of craftsmanship, Chinese-style furniture exhibits distinctive characteristics in terms of materials, craftsmanship, techniques, and aesthetics" (Jifeng, 2009).

Overall, there are significant differences between traditional and modern furniture cultures in terms of style, design concepts, use of materials, and manufacturing methods, and each culture has its unique characteristics and values. Chinese furniture culture has a rich and colourful history, reflecting the unique charm of traditional Chinese culture. Furniture is not only a practical living thing but also a carrier of artistic expression and cultural inheritance. Through the study and heritage of Chinese furniture culture, the perfect function and form of furniture not only changed people's living habits and regulated people's manners and etiquette but even became the physical manifestation of the political order, economic strength, philosophical thinking, aesthetic level, folk customs and other aspects of a specific historical period. In a sense, Chinese furniture history is a thematic cultural history. On the one hand, it testifies to the whole history of China (Association, 2022).

2.2 Contemporary furniture design

Contemporary furniture has unique beauty and value with exquisite craftsmanship and innovative design. This furniture is not only the real things of life, but also the crystallisation of art and craft, highlighting the essence of contemporary furniture design. Since the mid-1990s, 1990s a definable Movement in contemporary Chinese furniture design has been growing and evolving, and has now reached such creative critical mass that it is possible to speak of it enjoying a 'moment'. The exceptional quality and innovation of the furniture associated with what has already become known as 'New Chinese Design' will undoubtedly make a significant reappraisal of contemporary Chinese design in general" (Fiell, Fiell & Zheng, 2019). Sustainability has also become a central theme in contemporary furniture design. Chai, Wang, and Chen (2020) discuss how traditional Chinese sustainable ideologies, such as the concepts of "Nature and Humanity" and "Using wisely," can inform modern furniture design practices, promoting environmental harmony and resource efficiency.

2.3 Whole lifecycle

As a biological concept, the life cycle refers to the whole process of an organism with life characteristics from birth, growth, maturity, and ageing until death. With the development of the life cycle theory, the theory was introduced into economics and management, and the product life cycle theory was formed. In his book, *International Investment and International Trade in the Product Cycle*, Professor Raymond Vernon of Harvard University proposed the product life cycle theory in 1966. With solid adaptability and vast influence, Vernon's product life cycle theory is pioneering in studying the industrial life cycle (Vernon, 1966). A typical product life cycle includes

four stages: introduction, growth, maturity, and decline (Xiao, 2010).

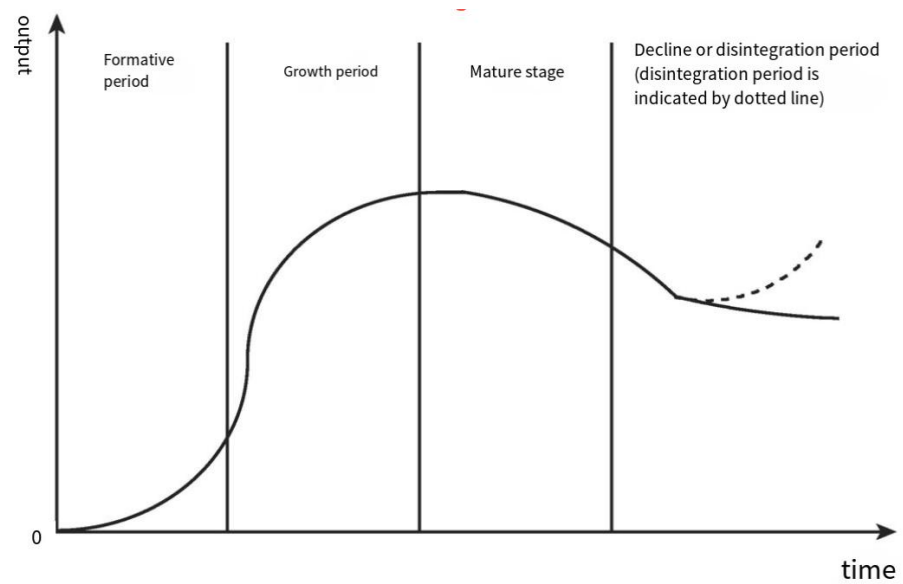


Figure 1. The general shape of the product life cycle
(Source: *International Investment and International Trade in the Product Cycle*, 1966)

Wang Xiaoxue's paper "Multifunctional Furniture Design Based on the Theory of Product Lifecycle," proposes enhancing the sustainability of furniture throughout its entire lifecycle. This involves designing structures based on modular concepts and employing the systematic design planning of TRIZ theory. Attention is given to the diverse symbiotic states of furniture and the cultural ecological influences, utilising high technology and ethical design principles to imbue furniture products with excellent eco-friendly characteristics along their complete life axis. This approach aims to contribute to the sustainable energy of multifunctional furniture throughout its lifecycle.

By employing comprehensive analysis tools for recycling in the initial design phase, products' environmental impact can be minimised. Throughout the entire product lifecycle, a focus is on optimising the use of resources and energy, aiming to achieve product functionality with minimal energy consumption (W. Xiaoxue, 2022).

Examining the design, craftsmanship, usage, and maintenance of traditional ancient furniture reveals some elements relevant to the whole lifecycle theory:

Material Selection and Harvesting: Traditional ancient furniture commonly used natural materials like rosewood and nanmu. Artisans considered wood texture, durability, and availability factors when selecting materials.

Structural Craftsmanship: Traditional furniture was crafted with mortise-and-tenon joints, without nails or screws. Carving and Decoration featured intricate carvings and unique decorations, adding artistic value and durability.

Usage Stage: Ancient furniture was designed to stand the test of time, reflecting concerns for durability and performance.

Although the complete lifecycle theory was not explicitly formulated in ancient times, traditional furniture shows considerations aligning with various phases. These insights inspire contemporary design for sustainability and a holistic understanding of the product lifecycle. The "whole lifecycle" concept optimises resources, reduces costs, ensures quality, and addresses environmental impacts. Material Selection focused on natural and sustainable materials, aligning with the resource-gathering phase. Structural Craftsmanship with mortise-and-tenon joints emphasised durability and ease of maintenance, similar to product design and manufacturing stages—carving and Decoration added value during design and production, echoing the full lifecycle theory. The longevity of ancient furniture reflects usage stage concerns. Maintenance and Repair of valuable ancient furniture indicate considerations for sustainability across the entire product lifecycle.

3.0 Methodology and Findings

3.1 Historical Documentation Research Method

The historical method takes documented factual statements as known statements, then uses "interpretive" techniques to derive relevant explanatory statements, and concludes by eliminating false explanatory statements from the statements through the process of "falsification." In this case, the documented factual statements are used as the antecedent or antecedent of the known premise statements. Then, various logical methods are used for the argumentation process to obtain the desired results of the study (Weihwa, 2005).

In studying traditional Chinese furniture culture, two principal approaches can be taken. Firstly, one might directly analyse the outcomes and causes of furniture culture, employing logical methods combined with historical information for causal reasoning. This

approach involves tracing the results back to the causes, necessitating comparison with historical documents to ensure the accuracy of these conclusions. For instance, examining changes in furniture styles during a specific period and the underlying social and economic factors. For example, The Thesis of Yuan Jindong" Research on Ming-style Furniture System"(2018). Many relevant historical documents at home and abroad are systematically analysed and commented on, and the specific situation in the current research field of Ming-style furniture is analysed. Relies on factual accounts recorded in documents as known statements, using these accounts as either antecedents or consequents in logical argumentation to obtain the necessary research results (Y. Jindong, 2018).

3.2 Analytic Hierarchy Process (AHP)

The Analytical Hierarchy Process (AHP) is a method for organising and analysing complex decisions using math and psychology. Thomas L. Saaty developed it in the 1970s and refined it since then(Saaty, 1988).

"The AHP method, which was formally proposed by United States operations researcher Thomas L. Saaty (TL.Saaty), has been widely used in the areas of timber, furniture, sales, and online shopping (Yu, Liu, Fei et al., 2023)." A hierarchical structure is used to represent the relationship between elements. Then, the relative importance of the elements between the same levels is represented in the form of a matrix. The relative weights of the elements in this matrix are obtained by calculating the eigenvectors corresponding to the eigenroots of the matrix. Finally, a comprehensive ranking is performed(Saaty, 1988).

Table 1. Preliminary construction of a cultural indicator system in modern furniture design

Level 1 indicators	Evaluating attributes	Level 2 indicators	Level 3 indicators
Cultural heritage and innovation factors in Contemporary furniture design	Functional properties	Furniture Use Function	A1 Practicality
			A2 Functionality
			A3 Durability
	cultural property	Production Technology	B1 Furniture Material
			B2 Manufacturing Techniques
			B3 Technology
		Furniture Spiritual Culture	C1 Values
			C2 Minimalist Design
			C3 Emotional Experience
	aesthetic property	Furniture Historical Culture	C4 Cultural Exchange
			D1 Aesthetic Appeal
			D2 Furniture Style
		Modern Aesthetics	D3 Design Concept
			E1 Simplicity
			E2 Material Innovation
	people-oriented	Developmental Needs	E3 Colour Matching
			F1 Sustainable Design
			F2 Personalised Service
			F3 Technology Intelligence

This study designs a questionnaire based on user needs analysis to explore the value and influence of traditional furniture culture in contemporary society, especially modern furniture, aiming to better understand people's views on the relationship between furniture and culture. The questionnaire has six key parts. The selected survey groups are based on their influence or professional knowledge in furniture design and cultural heritage. They include advertising/media professionals, individuals in art, design, creativity, education, academia, researchers, art/design students, furniture designers, and freelancers. Additionally, furniture culture historians are added to provide a professional historical perspective, comb through the development context and value connotations of traditional furniture culture, promote integration by comparing past and present, and enhance the authority and credibility of the research.

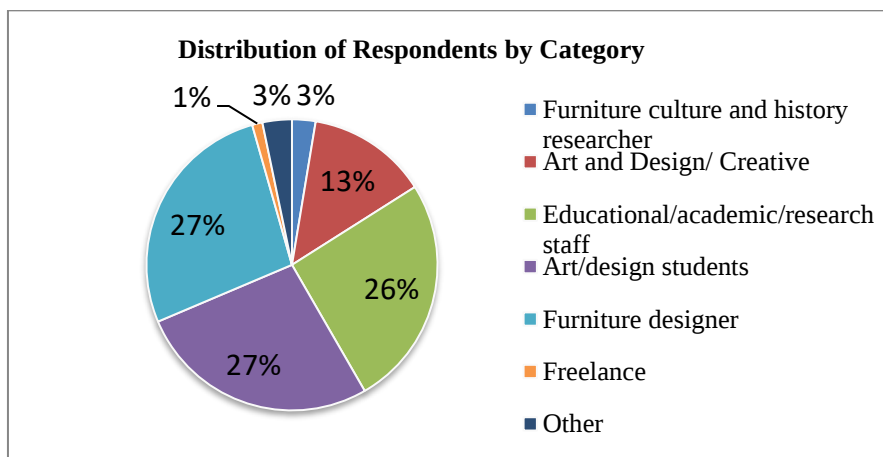


Figure 2. The Educational major of the investigator

Question: Are you satisfied with sustainable design in contemporary furniture?

Table 2. Three groups of answers to the question

Indicator	Object Category	Items	Minimum Value	Maximum Value	Mean	Standard Deviation
Sustainable Design	Furniture culture and history researcher	16	1.0	5.0	3.188	0.403
	Furniture design teacher	157	1.0	5.0	3.707	0.834
	Furniture designers	165	1.0	5.0	3.459	0.930

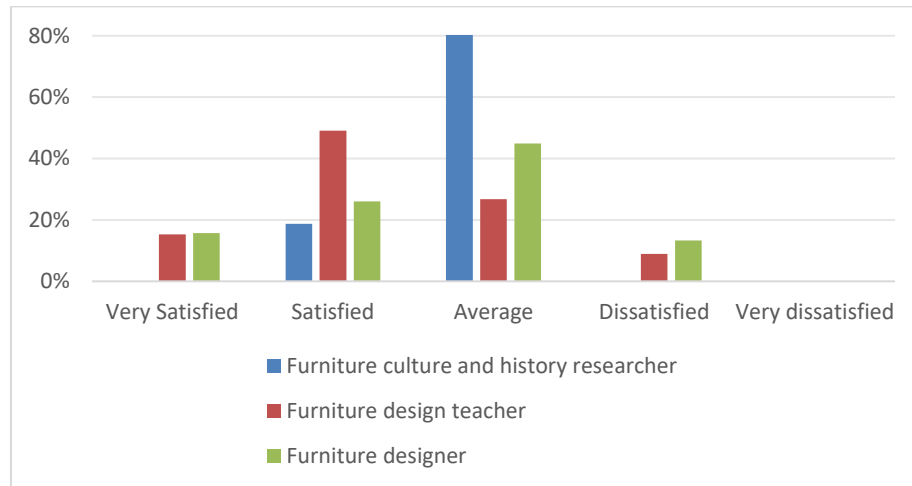


Figure 3. Comparison of three groups on Question: Are you satisfied with sustainable design in contemporary furniture?

4.0 Discussion

The study surveyed different groups (including students, teachers, and designers) to explore their views on traditional and modern furniture design, design preferences, and future expectations. The questionnaire was designed to cover three main dimensions: personal basic information, basic views on traditional and modern furniture, and satisfaction with design indicators.

The research results show differences among groups in symbolic significance, practicality, and aesthetic appeal of furniture design. Different groups have specific preferences. Furniture Culture Historians (FCH) value furniture's symbolic and aesthetic dimensions, reflecting a strong orientation toward cultural heritage. Their perspectives highlight the importance of traditional craftsmanship and materials, offering inspiration for sustainable design rooted in cultural continuity.

Furniture Design Educators (FDE) seek to balance symbolic meaning with functionality in design education. By integrating cultural and sustainable principles into curricula, they cultivate students' ability to create meaningful and environmentally responsible furniture.

Market needs drive Furniture Industry Stakeholders (FIS). They focus on functionality, material quality, and practical innovation. Their attention to sustainable materials and processes reveals a pragmatic path to aligning ecological goals with competitiveness.

These findings suggest that differentiated group perspectives can inform strategies for integrating sustainability into furniture design through cultural inheritance, educational practice, and industrial innovation.

Table 3. Comparison of quantitative results on the importance of each indicator from high to low among the three groups of respondents (highest highlighted in green, lowest marked in yellow)

Indicator	FCH	Indicator	FDE	Indicator	FIS
Symbolism	3.75	Symbolism	3.886	Functionality	3.842
Practicality	3.743	Cultural Exchange	3.876	Furniture Material	3.796
Aesthetic Appeal	3.571	Functionality	3.841	Practicality	3.75
Emotional Experience	3.545	Practicality	3.789	Personalised Service	3.749
Technology	3.494	Minimalist Design	3.774	Symbolism	3.684
Material Innovation	3.484	Sustainable Design	3.704	Emotional Experience	3.675

Cultural Exchange	3.471	Furniture Material	3.606	Manufacturing Techniques	3.615
Values	3.371	Material Innovation	3.459	Values	3.609
Minimalist Design	3.173	Manufacturing Techniques	3.372	Design Concept	3.581
Design Concept	3.167	Technology	3.361	Color Matching	3.548
Personalised Service	3.043	Design Concept	3.279	Durability	3.504
Color Matching	3.034	Color Matching	3.257	Sustainable Design	3.459
Sustainable Design	2.984	Durability	3.25	Minimalist Design	3.457
Furniture Style	2.964	Emotional Experience	3.184	Technological Intelligence	3.384
Technological Intelligence	2.948	Personalised Service	3.142	Cultural Exchange	3.213
Functionality	2.91	Aesthetic Appeal	3.067	Material Innovation	3.204
Furniture Material	2.864	Technological Intelligence	3.053	Aesthetic Appeal	3.113
Durability	2.805	Furniture Style	3.047	Furniture Style	2.894
Manufacturing Techniques	2.783	Values	2.976	Technology	2.846

5.0 Conclusion

The intersection of traditional Chinese furniture culture and contemporary design practices, particularly in sustainable development, invites a thorough exploration of historical influences, aesthetic values, and modern design practices. Our research has identified several key findings, focusing on integrating sustainability principles and traditional cultural elements in furniture design.

Firstly, we have developed a comprehensive index system to evaluate furniture culture's inheritance and innovation. This system incorporates traditional values, modern requirements, and aesthetic perspectives, enabling designers to maintain cultural continuity while fostering innovation during the design process. The framework reflects existing literature advocating for environmental sustainability and cultural preservation guidelines. For instance, Yang and Vezzoli emphasise the necessity of developing comprehensive guidelines rather than focusing narrowly on single sustainability indicators (Yang & Vezzoli, 2024). Furthermore, the holistic approach described by Spangenberg et al. highlights the value of interdisciplinary methodologies that involve diverse stakeholders, which is essential for evaluating the dynamics of cultural heritage alongside sustainable development (Spangenberg et al., 2010).

Introducing the concept of "whole life cycle furniture culture" significantly contributes to furniture design. By embedding sustainability across all stages of a furniture product's existence—spanning design, production, use, and disposal—this framework offers a comprehensive approach that responds to contemporary ecological imperatives. More importantly, it provides a theoretical and practical model through which traditional Chinese cultural values, such as harmony with nature, durability, and resource consciousness, can be meaningfully aligned with modern principles of sustainable development. In doing so, the study deepens the discourse on the cultural dimensions of design and advances a path toward culturally rooted and environmentally responsible innovation.

In conclusion, this research provides both theoretical foundations and practical guidance for the inheritance, innovation, and application of furniture culture in design education and industrial development. By balancing cultural preservation with sustainable innovation, the furniture industry can create products that respect heritage while addressing contemporary environmental and social challenges.

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