Effect of Decoration Complexity and Age on Aesthetic Evaluation, Purchase Intention, and Visual Attention in Wood Furniture

Tao Song Hemin Du Sifan Wu Wang Pohsun Jingran Lin
Ziying Li Liying Wen

Abstract

This study employed an explanatory sequential mixed-methods approach to examine how decoration complexity and age influence users' aesthetic evaluations, purchase intentions, and visual attention toward wooden furniture. A 2 by 2 ([age: older vs. younger adults] by [decoration complexity: complex vs. minimalist]) experimental design was used, integrating subjective ratings, eye-tracking data, and semistructured interviews to explore users' aesthetic cognition. The results indicated that furniture with complex decorations received significantly higher ratings in both aesthetic appreciation and purchase intention, which were associated with longer fixation times and shorter times to first fixation. Furthermore, significant interaction effects between age and decoration complexity were found for both purchase intention and time to first fixation. This study provides meaningful insights for optimizing traditional furniture design and developing age-sensitive market segmentation strategies.

As an essential part of daily life, wood furniture serves not only practical functions but also carries rich cultural and aesthetic value (Zheng 2022). As a critical element of furniture design, decoration directly influences individuals' aesthetic experience and emotional response. Historically, decorative styles in furniture have undergone multiple transitions between complexity and minimalism. For instance, traditional Chinese furniture from the Ming and Qing dynasties is renowned for its intricate carvings and richly detailed ornamentation, reflecting profound cultural heritage and craftsmanship (Xue et al. 2025). In contrast, the emergence of modern design movements—exemplified by Bauhaus minimalism—advocates for simplicity and functionality, emphasizing the integration of form and utility (Cacciola 2022).

In today's furniture market, complex and minimalist styles coexist, and consumers exhibit distinct individual preferences toward different decorative styles (Yu et al. 2023). Furniture with complex ornamentation is often perceived as more culturally meaningful and aesthetically valuable, appealing particularly to older generations. In contrast, minimalist furniture is widely favored by younger consumers for its clarity and modern appeal (Li 2022; Urbano et al. 2022). However, current research remains limited in understanding how consumers of different age groups perceive and evaluate decorations of varying complexity, especially within the context of traditional wooden furniture. Further investigation is therefore warranted.

The authors are, respectively, PhD student and Master of Arts, School of Creative Arts and Design, Zhejiang Polytechnic University of Mechanical and Electrical Engineering, Hangzhou, 310053, China, and Faculty of Innovation and Design, City University of Macau, Macau, 999078, China (u24092110338@cityu.edu.mo [corresponding author]); Doctor of Philosophy, School of Design and Innovation, Shenzhen Technology University, Shenzhen, 518118, China (duhemin@sztu.edu.cn); PhD student and Master of Arts, Faculty of Innovation and Design, City University of Macau, Macau, 999078, China (u24092110243@cityu.edu.mo); Doctor of Philosophy, Faculty of Innovation and Design, City University of Macau, Macau, 999078, China (phwang@cityu.edu.mo); PhD student and Master of Arts, School of Art and Communication, Fujian Polytechnic Normal University, Fuzhou 350300, China, and Faculty of Innovation and Design, City University of Macau, Macau, 999078, China (jingranl@fpnu.edu.cn); PhD student and Master of Arts, Faculty of Innovation and Design, City University of Macau, Macau, 999078, China (u24092110422@cityu.edu.mo) and Master student, Bachelor of Arts, Faculty of Innovation and Design, City University of Macau, Macau, 999078, China (u24091110312@cityu.edu.mo). This paper was received for publication in May 2025. Article no. 25-00026.

Forest Prod. J. 75(4):344–361.
doi:10.13073/FPJ-D-25-00026

Aesthetic Experience and Cognition

Aesthetic experience refers to the subjective feelings and cognitive responses individuals generate when observing and evaluating an object. It is closely related to visual complexity. According to the visual complexity theory, moderate visual complexity enhances aesthetic pleasure, whereas overly complex or simple stimuli may diminish aesthetic experiences (Berlyne 1971). This theory has been widely applied in the field of design psychology to explain users' preferences when confronted with designs of varying visual complexity (Nadal et al. 2008).

The processing fluency theory further elaborates on how visual complexity influences aesthetic experience (Reber et al. 2004). The easier a visual stimulus is to perceive and process, the stronger the aesthetic pleasure experienced by the individual. Simple and clear visual information, due to lower cognitive load, is more likely to receive positive evaluations. In contrast, complex decorations contain more visual elements and require more cognitive resources, potentially increasing cognitive load and reducing the consistency and positivity of aesthetic evaluations (Ma et al. 2022).

In recent years, the growing use of eye-tracking technology has provided new perspectives for the study of aesthetic cognition. Research in the field of wooden furniture has shown that indicators such as visual attention distribution, fixation duration, and time to first fixation can effectively reflect the cognitive processes involved in aesthetic evaluation (Ye et al. 2015; Wan et al. 2021). For example, visually complex decorative areas tend to attract more attention, demonstrated in longer fixation durations and shorter times to first fixation, indicating higher visual attractiveness and greater cognitive demand (Wan et al. 2018; Mao 2024). Therefore, when individuals view furniture with varying levels of decoration complexity, using eye tracking to analyze visual attention patterns can deepen our understanding of how such complexity affects the aesthetic evaluation process.

Aesthetic Appeal and Purchase Intention

Aesthetic appeal is a critical factor influencing consumer decision-making and has been widely validated in consumer psychology. Numerous studies have demonstrated that aesthetically pleasing product designs can considerably enhance purchase intention, especially in contexts where appearance heavily influences the perceived functionality of a product (Hagtvedt 2022). Moreover, aesthetic value not only affects initial purchase decisions but also plays a crucial role in long-term customer satisfaction and brand loyalty.

The mechanism by which aesthetic appeal influences purchase intention can be explained by the Elaboration Likelihood Model of Persuasion in consumer decision theory. This model suggests that consumers undergo a series of cognitive processes—including attention, perception, and evaluation—when faced with visual design, ultimately leading to a purchase decision (Petty and Cacioppo 1986). The more a design aligns with the consumer's aesthetic preferences, the more likely it is to elicit positive emotional responses and increase purchase intention.

Regarding wooden furniture consumption, decoration complexity influences aesthetic cognition, which in turn affects purchase intention. For instance, older consumers may show a higher intention to purchase furniture with complex traditional ornamentation due to cultural identity and familiarity, whereas younger consumers may prefer a minimalist design for its clean and modern visual appeal (Capdevila-Werning and Lehtinen 2021; Cao et al. 2024; Mao et al. 2024). Thus, exploring the interaction between age group and decoration complexity and the way in which these jointly affect aesthetic evaluation and purchase intention is theoretically and practically significant.

Research Questions

This study investigates how users of different age groups respond to variations in decoration complexity in wooden furniture, focusing on differences and interaction effects in aesthetic evaluation, purchase intention, and visual attention behavior. The specific research questions (RQs) are as follows.

RQ1: How do decoration complexity (complex vs. minimalist) and age (older vs. younger adults) influence aesthetic evaluation?

RQ2: How do decoration complexity (complex vs. minimalist) and age (older vs. younger adults) influence purchase intention?

RQ3: How do decoration complexity (complex vs. minimalist) and age (older vs. younger adults) influence eye-tracking behavior (including fixation duration and time to first fixation)?

Materials and Methods

This study adopted a mixed-methods approach using an explanatory sequential design. The quantitative component employed a 2 by 2 ([age group: older vs. younger adults] by [decoration complexity: complex vs. minimalist]) mixed experimental design. The dependent variables included aesthetic appreciation (7-point Likert scale), purchase intention (7-point Likert scale), and two eye-tracking metrics (fixation duration and time to first fixation). The qualitative component involved thematic analysis of data from semistructured interviews with participants.

Participants

A total of 80 participants were recruited and divided into two age groups: older adults ($n = 40$, ages 60 yr and older; M [mean] = 66.2, SD = 4.3) and younger adults ($n = 40$, ages 18 to 30 yr; $M = 22.6$, SD = 2.1). All participants had normal or corrected-to-normal vision and no history of neurological or psychological disorders. The older participant group was recruited from local community centers; the younger participant group comprised undergraduate and postgraduate students from a local university. All participants provided informed consent before the experiment. All participants were divided into two groups, with each group comprising 20 older adults and 20 younger adults; grouping was determined randomly.

Stimuli

The experimental stimuli comprised high-resolution three-dimensional renderings of wooden furniture specifically designed for this study. A total of eight furniture items (four chairs, four cabinets) were presented in two versions: complex decoration and minimalist decoration. Furniture design styling was based on traditional Ming-style Chinese furniture. In the minimalist version, decoration was limited to simple geometric lines, whereas the complex version incorporated additional traditional Chinese patterns to increase the level of complexity.

The traditional patterns in the complex chairs were found on the backrests; those in the complex cabinets appeared on the cabinet doors. Apart from the decorative elements, other visual attributes such as color tone, size, material, lighting, and perspective were kept constant to isolate the effects of decoration complexity. The stimuli used in the experiment are presented in the Appendix. In this study, the complex and minimalist independent variables corresponded to the two types of furniture stimuli (with and without traditional patterns).

The complex versions were labeled 1A to 8A, and their minimalist counterparts were labeled 1B to 8B. The first stimulus set included 1A, 2B, 3A, 4B, 5A, 6B, 7A, and 8B; the second set comprised the remaining eight images. Each stimulus set contained two complex chairs, two minimalist chairs, two complex cabinets, and two minimalist cabinets. In the eye-tracking experiment, participants in the first group were assigned to the first stimulus set, and participants in the second group were assigned to the second stimulus set. This arrangement was intended to avoid potential learning effects. Figure 1 presents examples of the furniture used in the study.

Apparatus

Eye-movement data were recorded using the Tobii Pro Fusion eye tracker, operating at a sampling rate of 120 Hz. Participants were seated approximately 60 cm from a 24-inch display monitor (1,920 × 1,080 resolution) with their heads stabilized using a chinrest to minimize movement artifacts. Before the formal experiment, each participant completed a five-point calibration procedure to ensure data accuracy. The eye-tracking analysis focused on participants' fixation behavior within areas of interest (AOIs), specifically the decorative regions of the furniture images.

Aesthetic appreciation and purchase intention were measured using two self-report rating scales. The first scale asked, "For the furniture you just saw, please choose a number from 1 to 7 to rate its aesthetic appeal, where a higher

Figure 1.—Example of the stimuli, including 1A, 2A, 5A, and 5B.

number indicates greater aesthetic appeal. A rating of 1 means extremely unattractive, and 7 means extremely attractive." The second scale asked, "For the furniture you just saw, please choose a number from 1 to 7 to indicate your purchase intention, where a higher number indicates a stronger intention to purchase. A rating of 1 means no intention to purchase at all, and 7 means a very strong intention to purchase."

The qualitative data were collected using a semistructured four-part interview guide: (1) general impressions and visual attention, (2) decorative style and aesthetic experience, (3) decorative style and purchase intention, and (4) additional comments or suggestions.

Experimental procedure

The experiment was conducted in a quiet and well-lit laboratory environment, with participants completing the tasks individually. After signing the informed consent form and completing a basic demographic questionnaire, participants proceeded with the eye-tracker calibration.

Each trial began with an instruction screen (Fig. 2). After participants confirmed their understanding, they clicked to begin the trial. A central fixation dot appeared on the screen for 1 second, followed by the display of the first stimulus (1A or 1B) for 20 seconds. Afterward, participants were prompted to rate the aesthetic appeal and purchase intention of the furniture item using a subjective rating interface. Following another 1-second fixation dot, the second stimulus (2B or 2A) was automatically presented, and the same evaluation process was repeated. This sequence continued until all eight stimuli had been viewed and rated.

Data analysis

The areas containing complex decorative elements in each furniture image were defined as AOIs. The AOIs were identically positioned and shaped across the complex and minimalist versions of each furniture item (Fig. 3). Fixation duration was defined as the total time participants spent fixating within the AOI; time to first fixation referred to the time elapsed from stimulus onset to the participant's first fixation within the AOI.

A series of two-way analyses of variance (ANOVAs) were conducted to examine the main and interaction effects of age group and decoration complexity on the four dependent variables: aesthetic rating, purchase intention, fixation duration, and time to first fixation. Where significant interactions were found, post hoc analyses were completed for further interpretation. Significance level was set at $\alpha = 0.05$, and effect sizes were reported using partial eta squared (η^2).

The qualitative data from the participants' interviews were transcribed, coded, and analyzed using thematic analysis to identify recurring patterns and insights related to aesthetic perception and decision-making.

Results and Discussion

Quantitative results

Descriptive statistics are presented in Table 1. The results of the two-way ANOVAs showed the main and interaction effects of age and decoration complexity on the four dependent variables (Table 2). Significant interaction effects were observed for purchase intention (Fig. 4) and time to first fixation (Fig. 5). Simple effects analyses were conducted to further explore these interactions; results are shown in Table 3.

Aesthetic appreciation

The quantitative results indicated a significant main effect of decoration complexity on aesthetic ratings, with complex furniture receiving significantly higher scores than minimalist furniture. However, neither the main effect of age nor the interaction effect between decoration complexity and age was significant, suggesting that participants across age groups consistently perceived complex furniture as more aesthetically pleasing. In other words, regardless of age, participants tended to appreciate the elaborately ornamented pieces more than the simple ones.

Eye-tracking measures provide insight into why complex designs were favored. Furniture with complex decorations drew visual attention more effectively—participants exhibited significantly longer fixation durations and shorter times to first fixation on the intricate decorative areas compared with the minimalist versions. This outcome illustrates that visually complex features immediately captured viewers' gazes and held their attention, which in turn can enhance the aesthetic experience by engaging viewers for a longer period. These objective findings support the idea that when visual complexity is appealing, it stimulates curiosity and interest, thereby heightening aesthetic enjoyment.

The interview responses support this connection between attention and aesthetic appeal. For example, one older participant remarked that pieces with elaborate carving "are definitely more beautiful... they make the furniture feel more high-end" (O21), emphasizing the way in which fine details elevated aesthetic impression of the furniture. A younger group participant who personally preferred minimalist styles likewise remarked that, "the complex ones were more eye-catching at first glance—they really grabbed my attention" (Y13). This immediate visual effect

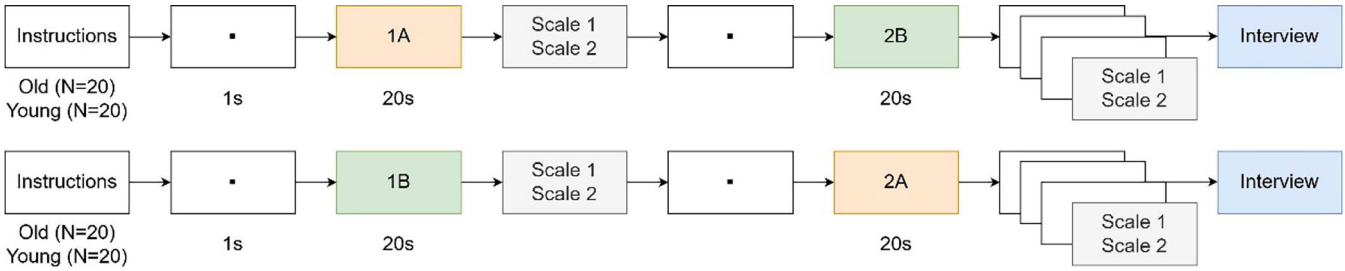

Figure 2.—Experimental process.

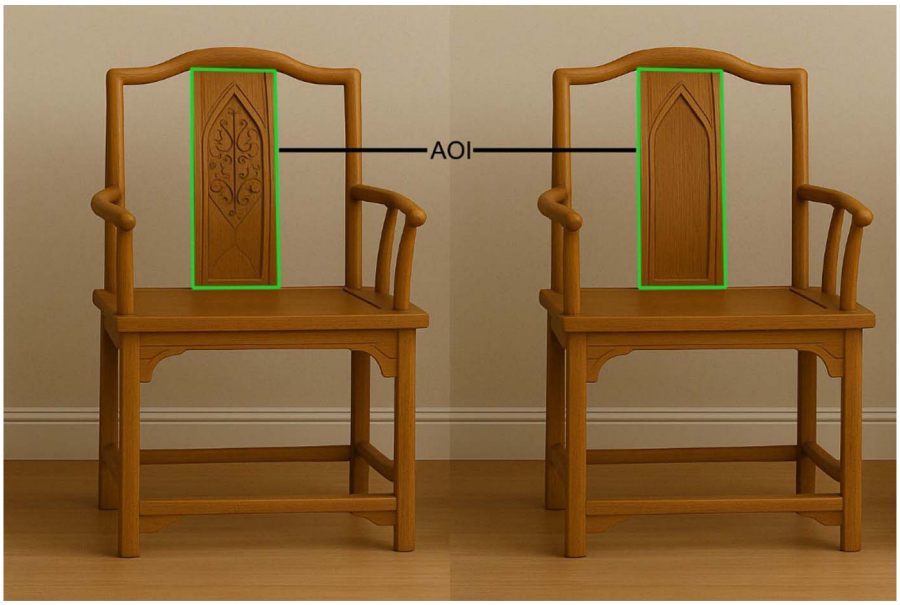

Figure 3.—Example of area of interest.

on younger viewers shows that even those inclined toward minimalism recognized the allure of complexity in drawing attention.

By contrast, minimalist furniture was easier to visually process at a glance (presumably due to its clean, sparse look) but often failed to sustain attention or excite viewers. Many participants found the minimalist designs less stimulating to look at for extended periods, which contributed to their lower aesthetic ratings for those pieces. One younger adult explained, "I prefer minimalist designs, but during the experiment, I tended to look away more quickly because there wasn't much to keep my attention" (Y26). An older participant made a similar point, noting that a minimalist piece, although "clean and neat," was missing "the kind of details that make something feel truly beautiful" (O33). These comments illustrate that the absence of ornate details in minimalist designs led to a briefer, less engaging viewing experience, leaving some viewers underwhelmed.

Table 1.—Descriptive statistics of aesthetic appreciation, purchase intention, fixation time, and time to first fixation.

Variable	Age	Decoration complexity	Mean	SD
Aesthetic appreciation	Older adults	Complex	5.50	0.78
		Minimalist	4.30	1.36
	Young adults	Complex	5.28	1.09
		Minimalist	4.45	1.06
Purchase intention	Older adults	Complex	5.13	0.91
		Minimalist	3.60	1.08
	Young adults	Complex	4.58	0.96
		Minimalist	4.13	1.20
Fixation time	Older adults	Complex	4.11	0.69
		Minimalist	2.74	0.87
	Young adults	Complex	4.06	0.69
		Minimalist	2.64	0.84
Time to first fixation	Older adults	Complex	0.61	0.36
		Minimalist	1.23	0.43
	Young adults	Complex	0.82	0.43
		Minimalist	0.86	0.49

This study's findings are consistent with classical theories of aesthetic response. According to visual complexity theory, a moderate level of complexity tends to enhance aesthetic pleasure (up to a point) by providing enough richness to intrigue the observer without causing confusion (Berlyne 1971). In this study, the complex decorations added substantial visual interest, which contributed to higher pleasure, whereas the minimalist designs may have been too sparse to elicit strong positive reactions.

Additionally, processing fluency theory offers a complementary explanation: People generally prefer stimuli that they can process fluently (easily) because fluent processing feels good (Reber et al. 2004). At first glance, one might expect simpler designs to be more fluently processed and thus preferred. However, this study's results suggest a nuanced interplay between fluency and interest. Although the complex designs presumably imposed a higher cognitive load, they also immediately captured and engaged attention. This result appears to have offset any processing difficulty by providing a rewarding sense of discovery and meaning, i.e., the initial attentional investment in decoding

Table 2.—Analysis of variance results for main effects and interaction effects of age and decoration complexity on four dependent variables.

Variable	Model	F	p	η^2
Aesthetic appreciation	Age	0.047	0.828	0.000
	Decoration complexity	34.342	<0.001	0.180
	Age × decoration complexity	1.178	0.280	0.007
Purchase intention	Age	0.006	0.940	0.000
	Decoration complexity	35.768	<0.001	0.187
	Age × decoration complexity	10.597	0.001	0.064
Fixation time	Age	0.396	0.530	0.003
	Decoration complexity	129.079	<0.001	0.453
	Age × decoration complexity	0.038	0.845	<0.001
Time to first fixation	Age	1.333	0.250	0.008
	Decoration complexity	24.045	<0.001	0.134
	Age × decoration complexity	18.329	<0.001	0.105

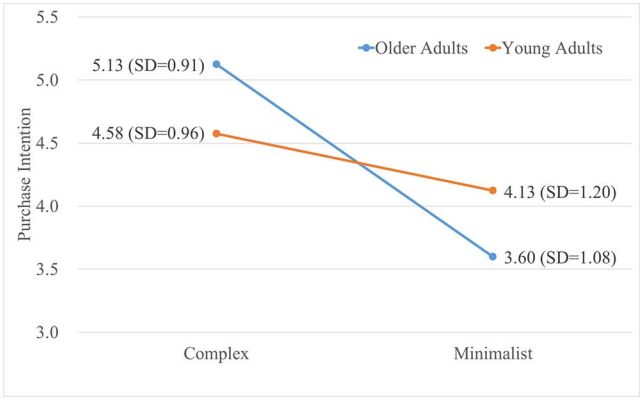

Figure 4.—Interaction effect of decoration complexity and age on purchase intention.

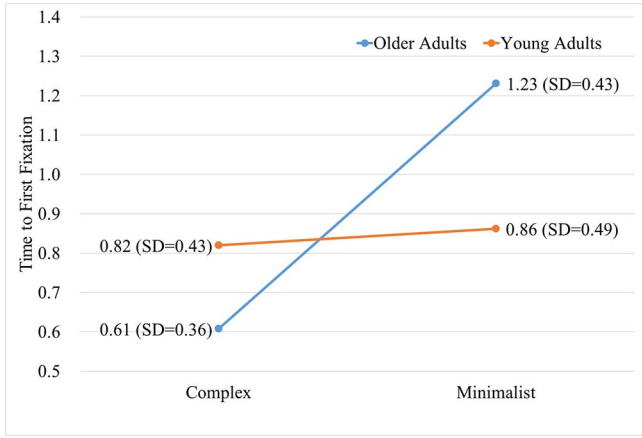

Figure 5.—Interaction effect of decoration complexity and age on time to first fixation.

the intricate patterns benefitted in a more gratifying aesthetic experience. This dynamic reflects the dual role of processing fluency in aesthetic judgment: Although especially complex stimuli can risk straining fluency, engaging with complexity can draw viewers in and ultimately boost their appreciation. This conclusion is supported by the prolonged fixations on and positive reactions to the ornate furniture in this study.

Purchase intention

Purchase intention was considerably affected by decoration complexity, in which intricate decorations rated notably higher than minimalist ones. Although the central factor of age was not significant, a meaningful interaction effect was observed (Fig. 4). Simple effects analysis revealed that older adults reported notably higher purchase intention for complexly decorated furniture than younger adults; conversely, for minimalist furniture, older adults showed significantly lower purchase intention than their younger counterparts. Among older adults, purchase intention was substantially higher for complex furniture than for minimalist designs, whereas younger adults did not show a large difference between the two styles. This result indicates that decoration complexity was a decisive factor for older consumers' purchase motivation but not for younger consumers.

The eye-tracking data suggest an explanation for this age-dependent pattern. The time to first fixation on the decoration (i.e., how quickly participants' gaze first landed on the decorative elements) differed by age in a way that paralleled the purchase intention scores. Older adults tended to fixate on the decorative details of complex designs much sooner than on those of minimalist designs, whereas younger adults' initial fixation times showed no significant difference between complex and minimalist decorations. In fact, older participants on average caught sight of the intricate ornamentation almost immediately, indicating that their attention was quickly drawn to these features. This rapid visual engagement with complex features likely contributed to their higher desire to own such pieces. By being pulled in almost instantly by the ornate craftsmanship, older adults may have formed a favorable impression early on, a reaction that can increase the likelihood of wanting to purchase the item.

Traditional design elements can provide a sense of value to furniture that resonates strongly with certain consumers (McQuiston 1989). In contrast, younger adults did not exhibit a bias in initial attention: Whether a piece was ornately or minimally decorated did not markedly change how quickly they looked at its decoration. This suggests that other factors beyond decoration style initially guided younger adults' attention (e.g., overall shape, color, personal interest), which may explain why adding complexity did not significantly sway their purchase intentions. Older adults' purchasing decisions appear closely linked to an immediate visual hook provided by complex details, whereas younger adults did not uniformly respond to such cues, possibly because their attention and purchase considerations were governed by a mix of different individual preferences (e.g., novelty, brand, practicality).

The pronounced preference of the older participants for complex decorations is likely rooted in their experience and cultural background (Cao et al. 2024; Mao et al. 2024). Many older participants associated the intricate designs with positive memories and values, which in turn enhanced their desire to own those pieces. For example, one older participant noted, "These intricate carvings reminded me of the old furniture we used to have at home. It feels familiar and more suited to our generation" (O9). This quote illustrates how complex, traditional ornamentation evoked nostalgia and a sense of cultural identity for the older adults: The furniture was not only visually appealing but also emotionally resonant. Another older adult added, "The complex decoration looks more refined and makes the furniture feel like it's worth the price" (O25). This sentiment suggests that older consumers equated ornamentation with craftsmanship and quality, leading them to perceive greater value in the complex pieces. Such perceptions would naturally elevate their intention to purchase because the product is seen as aesthetically pleasing and symbolically valuable.

Although younger participants acknowledged the beauty of the complex designs, they often expressed a preference for the minimalist style when actually considering a purchase. Their reasons were frequently related to practicality and compatibility with a modern lifestyle rather than an inherent dislike of ornamentation. For instance, one younger participant admired the ornate furniture but remarked, "I think complex furniture is beautiful, but it seems more fitting for traditional-style interiors. Minimalist design works better for modern homes and is easier to match with

Table 3.—Results of simple effects analyses for purchase intention and time to first fixation.

Variable	Factor	*I*	*J*	*I-J*	*F*	*P*	η^2
Purchase intention	Complex	Older adults	Young adults	0.55	5.548	0.020	0.034
	Minimalist	Older adults	Young adults	−0.525	5.055	0.026	0.031
	Older adults	Complex	Minimalist	1.525	42.651	<0.001	0.215
Time to first fixation	Complex	Older adults	Young adults	−0.212	4.888	0.028	0.030
	Minimalist	Older adults	Young adults	0.369	14.774	<0.001	0.087
	Older adults	Complex	minimalist	−0.623	42.180	0.000	0.213

other items" (Y19). The participant clearly appreciated the aesthetic of the complexly decorated piece yet hesitated to buy it because it might not blend well with contemporary home decor. Another young adult explained their stance more directly: "When I'm buying furniture, I care more about whether it's versatile rather than whether it has a lot of ornate patterns" (Y13).

Ensuring that the furniture can suit various contexts and is not overly specific in style highlights the fact that flexibility and simplicity were key priorities for the younger generation. In their view, excessive decoration can limit a piece's versatility, making it more difficult to integrate into different room styles or update in the future. These qualitative insights reinforce the notion of generational aesthetic differences. Each age group's preferences have been shaped by their past environment and their current needs and values. Older adults, influenced by a cultural context that cherishes traditional craftsmanship, tend to favor designs that carry a familiar stamp of tradition, whereas younger adults, living in a time where minimalism and modern simplicity are trendy, lean toward designs that reflect clarity and adaptability (Capdevila-Werning and Lehtinen 2021; Cao et al. 2024).

The link between visual attention and purchase intention can also be viewed through the lens of the Elaboration Likelihood Model of Persuasion in consumer psychology. Visually appealing features can capture a viewer's attention peripherally and encourage them to engage in central processing of the product's details (Petty and Cacioppo 1986). In this study, the complex decorations likely functioned as attention-grabbing cues that pulled participants into a deeper consideration of the furniture, thereby increasing their willingness to buy. The ornate carvings and patterns may have invited viewers to inspect the item more closely (as evidenced by longer fixations), during which the participants formed more elaborate positive thoughts about the product (e.g., craftsmanship, uniqueness, quality).

This deeper cognitive processing generated by the decorative complexity naturally enhances purchase intentions. By contrast, minimalist designs, although easy to process, offered fewer visual cues to spark such elaboration. They elicited a more muted persuasive effect on purchase motivation, especially among those viewers (such as many younger adults) who did not already favor the minimalist aesthetic. Decoration complexity not only improved the initial first impression of the furniture, but it also engaged viewers in a way that could influence decision-making, which is consistent with Elaboration Likelihood Model's predictions about attention and persuasion.

General discussion

Furniture with complex ornamentation elicited significantly longer fixation durations and shorter times to first fixation, indicating that decoration complexity immediately captures and sustains visual attention. This strong visual engagement, in turn, appears to foster positive aesthetic experiences and even heighten purchase interest. Participants' reflections reinforced this link between what the eyes notice and how the mind appraises value. For instance, one older adult remarked that spending extra time examining intricate carvings made the piece feel "more valuable—more worth buying," directly tying prolonged gaze to a greater desire to purchase (O4).

Conversely, some younger participants acknowledged that especially plain designs failed to hold their attention for long, yielding only a brief glance with little urge to buy. This is an indication that a lack of visual detail can dampen consumer interest (Cheng and Zhang 2023). These qualitative impressions underscore the general pattern that visually complex traditional features command attention and enhance appeal, whereas overly sparse designs may not stimulate sufficient interest to drive an aesthetic or purchase decision (Zong et al. 2023; Liu and Zhao 2024).

The convergence of eye-tracking metrics with subjective evaluations strengthens the theoretical understanding of how visual complexity influences user experience. In line with visual complexity theory and processing fluency theory, these findings suggest that ornate details, when meaningful to the viewer, can enrich aesthetic evaluation without overwhelming the perceiver (Rayner 1998; Nadal et al. 2008). Complex decorative elements provided a depth that attracted the eye and kept participants engaged, supporting the idea that a moderate level of complexity (especially if culturally relevant) enhances aesthetic pleasure (Liu and Zhao 2024; Mao et al. 2024).

This sustained attention did not appear to impede processing fluency in a detrimental way; instead, the rapid initiation of focus on intricate areas and the continued exploration of those details appeared to boost the overall aesthetic experience. Thus, the eye-tracking evidence reinforces that an interplay occurs between bottom-up visual interest and top-down cognitive appreciation (Singh and Sarkar 2025): Elaborate visuals draw the gaze. This invested attention may translate into more favorable evaluations and a higher likelihood of wanting the product. This finding has practical significance for design psychology and marketing because it empirically links design complexity with consumers' emotional and behavioral responses.

The relationship between visual attention and cognitive appraisal was modulated by age, pointing to different underlying attentional strategies in older versus younger adults. A significant age-decoration interaction was observed in eye-tracking patterns. Older adults fixated on complex decorative features much more quickly than younger adults; their eyes were drawn almost immediately to ornate details, suggesting that such features aligned closely with previous

visual experiences and expectations (Cao et al. 2024). This rapid orienting response implies a strong top-down influence on their attention. The older viewers likely possess well-established mental schemas for traditional design elements, causing culturally familiar patterns to materialize as salient and meaningful stimuli (Boutyline and Soter 2021). In cognitive terms, their attention was guided by schema-driven processing, where encountering an intricate motif instantly activated a relevant cultural schema (e.g., traditional craftsmanship), which in turn directed their gaze and interpretation (Prameswari et al. 2017).

In contrast, younger adults did not show a notable difference in initial fixation time between complex and minimalist styles, reflecting an absence of automatic bias toward ornamentation. Their visual attention appeared more evenly distributed, guided by bottom-up stimulus features or personal preferences rather than by predefined schemas (Nayak and Karmakar 2019). Younger participants may rely on diverse, individualized criteria, such as novelty, functional suitability, or stylistic preference, when scanning furniture (Bernard and Schulze 2005). This detail could explain why added complexity did not especially capture younger adults' immediate attention. Without a strong internal schema or interest for ornate details, they approached complex and simple designs with a more open or varied focus strategy. These results indicate that older adults bring a different cognitive lens to the viewing experience, one honed by cultural and experiential context, whereas younger adults engage in a more exploratory or utilitarian viewing pattern.

The interview narratives further illuminate how these age-related attentional differences are rooted in distinct cognitive-emotional responses to design. The older adults frequently described an instant sense of familiarity and appreciation when looking at elaborate decorations, reinforcing the notion that their attention was being directed by long-standing cultural frameworks (Prameswari et al. 2017). One older participant summarized, "When I see carved patterns like those, I immediately think of traditional craft—it feels cultural and valuable" (O31). This comment exemplifies how an ornate visual can trigger a cascade of recognition and meaning for an older viewer. The carved patterns promptly activated the participant's cultural schema of traditional craftsmanship, giving the decoration an immediate emotional value (Ha and Lennon 2010; Yu et al. 2022). The older adult's top-down expectations, shaped by decades of exposure to classic designs, caused them to notice and cherish details that fit those expectations. This schema-driven attentional boost led not only to quicker visual focus but also a deeper personal resonance with the object (Giorgi 2017).

In comparison, younger adults often emphasized simplicity and practicality over decorative richness, indicating a different attentional mindset. One younger participant stated that they "wouldn't necessarily look at the complex decoration first," and that too much ornamentation could feel like "visual overload" (Y11). This perspective reveals that highly intricate details did not automatically attract the younger viewer's eye and, in fact, could detract from their viewing experience by introducing unwanted complexity (Guo et al. 2021). Many younger participants prioritized whether a piece would fit well into their modern lifestyle and living space (Mao et al. 2024). Another participant noted that what really matters to them is whether a furniture design is "easy to match and clean—not what the patterns mean" (Y22). This pragmatic outlook shows that younger adults tend to direct their attention in a bottom-up manner toward aspects of the product that align with their goals (e.g., compatibility, ease of maintenance) rather than toward decorative symbolism.

Together, these qualitative insights echo the quantitative findings: Older adults leverage cultural knowledge to guide their gaze and find meaning in visual details, whereas younger adults filter their attention through present-day functional and stylistic priorities. This pattern aligns with generational aesthetic preference theories, which propose that each age group's design responses are grounded in their distinct cultural experiences (Djamasbi et al. 2011; Cao et al. 2024). The older generation's cultural schemas afford them quicker recognition and emotional engagement with traditional motifs; the younger generation places greater value on visual clarity and contextual fit.

Overall, the evidence suggests that decoration complexity can enhance engagement and appreciation for both age groups, but its impact operates through different cognitive pathways. Older adults rely more on top-down, schema-informed attention, which makes ornately decorated furniture especially appealing and meaningful to them. Younger adults approach design in a more bottom-up or goal-driven fashion; they typically find excessive ornamentation less inherently attractive and sometimes even distracting. This divergence implies that design and complexity should be calibrated to age-related attention patterns (Lambert-Pandraud and Laurent 2010; Slootweg and Rowson 2018). For the older consumers, products that highlight cultural symbolism and finely crafted details are likely to evoke positive attention and emotional responses. The quick hook of a complex motif for an older audience can be leveraged by emphasizing heritage, craftsmanship, and the story behind the patterns, thereby aligning with schema-based expectations (Prameswari et al. 2017; Boutyline and Soter 2021).

However, for younger consumers, less is often perceived as more. Minimalist or moderately decorated pieces that preserve clean lines and ease of integration into contemporary interiors align better with their preferences (Wibowo and Zainudin 2024). In fact, highly ornate designs may be consciously avoided by younger adults if such features clash with the streamlined aesthetic of their living spaces. Research notes that younger consumers are generally more receptive to simplicity, finding coherence and modern style more valuable than embellishment (Li 2022; Wibowo and Zainudin 2024).

Using this information, furniture companies should consider differentiated offerings for the two age groups (Slootweg and Rowson 2018; Yu et al. 2023). Design collections rich in traditional detail and cultural reference could be tailored for older adults who seek the familiar complexity, whereas sleek, adaptable designs could be aimed at younger adults who value simplicity and functionality. By acknowledging the schema-driven attention of older adults and the pragmatic visual approach of younger adults, designers and marketers can better meet each group's aesthetic expectations and enhance overall user engagement with the product. This nuanced understanding of age-modulated visual attention not only addresses the evaluative differences observed in this study but also provides a more cognitively

informed basis for guiding design decisions and predicting consumer behavior across generations.

Contributions

This study revealed the interrelationships among decoration complexity, age differences, and visual attention behavior and linked them to aesthetic appreciation and purchase intention. In doing so, it established a cross-level theoretical integration model. The findings not only support the validity of visual complexity theory and processing fluency theory but also extend the applicability of generational aesthetic preference theory in the context of design cognition (Berlyne 1971; Reber et al. 2004; Cao et al. 2024; Mao et al. 2024).

The results of this study offer multiple practical implications for the design and marketing of traditional furniture products. From a design perspective, greater attention should be given to the role of decoration complexity in capturing visual attention, particularly its value in enhancing initial attraction and aesthetic impressions. Complex decoration not only significantly prolongs fixation time but also triggers faster initial gaze focus, positively influencing users' perceived quality and emotional response. Through optimized pattern layout and structural integration, furniture companies can preserve traditional elements while refining their presentation to convey cultural aesthetics rather than overwhelming visual clutter.

Design and promotional strategies should be tailored to the preferences of different age groups. For older consumers, products should emphasize cultural symbolism and craftsmanship, such as fine carving and traditional motifs that elicit emotional resonance. For younger users, decoration density and complexity should be moderated to enhance compatibility with modern interiors and convey a minimalist yet thoughtful aesthetic. One young participant noted, "Minimalism doesn't mean boring—if there's some subtle design within simplicity, it actually makes it more appealing to us."

Finally, from a marketing communication standpoint, product promotion should highlight the first-glance appeal and the refined detailing of furniture with a focus on visual experience. New media techniques such as augmented reality visualization and interactive videos can showcase how decorative elements capture attention, thereby strengthening brand association and increasing purchase intention.

Limitations

Despite offering a systematic integration of subjective evaluations, eye-tracking data, and qualitative interviews, this study has several limitations that warrant further exploration. Although variables such as tone, material, and perspective were controlled, the stimuli were computer-generated renderings rather than real objects. This may have affected participants' spatial perception, material authenticity, and contextual immersion, potentially biasing their aesthetic judgments and purchase intentions. Future research could incorporate augmented or virtual reality technologies or physical samples to improve ecological validity.

In the present study, decoration complexity was operationalized solely by the presence or absence of traditional patterns; objective criteria such as fractal dimension, visual element density, or other computational measures to distinguish complexity levels were not applied. Future research should refine this variable by incorporating quantitative indices to enhance its construct validity.

Although participants were divided by age group, the overall sample size was relatively limited. The study also lacked control over other potentially influential demographic variables such as gender, education level, and living environment. Moreover, all participants were from China, which may limit the generalizability of the findings in international contexts. All participants in the younger group were students; therefore, caution should be exercised when generalizing the findings to nonstudent populations. Future studies should include more diverse participant profiles to enhance external validity.

The participant interviews provided strong qualitative support, but duration was brief, and the questions were narrowly focused. Deeper psychological constructs such as cultural identity and aesthetic values were not fully explored. Follow-up studies could adopt longitudinal interviews or cultural prototype analysis to uncover the underlying psychological drivers of generational aesthetic evaluation.

Finally, although eye-tracking data offer objective insights into visual behavior, psychological interpretation relies on complementary measures. To minimize participant burden, respondents answered only one question after viewing each stimulus to assess aesthetic appreciation. Although this single-item scale reduced fatigue, the lack of multidimensional data may be insufficient. Future research may integrate physiological signals such as electroencephalography or galvanic skin response to construct a multimodal model of user cognition and provide a more comprehensive understanding of the relationship between furniture design and user psychology. In addition, the collection of subjective data should be further optimized to ensure high reliability and validity of the instruments and to maintain participant engagement.

Conclusions

This study examined the effects of decoration complexity and age on aesthetic appreciation, purchase intention, and visual attention in the context of wooden furniture, using an explanatory sequential mixed-methods design. The findings revealed a noteworthy main effect of decoration complexity, with complexly decorated furniture receiving higher aesthetic and purchase ratings and greater visual engagement. In particular, older adults exhibited quicker visual focus and stronger purchasing inclination toward complex decorations, suggesting a deeper emotional connection with traditional styles. Although younger adults preferred minimalist styles that emphasize clarity and modernity, they did not entirely dismiss the visual appeal of complex designs in their subjective evaluations.

Furniture decoration is not merely a matter of stylistic expression—it is also a powerful driver of user cognition, emotion, and behavior. Designers should align decoration strategies with the visual preferences and psychological traits of different user groups, integrating traditional cultural elements with modern perceptual needs to achieve a balance of aesthetic, emotional, and commercial value.

Literature Cited

Berlyne, D. E. 1971. Aesthetics and Psychobiology. Appleton-Century-Crofts, New York. http://archive.org/details/aestheticspsycho0000berl

Bernard, J. and W. Schulze. 2005. The next new thing: Curiosity and the motivation to purchase novel products. *Econ. Bul.* 3(32):1–8.

Boutyline, A. and L. K. Soter. 2021. Cultural schemas: What they are, how to find them, and what to do once you've caught one. *Amer. Soc. Rev*. 86(4). https://doi.org/10.1177/00031224211024525

Cacciola, D. 2022. Marcel Breuer, the Wassily chair and the 'frozen' Bauhaus Modernism after 1945. *J. Design Hist*. 35(3):247–264. https://doi.org/10.1093/jdh/epac001

Cao, Z., M. Mustafa, M. H. M. Isa, and Y. Mao. 2024. Collision of tradition and visual perception: Aesthetic evaluation and conservation intent in adapting traditional Chinese gates within architectural heritage. *J. Asian Arch. Build. Eng*. 1–18. https://www.tandfonline.com/doi/abs/10.1080/13467581.2024.2428273

Capdevila-Werning, R. and S. Lehtinen. 2021. Intergenerational aesthetics: A future-oriented approach to aesthetic theory and practice. *Phil. Inq.* 9(2):2. https://doi.org/10.4454/philinq.v9i2.343

Cheng, P. and C. Zhang. 2023. Show me insides: Investigating the influences of product exploded view on consumers' mental imagery, comprehension, attitude, and purchase intention. *J. Retail. Cons. Serv*. 70:103168. https://doi.org/10.1016/j.jretconser.2022.103168

Djamasbi, S., M. Siegel, J. Skorinko, and T. Tullis. 2011. Online viewing and aesthetic preferences of Generation Y and the Baby Boom Generation: Testing user web site experience through eye tracking. *Int. J. Elec. Comm*. 15(4):121–158. https://doi.org/10.2753/JEC1086-4415150404

Giorgi, S. 2017. The mind and heart of resonance: The role of cognition and emotions in frame effectiveness. *J. Manage. Stud*. 54(5):711–738. https://doi.org/10.1111/joms.12278

Guo, F., J. Chen, M. Li, L. Wei, and J. Zhang. 2021. Effects of visual complexity on user search behavior and satisfaction: An eye-tracking study of mobile news apps. *Univ. Acc. Inform. Soc*. 21:795–808. https://doi.org/10.1007/s10209-021-00815-1

Ha, Y. and S. J. Lennon. 2010. Effects of site design on consumer emotions: Role of product involvement. *J. Res. Interact. Market*. 4(2):80–96. https://doi.org/10.1108/17505931011051641

Hagtvedt, H. 2022. A brand (new) experience: Art, aesthetics, and sensory effects. *J. Acad. Market. Sci*. 50(3):425–428. https://doi.org/10.1007/s11747-021-00833-8

Lambert-Pandraud, R. and G. Laurent. 2010. Why do older consumers buy older brands? The role of attachment and declining innovativeness. *J. Market*. 74(5):104–121. https://doi.org/10.1509/jmkg.74.5.104

Li, R. 2022. A study on furniture design based on young people's consumption preference—Takes sofa as an example. *In:* Proceedings of the 2022 2nd International Conference on Economic Development and Business Culture (ICEDBC 2022), Dali, China, YEAR, City of Conference, State/Country; Atlantis Press, Dali, China. pp. 817–826. https://doi.org/10.2991/978-94-6463-036-7_120

Liu, L. and H. Zhao. 2024. Research on consumers' purchase intention of cultural and creative products—Metaphor design based on traditional cultural symbols. *PLoS One* 19(5):e0301678. https://doi.org/10.1371/journal.pone.0301678

Ma, C., H. Wang, and C. Xue. 2022. Research on the relationship between the aesthetics of interface elements layout and visual working memory. *In:* HCI International 2022—Late Breaking Papers. Design, User Experience and Interaction. M. Kurosu, S. Yamamoto, H. Mori, M. M. Soares, E. Rosenzweig, A. Marcus, P.-L. P. Rau, D. Harris, & W.-C. Li (Eds.). Springer International Publishing, City, State/Country. pp. 597–607. https://doi.org/10.1007/978-3-031-17615-9_42

Mao, Y. 2024. Influence of material and decoration on design style, aesthetic performance, and visual attention in Chinese-style chairs. *Forest Prod. J*. 74(3):220–232. https://doi.org/10.13073/FPJ-D-24-00017

Mao, Y., P. Li, and P. Hao. 2024. The effects of wooden furniture color, floor material, and age on design evaluation, visual attention, and emotions in office environments. *Build*. 14(6):6. https://doi.org/10.3390/buildings14061498

McQuiston, D. H. 1989. Novelty, complexity, and importance as causal determinants of industrial buyer behavior. *J. Market*. 53(2):66–79. https://doi.org/10.1177/002224298905300205

Nadal, M., E. Munar, M. À. Capó, J. Rosselló, and C. J. Cela-Conde. 2008. Towards framework for the study of the neural correlates of aesthetic preference. *Spatial Vis*. 21(3–5):379–396. https://doi.org/10.1163/156856808784532653

Nayak, B. K. and S. Karmakar. 2019. A review of eye tracking studies related to visual aesthetic experience: A bottom-up approach. *In:* Research into Design for a Connected World. A. Chakrabarti (Ed.). Springer, Singapore. pp. 391–403. https://doi.org/10.1007/978-981-13-5977-4_33

Petty, R. E., and J. T. Cacioppo. 1986. The elaboration likelihood model of persuasion. *In:* Advances in Experimental Social Psychology. L. Berkowitz (Ed.). Academic Press, California, USA. pp. 123–205. https://doi.org/10.1016/S0065-2601(08)60214-2

Prameswari, I., H. Hibino, and S. Koyama. 2017. The role of cultural schema in developing culture-based product design. *J. Sci. Design* 1(1):57–66. https://doi.org/10.11247/jsd.1.1_1_57

Rayner, K. 1998. Eye movements in reading and information processing: 20 years of research. *Psychol. Bull*. 124(3):372–422. https://doi.org/10.1037/0033-2909.124.3.372

Reber, R., N. Schwarz, and P. Winkielman. 2004. Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? *Personality Soc. Psychol. Rev*. 8(4):364–382. https://doi.org/10.1207/s15327957pspr0804_3

Singh, J. and P. Sarkar. 2025. Understand and quantify the consumers' cognitive behavior for the appropriateness features of product aesthetics through the eye-tracking technique. *Int. J. Inter. Design Manufac. (IJIDeM)* 19(2):1263–1296. https://doi.org/10.1007/s12008-023-01656-3

Slootweg, E. and B. Rowson. 2018. My generation: A review of marketing strategies on different age groups. *Res Hospitality Manage.* 8(2):2. https://doi.org/10.1080/22243534.2018.1553369

Urbano, I. C. V. P., J. P. V. Guerreiro, and H. M. A. A. Nicolau. 2022. From skeuomorphism to flat design: Age-related differences in performance and aesthetic perceptions. *Behav. Infor. Tech*. 41(3):452–467. https://doi.org/10.1080/0144929X.2020.1814867

Wan, Q., Q. Hu, B. Chen, H. Fang, Q. Ke, and S. Song. 2021. Study on the visual cognition of laminated bamboo furniture. *Forest Prod. J.* 71(1):84–91. https://doi.org/10.13073/FPJ-D-20-00063

Wan, Q., G. G. Wang, Y. C. Zhang, S. S. Song, B. H. Fei, and X. H. Li. 2018. Cognitive processing toward traditional and new Chinese style furniture: Evidence from eye-tracking technology. *Wood Res*. 63(4):727–739.

Wibowo, M. C. and A. Zainudin. 2024. The influence of minimalist design elements on visual preferences of Generation Z: A quantitative study. *Int. J. Graph. Design* 2(2):236–247. https://doi.org/10.51903/ijgd.v2i2.2133

Xue, Y., J. Cai, Q. Lin, and M. Song. 2025. An aesthetic emotion model for Chinese Ming-style furniture patterns. *Empirical Stud. Arts* 43(1):276–304. https://doi.org/10.1177/02762374241253141

Ye, J., J. Cheng, L. Xi, and W. Xiao. 2015. Using eye tracking technology to evaluate new Chinese furniture material design. *In: HCI International 2015—Posters' Extended Abstracts*. C. Stephanidis (Ed.). Springer International Publishing, City, State/Country. pp. 450–455. https://doi.org/10.1007/978-3-319-21380-4_76

Yu, L., X. Feng, J. Wang, W. Kong, and W. Chen. 2022. Research on the mechanism of emotional design in Chinese cultural and creative products. *Heritage Sci*. 10(1):119. https://doi.org/10.1186/s40494-022-00751-0

Yu, S., Q. Zheng, T. Chen, H. Zhang, and X. Chen. 2023. Consumer personality traits vs. their preferences for the characteristics of wood furniture products. *Bioresource* 18(4):7443–7459. https://doi.org/10.15376/biores.18.4.7443-7459

Zheng, Y. 2022. Study on the application of Chinese traditional visual elements in visual communication design. *Math. Prob. Eng.* e1020033. https://doi.org/10.1155/2022/1020033

Zong, Z., X. Liu, H. Gao. 2023. Exploring the mechanism of consumer purchase intention in a traditional culture based on the theory of planned behavior. *Front. Psychol.* 14. https://doi.org/10.3389/fpsyg.2023.1110191

Appendix

No.	Stimulus
1A	
1B	

Continued.

No.	Stimulus
2A	
2B	

Continued.

No.	Stimulus
3A	
3B	

Continued.

No.	Stimulus
4A	
4B	

Continued.

No.	Stimulus
5A	
5B	

Continued.

No.	Stimulus
6A	
6B	

Continued.

No.	Stimulus
7A	
7B	

Continued.

No.	Stimulus
8A	
8B