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DECODING CHINESE CONSUMERS' AMBIVALENT ATTITUDES AND USAGE INTENTIONS TOWARD BAMBOO FURNITURE

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Abstract:

This study explores the multidimensional perceptions, complex attitudes, and purchase intentions of Chinese consumers towards bamboo furniture, aiming to interpret the paradox between its venerated cultural status and low market penetration. Employing an exploratory quantitative approach, this research surveyed 318 Chinese consumers via an online questionnaire. The instrument combined Semantic Differential and Likert scales to measure consumer perceptions across three dimensions—value, quality, and aesthetics—along with their preferences and intentions. The research reveals inherent contradictions in consumer perceptions. First, the perceptual dimensions exhibit a hierarchical structure: value perception (cultural, environmental) is rated highest, followed by aesthetic perception, and lastly, quality perception. Second, negative stereotypes regarding quality persist, particularly among consumers lacking direct usage experience. Third, while environmental and cultural benefits are core drivers of attraction, concerns over maintenance and stylistic integration act as primary deterrents. Finally, consumer preferences show a significant polarization between traditional and modern design styles. The findings offer practical implications for designers and bamboo furniture enterprises. Companies should adopt differentiated strategies. Design efforts must establish a clear stylistic positioning while emphasizing the product's durability and sturdiness. Marketing initiatives should aim to reshape the "quality narrative," overcoming consumer hesitation through contextualized displays and hands-on offline experiences. This paper is the first to systematically construct a "perceptual map" of Chinese consumers' views on

bamboo furniture, identifying key perceptual dimensions and their inherent tensions. It provides a crucial empirical foundation for future research in this field and for the advancement of sustainable consumption practices.

Keywords:

Bamboo Furniture, Consumer Perception, Sustainable Consumption, Consumer Attitude

Introduction

A series of pressing global issues, including carbon emissions, global warming, energy depletion, and resource scarcity, pose significant threats and challenges to human existence. Consequently, there is a growing global focus on the imperative of sustainable development. The 17 Sustainable Development Goals (SDGs) established by the United Nations are designed to address developmental challenges across social, economic, and environmental dimensions, guiding a global transition towards a sustainable path. Industries across all sectors are actively pursuing paths toward sustainability, and the furniture industry is no exception. Key objectives, such as ensuring sustainable consumption and production patterns, the sustainable management of forest resources, and the protection of biodiversity, are intrinsically linked to the development of the furniture sector.

As the world's most populous nation, China exhibits an enormous demand for furniture—a demand that continues to rise in tandem with its economic growth. Chinese consumers hold a particular affinity for wooden furniture, which accounts for over 70% of the country's total furniture output. This preference, however, creates a stark and intensifying conflict: the immense demand for wooden furniture clashes with the increasing scarcity of timber due to dwindling forest resources. This tension severely impedes the sustainable development of China's furniture industry.

Bamboo, a traditional material in Chinese furniture making, presents a viable solution. Owing to its characteristics—such as rapid growth and its ability to regenerate perpetually from a single planting—it possesses superior environmental credentials compared to wood. Consequently, vigorously promoting the development of bamboo furniture is crucial for advancing the sustainability of China's furniture sector. Indeed, it is bamboo's excellent environmental performance that has spurred material scientists and engineers to advance bamboo processing technologies, enhancing its various material properties and establishing it as an even more superior material for furniture manufacturing.

Contradictions and Complexities in Chinese Consumer Perceptions of Bamboo Furniture. Consumer understanding of bamboo furniture is often ambiguous, shaped by the dual influences of a pervasive bamboo culture and the perceived simplicity of traditional pieces. China, with its abundant bamboo resources, is a major global hub for bamboo product manufacturing. Owing to its widespread distribution and excellent physical properties, traditional bamboo was extensively used in the fabrication of various traditional Chinese artifacts, with furniture being a prominent category. Traditional Chinese bamboo furniture can be classified into two primary types: vernacular bamboo furniture for common use, and refined pieces designed exclusively for the imperial court and aristocracy (Fang & Wang, 2015).

Bamboo holds a unique and vital role in traditional Chinese culture. As a recurring motif in classical painting, calligraphy, and literature, it symbolizes noble virtues such as upright character, purity, and resilience. Chinese literati, in particular, revered bamboo. This reverence is famously encapsulated in the words of the Song dynasty poet Su Shi: "One can live without meat, but one cannot live without bamboo." Therefore, in traditional Chinese culture, bamboo is imbued with profound humanistic and cultural significance.

Consequently, bamboo furniture was highly favored by the intellectual elite and aristocracy during the Song Dynasty. Regrettably, few examples of the traditional bamboo furniture once used by the imperial court and nobility have been preserved. As a result, scholars must rely primarily on artistic depictions in paintings and descriptions in historical documents to study this category of furniture (Ying-Ying & Juan, 2019; Zhang & Ding, 2022a, 2022b).

The other category of traditional bamboo furniture is that which has enjoyed widespread use and acceptance since antiquity, particularly in regions where bamboo is indigenous. However, this vernacular furniture was typically crafted by local artisans from raw, untreated bamboo. The production techniques were often rudimentary, and the level of craftsmanship varied considerably. Lacking preservative treatments, this furniture was prone to cracking, borer infestation, and even decay.

Consequently, bamboo furniture acquired a reputation for being traditional, inexpensive, and fragile—a product associated with folk culture—which has fostered a persistent bias against it (Mao et al., 2014). This negative perception, in turn, has dampened consumer interest. Bamboo remains widely associated with the rudimentary handicrafts of rural communities, while wooden furniture is perceived as superior. As a result, the perception of modern bamboo furniture among Chinese consumers is muddled by a fundamental conflict: a reverence for traditional bamboo culture on the one hand, and a rejection of traditional bamboo furniture on the other. Consumer interest in bamboo furniture has thus been adversely affected by this shift in perception. Bamboo remains widely associated with the rudimentary handicrafts common to rural communities, while wooden furniture is perceived as superior. Consequently, the modern Chinese consumer's view of bamboo furniture is muddled by a fundamental conflict: an acceptance of traditional bamboo culture on the one hand, and a rejection of traditional bamboo furniture on the other.

Despite its status as a traditional form of Chinese furniture, the market position of bamboo furniture lags significantly behind that of its wooden counterparts. The market penetration of bamboo furniture in China remains far below that of wood, impeding the industry's progress towards the strategic goals of "substituting wood with bamboo" and "substituting plastic with bamboo." The Chinese bamboo furniture industry is well-established, and while the market has shown signs of recovery, a significant disparity remains when compared to the wooden furniture sector (Sun & Shao, 2021). Therefore, bamboo furniture presents both immense potential and a formidable challenge within the Chinese market.

To accelerate the development of the bamboo furniture industry and contribute to the achievement of the UN Sustainable Development Goals, this study adopts an exploratory research approach. It seeks to understand consumers' inherent perceptions of bamboo furniture, explore variations in these perceptions across different consumer segments, and identify the key factors influencing their usage preferences and future purchase intentions. The study aims

to propose recommendations for product development, providing designers and enterprises with a reference for creating bamboo furniture that better meets consumer needs, thereby increasing its market share(Cheng et al., 2020).

Literature Review

Sustainable Consumption Behavior Research

Sustainable Consumption Behavior (SCB) is defined as a mode of consumption that extends beyond the mere purchase of environmentally friendly products (i.e., green purchasing). It also encompasses a broader set of practices such as reducing consumption, reusing materials, and recycling. The overarching goal of this consumption pattern is to "meet the needs of the present without compromising the ability of future generations to meet their own needs"(Jackson, 2005).

Over several decades of development, the focus of research on SCB has shifted from an early emphasis on "awareness" to a more critical exploration of "behavior." A central theme in this research is the well-documented "Attitude-Behavior Gap," also known as the "Green Gap." This gap describes the discrepancy wherein many consumers profess to have pro-environmental attitudes yet fail to translate these beliefs into corresponding purchasing actions(Tanner & Wölfiging Kast, 2003) . The present study will contribute to this discourse by investigating whether this gap exists within the context of bamboo furniture and identifying the underlying reasons for its presence.

The drivers of Sustainable Consumption Behavior (SCB) are broadly categorized into internal and external factors:

- **Internal Factors:** These include psychological and personal attributes such as environmental concern, personal values, personal norms, environmental knowledge, and perceived consumer effectiveness (Vermeir & Verbeke, 2006).
- **External Factors:** These encompass contextual and market-related elements such as price, product availability, brand reputation, social influence, eco-labels, and government policies(Paul et al., 2016).

However, beyond these drivers, the adoption of sustainable consumption is often impeded by significant barriers. Prohibitive costs, skepticism regarding product performance (e.g., durability and safety), inconvenience of purchase, information asymmetry, and a lack of trust in product claims are frequently cited as primary deterrents that prevent consumers from choosing sustainable products.

As a quintessential sustainable product, bamboo furniture confronts many of the aforementioned challenges in its market adoption. Therefore, applying the theoretical framework of SCB, this study will investigate how these drivers and barriers specifically shape the attitudes and purchase intentions of Chinese consumers towards bamboo furniture. In doing so, the research aims to provide empirical evidence to help bridge the "Attitude-Behavior Gap" within this specific product domain.

Bamboo Furniture: An Object of Multidimensional Perception

To understand consumer attitudes towards bamboo furniture, it is crucial to approach it not as a monolithic entity, but as a complex object evaluated across multiple perceptual dimensions. The literature suggests that these perceptions are often hierarchical and contradictory, stemming from bamboo's unique ecological, cultural, and material properties. This section deconstructs these properties into three key perceptual dimensions—value, quality, and aesthetics—and highlights the inherent tensions within each dimension that this study seeks to explore.

The Perceived Value Dimension: Ecological vs. Cultural Significance

The value proposition of bamboo furniture is twofold, rooted in both ecological benefits and profound cultural symbolism. From an ecological standpoint, bamboo is a quintessential sustainable material. Its rapid growth cycle, low carbon footprint, and ability to thrive on marginal lands make it a more environmentally sound alternative to traditional timber (Food and Agriculture Organization of the United Nations, 2020). This objective ecological advantage provides a solid foundation for a positive perceived ecological value.

Simultaneously, bamboo is deeply embedded in Chinese culture, symbolizing integrity, resilience, and scholarly elegance (Zhang & Ding, 2022a). As Joseph Needham noted, China was once a "bamboo civilization," with the plant being central to its art, literature, and philosophy (Ying-Ying & Juan, 2019). This historical reverence endows bamboo objects with a powerful perceived cultural value, linking them to a legacy of refinement and intellectual pursuit, which was particularly evident in the exquisite furniture of the Song Dynasty (Zhang & Ding, 2022b; Fang & Wang, 2015).

However, a critical question arises from this duality: do consumers perceive and weigh these two value dimensions equally? Does an abstract appreciation for cultural heritage and ecological benefits translate into perceived personal value within a consumption context? Or are these positive values overshadowed by more immediate, practical considerations? Exploring the hierarchy of these perceived values and their interaction is a key objective of this study.

The Perceived Quality Dimension: The Gap Between Traditional Impressions and Modern Reality

The perception of quality is arguably the most contested domain, characterized by a significant gap between historical impressions and modern technological reality. Historically, the most accessible form of bamboo furniture was the vernacular style found in rural areas. This furniture was typically made by local artisans using untreated, raw bamboo, rendering it susceptible to cracking, borer infestation, and decay (Mao et al., 2014). This legacy has fostered a deeply entrenched perception of bamboo as fragile, short-lived, and of inferior quality.

In stark contrast, modern material science has transformed bamboo into a high-performance engineered material. Innovations such as laminated bamboo, strand-woven bamboo, and flat-pressed bamboo have overcome the material's traditional weaknesses. These processes yield materials with exceptional durability, stability, and strength, making them a viable substitute for hardwoods in furniture production (Baffour-Awuah, 2020; Li & Lou, 2021; Huo et al., 2023; Qi et al., 2023).

This creates a critical knowledge gap. Do contemporary consumer perceptions of quality remain anchored to outdated impressions of traditional bamboo craft, or have they been updated to reflect the reality of modern engineered bamboo? How does prior usage experience—whether with traditional or modern forms—shape this quality perception? This study will investigate these questions to gauge the extent of this "perceptual lag."

The Perceived Aesthetic Dimension: A Duality of Style

The aesthetic perception of bamboo furniture is characterized by a fundamental duality. On the one hand, it is associated with a rustic, vernacular aesthetic—one of simplicity, austerity, and a connection to rural folk-art traditions. While authentic, this image may be perceived as insufficiently refined and difficult to integrate into modern urban interiors (Mao et al., 2014). On the other hand, bamboo furniture carries a legacy of a sophisticated literati aesthetic, as exemplified by the elegant, minimalist designs favored by scholars in the Tang and Song dynasties (Zhang & Ding, 2022b; Fang & Wang, 2015). This historical precedent, coupled with the efforts of contemporary designers, has given rise to a modern design language for bamboo furniture that is stylish, innovative, and globally appealing.

This duality presents a challenge for both consumers and marketers. Which aesthetic identity dominates the contemporary consumer's mind? Do they show a clear preference for traditional versus modern styles, or is a fusion of the two considered ideal? Understanding these aesthetic preferences is crucial for guiding both design strategies and marketing communications.

Together, these three dimensions—value, quality, and aesthetics—constitute the complex perceptual framework through which consumers evaluate bamboo furniture. The inherent tensions within each dimension underscore the necessity of exploratory research to map the authentic image of bamboo furniture in the consumer's mind.

Although modern Chinese bamboo furniture enterprises have made improvements in both technology and innovative design, the market remains saturated with uninspired products. Furthermore, firms and designers have often failed to effectively communicate the environmental and modern design value of bamboo furniture through their products. This study aims to validate these challenges from the demand side—that is, the consumer. By investigating consumers' actual attitudes, this research can determine the extent to which stereotypes about bamboo furniture persist and ascertain the purchase intentions of contemporary consumers.

Factors Influencing Furniture Purchase Decisions

Furniture is a high-involvement, durable product possessing both utilitarian and hedonic attributes. This means that consumers typically invest significant time and cognitive effort in information search and evaluation, making the decision-making process more complex.

Key Influencing Factors:

- **Product Attributes:** These are the most central factors, which can be divided into:
 - Functional Attributes: Price, Quality/Durability, Functionality, and Comfort (Wan & Toppinen, 2016).
 - Aesthetic/Hedonic Attributes: Design/Style, Color, Material, and Workmanship. For furniture, aesthetic attributes are often considered equally, if not more, important than functional ones (Batra & Ahtola, 1991).
- **Personal Factors:** These include the consumer's lifestyle, personality, and stage in the family life cycle.

- **Social and Situational Factors:** These encompass brand image, word-of-mouth (WOM)/online reviews, the in-store experience, and sales promotions.

Existing research indicates that while consumers acknowledge the importance of sustainability, environmental attributes are typically ranked lower than price, design, and quality in the final trade-off (Susanty et al., 2020). Sustainability often functions more as a "bonus point" or a "tie-breaker" rather than a primary determinant of choice. Therefore, a core task of this study is to quantify the relative importance of these factors—specifically design, price, quality, and environmental attributes—in shaping purchase intentions for bamboo furniture within the Chinese consumer context. This analysis will reveal which aspects enterprises should prioritize for optimization in order to effectively promote bamboo furniture.

Summary

In summary, while the existing literature touches upon various facets of bamboo furniture, a systematic, consumer-centric study that holistically explores and maps its complex perceptual network is conspicuously absent. This research aims to fill this gap by providing a detailed, exploratory account of the multifaceted perceptions, attitudes, and purchase intentions of Chinese consumers towards bamboo furniture.

Research Methodology

Questionnaire Design

The questionnaire served as the primary instrument for collecting quantitative data in this study. It was designed to measure consumer impressions, attitudes, and purchase intentions regarding bamboo furniture. The questionnaire was structured in three main sections:

- **Participant Demographics and Experience:** This section collected demographic information (gender, age, education level, academic/professional background) and experience related to bamboo furniture (e.g., whether the participant was from a bamboo-producing region, and any prior experience with using or purchasing the product).
- **Perceptual Evaluation of User Impressions:** Diverging from typical user perception studies, this section was designed to measure consumers' pre-existing impressions of bamboo furniture. Therefore, no stimuli (including images or physical objects) were provided; respondents were instructed to answer based solely on their prior conceptions. This section presented nine pairs of bipolar adjectives and one pair of preference-related terms describing perceptions of bamboo furniture. These were measured on a 5-point semantic differential scale (e.g., "Unique" 1-2-3-4-5 "Commonplace").
- **Survey of Consumer Purchase Intentions:** This final section comprised 12 items, including both closed-ended questions and statements measured on a Likert scale. The items were designed to assess various aspects of consumers' purchase intentions related to bamboo furniture.

Participants and Data Collection

Participant Recruitment

The questionnaire was administered via the online platform 'Wenjuanxing' (www.wjx.cn). A combination of convenience and snowball sampling methods was employed to recruit participants, targeting general consumers as well as students and practitioners in design-related fields within mainland China.

Data Collection and Screening

A total of 389 responses were collected. To ensure data quality, a rigorous screening process was implemented. Invalid questionnaires were discarded, including those with excessively short completion times, those exhibiting clear response patterns (e.g., straight-lining), and incomplete submissions. This process resulted in a final valid sample of 318 responses, yielding an effective response rate of 81.7%.

Participant Demographics

The demographic characteristics of the final sample are presented in Table 1. The sample demonstrated considerable diversity in terms of gender, age, professional background, and prior experience with bamboo furniture.

Table 1: Demographic Characteristics of the Sample (N=318)

Characteristic	Category	Frequency	Percentage
Gender	Male	195	61.3%
	Female	123	38.7%
Age	18-25 years	214	67.3%
	26-30 years	42	13.2%
	31-40 years	46	14.5%
	41-50 years	16	5.0%
Design	Yes	254	79.9%
	No	64	20.1%
Education	College Diploma	41	12.9%
	Bachelor's Degree	198	62.3%
	Master's Degree	61	19.2%
Geographic	Bamboo-producing	163	51.3%
	Non-bamboo-producing	155	48.7%

Source: Author's own drawing

It is important to note that the sample is predominantly composed of young, well-educated individuals with a background in design. While this demographic profile is not representative of the general Chinese consumer population, this group constitutes a significant segment of early adopters and trendsetters whose perceptions can significantly influence future market trends. Consequently, an analysis of their perspectives offers valuable insights into the potential future trajectory of bamboo furniture consumption.

Reliability and Validity Analysis

The results of the reliability and validity tests indicated that the scale possesses excellent internal consistency (overall Cronbach's $\alpha = 0.990$, with all dimensions' $\alpha > 0.9$) and good construct validity (KMO = 0.947, Bartlett's test of sphericity $p < 0.001$). This confirms that the measurement tool is stable and reliable, and the data is suitable for subsequent analysis.

Results

To investigate the influence of participants' geographic origin and prior usage experience on their perceptions and purchase intentions regarding bamboo furniture, the data were segmented into groups for analysis:

Table 2: Segmentation of the Sample for Analysis

Data set	Group	group code	Sample size
A (Bamboo producing areas)	Experience	A1	129
	No experience	A2	34
B (non-bamboo producing areas)	Experience	B1	109
	No experience	B2	46

Source: Author's own drawing

Results of the Perceptual Evaluation

Perceived Aesthetics

A majority of respondents expressed positive perceptions regarding the aesthetics of bamboo furniture. Among participants from bamboo-producing regions, approximately 70% endorsed the descriptive terms "unique," "rustic," and "elegant." This figure rose to 80% among those from non-bamboo-producing regions. Across all groups, "rustic" received the highest level of agreement, while "elegant" received relatively lower agreement. Furthermore, the group with prior experience using bamboo furniture showed slightly higher agreement with the aesthetic attributes and had a notably higher proportion of individuals expressing a clear and strong preference ("like") compared to the group with no experience. No significant differences were observed between the groups from bamboo-producing and non-bamboo-producing regions in this dimension.

Perceived Quality

Agreement with perceived quality attributes was markedly lower than for perceived aesthetics. Notably, respondents from bamboo-producing regions registered even lower levels of agreement. This suggests that in the impressions of these respondents, bamboo furniture is perceived as relatively poor in durability, comfort, and practicality, and is thus considered less than satisfactory. Among the three quality attributes, "comfort" received the lowest agreement, followed by "durability", indicating that comfort is the most significant perceived weakness. When analyzed by usage experience, the group with no prior experience gave significantly lower ratings for perceived quality. This may be attributable to the fact that this group, largely composed of individuals aged 18-30, likely derives their impressions from images of traditional

vernacular bamboo furniture or from anecdotal accounts. In contrast, the perceptions of the experienced group are partially informed by direct usage of modern, innovative bamboo furniture.

Perceived Value

Perceived value received the highest level of endorsement among the three dimensions, with agreement rates reaching approximately 85% in both the bamboo-producing and non-bamboo-producing region groups. This indicates a strong appreciation for the natural, environmental, and cultural attributes of bamboo furniture. China's profound bamboo culture appears to endow the furniture with high perceived cultural value, while its natural and environmental qualities stem from the inherent properties of the material itself. From the perspective of usage experience, the group with prior experience registered a higher level of agreement with the value attributes. This suggests that close contact and direct usage foster a deeper understanding and appreciation of its perceived value.

Degree of Liking for Bamboo Furniture

Overall, no significant difference in the general degree of liking was found between respondents from bamboo-producing and non-bamboo-producing regions, with approximately half in both groups indicating a preference for it. However, a notable 17% of respondents from bamboo-producing regions explicitly stated a dislike for bamboo furniture, a proportion significantly higher than that of the non-bamboo-producing group. Conversely, 31% of the non-bamboo-producing group held a neutral stance, a higher proportion than their counterparts from bamboo regions. The tendency to remain neutral was even more pronounced in the group with no prior usage experience. This suggests that greater familiarity with bamboo correlates with more decisive opinions (either positive or negative), whereas less familiarity is more likely to result in a neutral position.

Cross-Comparison Analysis of Different Groups

The cross-comparison analysis revealed that both the participant's geographic origin and their prior usage experience influenced their perceptions of bamboo furniture. Moreover, the impact of usage experience was found to be greater than that of geographic origin. The most significant impact was observed on the perceived quality dimension, while the smallest impact was on perceived value.

Table 3: Results of the Perceptual Evaluation of Bamboo Furniture

	Numb er of cases	Mean									Lik e
		Uniqu e	Rusti c	Elega nt	Durabl e	Comfortab le	Practic al	Natur al	Environmenta lly friendly	Cultural ly	
A1	129	1.98	1.88	1.93	1.96	2.20	1.90	1.56	1.50	1.61	2.29
A2	34	2.24	2.09	2.35	2.76	2.71	2.50	1.82	1.91	1.79	2.29
A	163	2.04	1.92	2.02	2.13	2.31	2.02	1.61	1.58	1.65	2.29
B1	109	1.76	1.66	1.73	1.88	2.09	1.79	1.44	1.46	1.56	2.18

B2	46	1.87	1.98	2.09	2.22	2.59	2.35	1.67	1.59	1.83	2.28
B	155	1.79	1.75	1.84	1.98	2.24	1.95	1.51	1.5	1.64	2.21
Total	318	1.92	1.84	1.93	2.06	2.27	1.99	1.56	1.54	1.64	2.25

Source: Author's own drawing

Results of the Purchase Intention Survey

This section of the questionnaire contained 12 items, composed of both multiple-choice questions and statements measured on a Likert scale. The objective was to gather data on participants' preferences and purchase intentions regarding bamboo furniture. The findings are intended to provide actionable insights for the development of future bamboo furniture design strategies.

Table 4: Summary And Format of The Questions in Section C Of the Online Survey Questionnaire

Question – Section C		Format
Q1	What do you think are the advantages of bamboo furniture?	Closed-Ended Question
Q2	What do you think are the disadvantages of bamboo furniture?	Closed-Ended Question
Q3	How would you feel if you placed a piece of bamboo furniture in your home?	Likert Scale
Q4	A. Relaxation	Likert Scale
Q5	B. Insecurity	Likert Scale
Q6	C. Show my taste	Likert Scale
Q7	D. Cheap feeling	Likert Scale
Q8	E. More natural and healthier	Likert Scale
Q9	What do you value more when buying bamboo furniture?	Closed-Ended Question
Q10	Which functional category of bamboo furniture do you prefer?	Closed-Ended Question
Q11	In which space would you prefer to place bamboo furniture?	Closed-Ended Question
Q12	Which design style of bamboo furniture do you prefer?	Closed-Ended Question
Q12	Do you want to own a piece of bamboo furniture?	Likert Scale

Source: Author's own drawing

Perceived Advantages and Disadvantages of Bamboo Furniture

The results show that over 70% of respondents identified "cultural value" and "environmental friendliness" as the primary advantages of bamboo furniture. Regarding the perceived disadvantages, over 60% of respondents considered it "difficult to clean and maintain," making it the main drawback, followed by its "incompatibility with modern interiors." Furthermore, no significant differences were found among the four respondent groups in their perceptions of these pros and cons.

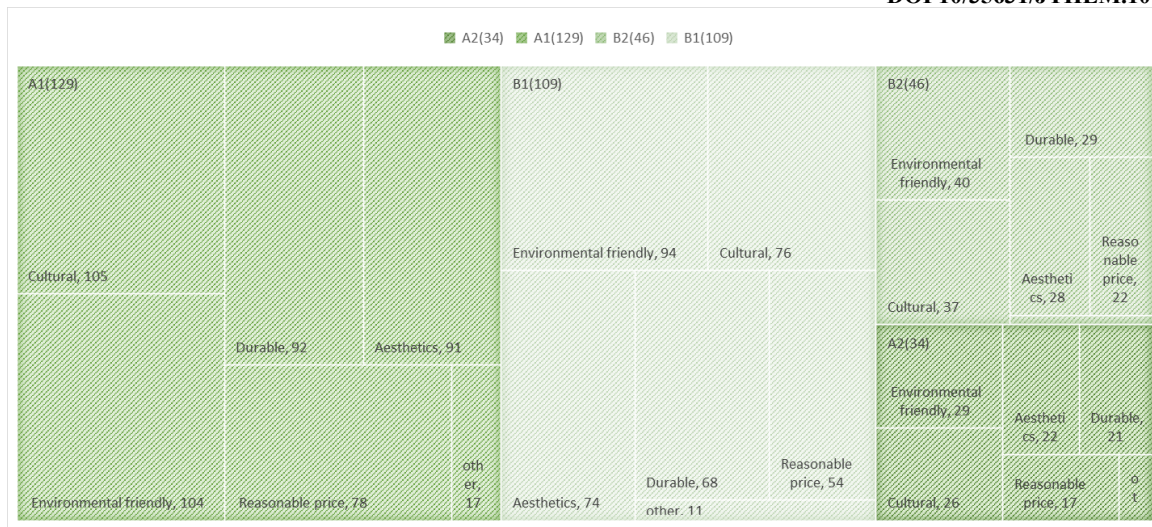


Figure 1: Treemap of Perceived Advantages of Bamboo Furniture

Source: Author's own drawing

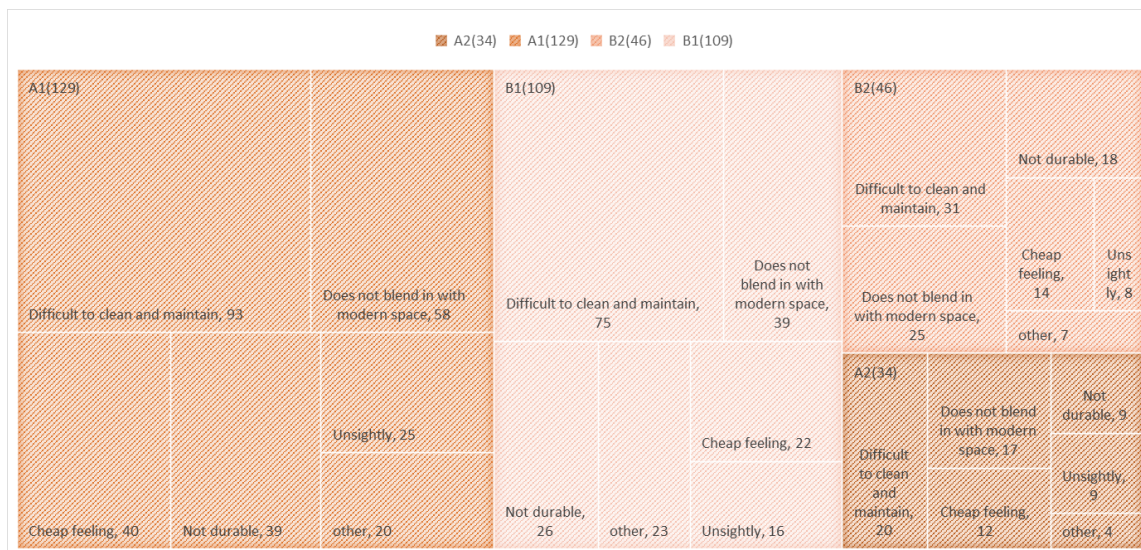


Figure 2: Treemap of Perceived Disadvantages of Bamboo Furniture

Source: Author's own drawing

Results of Emotional Response Survey

Questions 3–7 were designed to investigate the emotional responses to bamboo furniture. These included positive emotions such as 'relaxation' and feeling 'more natural and healthier'; negative emotions like 'insecurity' and a 'cheap feeling'; as well as the perception of whether bamboo furniture can 'show my taste'.

Mean Values and Mann–Whitney U Test for Questions 3–7

Table 5 below displays the mean, standard deviation, and standard error of the mean for the responses to Questions 3–7. This section of the questionnaire utilized a 5-point Likert scale, with 3 representing the neutral midpoint ('Neither agree nor disagree'). Consequently, a mean score above 3 indicates a general tendency towards agreement, while a score below 3 suggests a tendency towards disagreement. However, this table does not reveal the differences among the four groups, thus necessitating further comparative analysis.

Table 5: The Likert Scale Type Output (using SPSS software) for Questions 3 to 7

40、 How would you feel if you placed a piece of bamboo furniture in your home?		Q3: A. Relaxation	Q4: B. Insecurity	Q5: C. Show my taste	Q6: D. Cheap feeling	Q7: E. More natural and healthier
A2	Mean	3.38	2.21	3.15	2.41	3.38
	Valid	34	34	34	34	34
	Std.	1.181	1.250	1.019	1.234	1.280
	Std. Error	0.203	0.214	0.175	0.212	0.219
A1	Mean	3.22	2.29	2.95	2.36	3.34
	Valid	129	129	129	129	129
	Std.	1.491	1.336	1.388	1.243	1.433
	Std. Error	0.131	0.118	0.122	0.109	0.126
B2	Mean	3.20	2.43	2.83	2.35	3.30
	Valid	46	46	46	46	46
	Std.	1.424	1.259	1.161	1.215	1.209
	Std. Error	0.210	0.186	0.171	0.179	0.178
B1	Mean	3.35	2.50	2.93	2.44	3.59
	Valid	109	109	109	109	109
	Std.	1.474	1.470	1.331	1.236	1.422
	Std. Error	0.141	0.141	0.128	0.118	0.136

Source: Author's own drawing

Table 6 presents the results of the Mann-Whitney U test for Questions 3–7, comparing the experienced and inexperienced groups from bamboo-producing areas. All asymptotic significance values were greater than 0.05, indicating no significant difference between the two groups. That is, their perceptions regarding feelings of relaxation, insecurity, showing taste, cheapness, or being natural and healthy did not differ significantly.

Similarly, Table 7 shows the results for the experienced and inexperienced groups from non-bamboo-producing areas. All asymptotic significance values were also greater than 0.05, meaning the perceptions of these two groups did not differ significantly either.

Table 6: Mann-Whitney U Test Results Comparing Experienced and Inexperienced Groups within the Bamboo-Producing Region

How would you feel if you placed a piece of bamboo furniture in your home?	A. Relaxation	B. Insecurity	C. Show my taste	D. Cheap feeling	E. More natural and healthier
Mann–Whitney U	2109.000	2146.000	2021.500	2130.000	2190.000
Wilcoxon W	10494.000	2741.000	10406.500	10515.000	10575.000
Z	-0.351	-0.200	-0.716	-0.266	-0.013
Asymptotic Significance (2-tailed)	0.726	0.841	0.474	0.790	0.990
a. Grouping Variable : 10 、 Have you ever used bamboo furniture?					

Source: Author's own drawing

Table 7: Mann-Whitney U Test Results Comparing Experienced and Inexperienced Groups within the Non-Bamboo-Producing Region

How would you feel if you placed a piece of bamboo furniture in your home?	A. Relaxation	B. Insecurity	C. Show my taste	D. Cheap feeling	E. More natural and healthier
Mann–Whitney	2339.500	2505.000	2400.000	2400.500	2103.000
Wilcoxon W	3420.500	8500.000	3481.000	3481.500	3184.000
Z	-0.673	-0.008	-0.430	-0.434	-1.630
Asymptotic Significance (2-tailed)	0.501	0.994	0.667	0.665	0.103
a. Grouping Variable : 10 、 Have you ever used bamboo furniture?					

Source: Author's own drawing

Results of Purchase and Usage Intention Survey

When asked what factors they value more when purchasing bamboo furniture, all respondent groups selected "price," "aesthetics," and "practicality" as key considerations. For the group with usage experience from bamboo-producing areas, "material" was also a priority, a finding likely attributable to their familiarity with bamboo.

Regarding usage intentions, "bamboo chairs and stools" was the most favored functional category. As for the preferred space for placement, most respondents chose the "study room," followed by the "balcony." Furthermore, preferences for design style were almost evenly split between "traditional" and "modern."

A highly encouraging finding was that when asked about their desire to own a piece of bamboo furniture, over 60% of respondents in both groups expressed this desire. This result suggests that bamboo furniture possesses significant market potential, regardless of whether consumers are from bamboo-producing or non-bamboo-producing areas.

Discussion

Overview of Findings

This study aimed to investigate the complex and often contradictory perceptions of Chinese consumers towards bamboo furniture. Our findings paint a compelling landscape of consumer attitudes. First, we identified a clear hierarchy among the three perceptual dimensions: perceived value (especially cultural and ecological) was rated highly, followed by aesthetics, with perceived quality lagging significantly behind. Second, our results confirm the existence of a "perception-reality gap" regarding quality, a gap that is particularly pronounced among consumers who lack direct experience with modern bamboo products. Third, while a strong desire to own bamboo furniture exists, this intention is tempered by practical concerns related to maintenance and stylistic integration. Finally, our analysis shows that while some perceptions vary with experience, many core attitudes—such as the polarized preference for traditional versus modern styles—are surprisingly consistent across different groups.

Interpretation of Core Findings

The Hierarchy of Perceptual Dimensions

The finding that perceived value ranked highest while perceived quality ranked lowest is highly instructive. It suggests that Chinese consumers genuinely recognize and appreciate the cultural and ecological merits of bamboo, which aligns with prior research on the importance of cultural symbolism(Zhang & Ding, 2022a, 2022b) and rising environmental consciousness in China. However, despite significant advances in modern bamboo material science(Huo et al., 2023), consumer perception severely lags behind reality.

The finding that "respondents from bamboo-producing regions gave even lower [quality] ratings" is particularly telling. This may stem from their greater exposure to untreated, traditional vernacular bamboo artifacts. This "negative experience" likely reinforces the stereotype of bamboo as "not durable," making them less easily swayed by abstract cultural values compared to consumers from non-producing regions. Therefore, marketing efforts that focus solely on cultural and environmental benefits are insufficient. It is imperative for the industry to actively dismantle the negative stereotype of poor quality through both design and communication.

Environmental and Cultural 'Pull' vs. Maintenance and Integration 'Push'

The identification of "environmental friendliness" and "cultural significance" as primary advantages confirms the strength of the value dimension. Conversely, the primary disadvantages—"difficulty in cleaning and maintenance" and "poor integration with modern

spaces"—align with the general importance of practicality and aesthetics in furniture purchasing decisions (İnce & Taşdemir, 2024; Li et al., 2016; Oblak et al., 2017) .

These findings reveal a "push-pull" dynamic in consumer decision-making. The cultural and environmental attributes act as 'pull' factors, drawing consumers towards bamboo furniture. However, concerns over maintenance and stylistic compatibility act as 'push' factors, driving them away. Our research suggests that the 'push' factors may currently be more influential, or at the very least, have created a stalemate with the 'pull' factors. The concern about "poor integration with modern spaces" is especially critical, as it indicates that current design offerings often leave consumers perplexed about how to incorporate bamboo furniture into their homes.

Consumer Emotions and Preferences

The fact that over 60% of respondents desire to own a piece of bamboo furniture signals a positive purchase inclination, which is consistent with the positive emotions of feeling "natural," "healthy," and "relaxed" that they associate with the material. This result resonates with findings in sustainable consumption research regarding the general consumer preference for "natural" materials.

The preference for placing bamboo furniture in a study or on a balcony is revealing. These are often semi-public, non-core areas of the home associated with leisure, nature, and quiet contemplation, which aligns perfectly with the cultural and natural attributes of bamboo. The reluctance to place it in core living spaces like the living room or bedroom likely stems from the aforementioned concerns about style and maintenance.

Finally, the even split in preference between traditional and modern styles confirms the aesthetic duality discussed earlier. This presents a clear choice for designers and enterprises: they must adopt a distinct stylistic positioning. They can either cater to the niche market segment that appreciates traditional Chinese aesthetics or serve the segment that seeks modern, minimalist design. Attempting to merge the two styles risks creating a product that fails to satisfy either group.

Contributions of the Study

Theoretical Implications

Provides Contextualized Insights for Sustainable Consumption Research: This study moves beyond generic "green consumption" research by delving into a unique product category characterized by sustainability, profound cultural symbolism, and complex historical perceptions. It reveals that for such a product, "perceived cultural value" and "historical negative perceptions" are critical variables, offering potential new avenues for extending established sustainable consumption models like the Theory of Planned Behavior (TPB) or the Value-Belief-Norm (VBN) theory.

Constructs a "Consumer Perceptual Map": As an exploratory study, this paper's primary theoretical contribution is the construction of the first clear "map" of the previously ambiguous domain of Chinese consumer perceptions of bamboo furniture. We have identified three core dimensions—value, aesthetics, and quality—and illuminated the inherent tensions between them. This provides a solid foundation for subsequent confirmatory research, such as

developing a dedicated scale to measure attitudes towards bamboo furniture or building a causal model that incorporates these dimensions.

Practical and Managerial Implications

Recommendations for Designers:

- Confront the "Quality" Deficit Directly: Design must not only be aesthetic but must also visually communicate the product's "sturdiness," "durability," and "ease of maintenance." This can be achieved through the use of thicker materials, high-quality hardware, and modern finishing techniques, with these advantages explicitly highlighted in product descriptions.
- Establish a Clear Stylistic Positioning: Given the market's polarization, designers should avoid stylistic ambiguity. They must either commit to traditional aesthetics to serve the "New Chinese Style" enthusiast or fully embrace modernism with minimalist design language to attract younger consumers.
- Design for the "Study" and "Balcony": Since these are consumers' preferred spaces, designers can develop product lines specifically for these settings—such as comfortable reading chairs, compact side tables, and multifunctional shelving units—to serve as a strategic market entry point.

Recommendations for Marketers:

- Reshape the "Quality" Narrative: Marketing communication must shift its focus from broad appeals to "environmentalism and culture" towards a narrative of "a traditional material empowered by modern technology." Use visual media like videos and detailed infographics to showcase the production process of modern engineered bamboo and its physical performance tests (e.g., load-bearing capacity, abrasion resistance) to dismantle negative consumer stereotypes.
- Offer "Solutions," Not Just "Products": To address the consumer pain point of "not knowing how to style it," marketing content should provide complete interior design solutions and contextualized imagery. Showcasing how bamboo furniture can be seamlessly integrated into modern home environments will reduce consumer decision-making anxiety.
- Leverage "Experiential" Marketing: Given the significant difference in quality perception between experienced and inexperienced consumers, offline showrooms and sample trial programs are crucial. Allowing consumers to physically touch and test the texture and sturdiness of modern bamboo furniture is the most effective way to change their perceptions.

Conclusion and Future Research

Limitations

This study has several limitations that should be acknowledged:

- Sample Representativeness: The sample collected for this study skews toward young, highly educated individuals with design backgrounds. This group possesses a high level of aesthetic appreciation, cultural understanding, and design sensitivity. For example, they offer more definitive judgments on design style preferences and give the highest ratings to the cultural and environmental qualities of bamboo furniture. While these findings may not be generalizable to all Chinese consumers, their perspectives hold valuable insights for predicting future market trends and guiding design leadership and understanding the high-end market.

- **Methodological Limitations:** As an exploratory survey-based study, our research can identify associations but cannot establish causal relationships between variables. Furthermore, the use of cross-sectional data does not allow for the capture of dynamic changes in consumer attitudes over time.
- **Impression-Based Perceptions:** The study measured perceptions based on pre-existing "impressions" rather than responses to specific product stimuli. Consequently, consumer reactions might differ when presented with bamboo furniture of a particular design style or at a specific price point.

Future Research Directions

Based on the findings of this study, several avenues for future research are recommended:

- **Confirmatory and Modeling Studies:** Future research could build upon the perceptual dimensions identified here by conducting confirmatory studies. This could involve developing a validated measurement scale and using Structural Equation Modeling (SEM) to test the causal pathways and relative strengths of these dimensions (e.g., perceived quality, aesthetics) in predicting purchase intention.
- **Experimental Design:** The influence of specific design factors on consumer attitudes is another promising research direction. Experimental studies could be designed where different consumer groups are shown bamboo furniture of varying styles (traditional vs. modern) or with different marketing messages (emphasizing environmental benefits vs. craftsmanship) to precisely measure the impact of these variables on attitudes.
- **Qualitative Deep-Dive:** To uncover the stories behind the numbers, qualitative methods such as in-depth interviews or focus groups could be employed. This would allow for a deeper exploration of the complex emotions and cultural associations that consumers have with bamboo furniture.
- **Cross-Cultural Comparative Research:** As this study focused exclusively on Chinese consumers, cross-cultural research presents a valuable next step. Investigating how perceptions of bamboo furniture differ across cultural contexts—for example, in European versus other Asian markets—could provide crucial insights for the global expansion of the bamboo furniture industry.

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