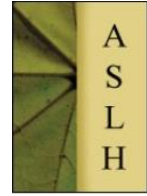





# Reframing Material Perception: A Psychometric Model of Premium Wood Furniture Consumption



Andrea REMÉNYI\*

József Cziraki, Doctoral School of Wood Sciences and Technologies, Faculty of Wood Engineering and Creative Industries, University of Sopron, Sopron, Hungary

Reményi A.  0009-0000-9472-1658

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## ABSTRACT

Wood is an economically, culturally, and ecologically significant material that manifests through complex perceptual and psychological responses in the context of premium furniture consumption. This study introduces the Composite Material Resonance Index (CMRI). The index derives from an empirically validated impact model grounded in neuroaesthetics and identity psychology. It integrates sensory, emotional, value-based, and identity-related experiences associated with wood-based furniture consumption within a unified measurement framework. A quantitative study conducted on an international sample of 145 respondents operationalizes attachment to wood material across 11 phases and nine indices, from initial perception to integration with self-identity. The results indicate that visual proportionality, perceived naturalness, and identity resonance exert a significant influence on consumer identification, emotional engagement, and purchase intention. The CMRI serves as a strategic decision-making tool for product development, brand communication, and forest-based sustainability innovations.

## TANULMÁNY INFÓ

### Kulcsszavak:

Faalapú termékstratégia  
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## KIVONAT

**Az anyagészlelés újraértelmezése: a prémium fa bútorfogyasztás pszichometriai modellje.** A fa mint anyag gazdasági, kulturális és ökológiai jelentőséget hordoz, amely komplex érzékelési és pszichológiai reakciókban nyilvánul meg a prémium bútorok fogyasztásakor. Ez a tanulmány bemutatja a neuroesztétikai és identitáspszichológiai alapokra épülő, empirikusan validált hatásmodellből származtatott Composite Material Resonance Indexet (CMRI), amely a faalapú bútorfogyasztás során megjelenő szenzoros, érzelmi, értékalapú és identitásrezonanciához kapcsolódó tapasztalatokat egységes mérési keretben integrálja. Egy 145 válaszadóból álló nemzetközi mintán végzett kvantitatív tanulmány a faanyaghoz való kötődést tizenegy fázisban és kilenc indexben ülteti át a gyakorlatba, a kezdeti észleléstől az önazonossággal való integrációig. Az eredmények azt mutatják, hogy a vizuális arányosság, az észlelt természetesség és az identitásrezonancia jelentős hatással van a fogyasztói azonosulásra, az érzelmi elkötelezettségre és a vásárlási szándéokra. A kommunikált és tapasztalt minőség közötti szinkronitás, valamint az anyag önreprezentációs funkcióinak erősítése révén a modell és a CMRI alkalmazható stratégiai döntéstámogató eszközként a termékfejlesztés, a márkakommunikáció és az erdőalapú fenntarthatóság innovációk területén.

\* Corresponding author: [remenyi.andrea@uni-sopron.hu](mailto:remenyi.andrea@uni-sopron.hu); H-9400 SOPRON, Bajcsy-Zs. u. 4, Hungary

## 1 INTRODUCTION

Wood has become a powerful symbolic (Csikszentmihalyi – Rochberg-Halton, 1981; Dormer, 1997) and identity-shaping medium (Hosey, 2012; Manna, 2025) in the premium furniture industry in the past decade. Consumers are increasingly seeking natural and sustainable materials that evoke emotional attachment and deliver an aesthetic experience (Al Darwish, 2023). The sensory complexity of wood—its touch, scent, and visual character—triggers psychological and cultural activation that transcends its physical properties (Thakral et al., 2012; Dharsono 2025).

Wood functions as a mediator of aesthetic coherence, craftsmanship, and identity resonance in the premium furniture segment. Beyond durability and design dimensions, customers search for qualities that align with their values and self-image (Karana et al., 2015; Pedgley et al., 2020). Perceptual psychology and neuroaesthetics tools offer a novel approach for interpreting this complex system of relationships (Earnshaw, 2017). Such tools enable the measurement and structured interpretation of emotional, identity-based, and aesthetic responses—allowing for the development of models that extend beyond simple market preferences and identify deeper patterns (Oliver, 2010; Manu et al., 2022). The validated Perceptual Impact Model (Reményi, 2025) was built on such principles. Through its nine psychometric indicators, the model empirically demonstrated that aesthetic cohesion levels significantly influence the allure of premium wooden furniture (Sztuka et al., 2025). And craftsmanship. The model also reveals how these align with personal values. Indices such as the Emotional Sensory Load Index (ESLI), Perceived Craft Distinctiveness Index (PCDI), Aesthetic Cognitive Activation Index (ACAI), and Identity Resonance Quotient (IRQ) were developed as parts of the model and interpret customer experience in a structured, quantitative manner.

The nine individual indicators showed significant intercorrelations and collectively described the affective and motivational responses to premium wooden furniture. In light of this, a synthesizing indicator that forms a new, complex metric by combining the previous indices was introduced. The new indicator, the Composite Material Resonance Index (CMRI), aims to create a summary value from the intersection of psychological and sensory responses, representing resonance with the material as a unified experience.

This step opens up new opportunities for design, brand communication, and product positioning. The CMRI places aesthetic, moral, and identity-related interpretations of wood within a broader framework, thus supporting conscious and differentiated product development. This study presents the theoretical foundations, computational logic, and application of CMRI using the previous dataset, examining its relationship with consumer behavior and decision-making mechanisms.

## 2 MATERIALS AND METHODS

### 2.1 Research context

The research was conducted within a well-defined perceptual and experiential investigation space, interpreted through the perspective of a targeted user group—individuals who consciously consume and interpret premium wood-based furniture. Utilizing online data collection tools, the study focused on globally emerging patterns of wood perception within a socially and culturally embedded, intellectually engaged environment. The sample predominantly consisted of highly educated, urban individuals with an openness to cultural goods and a demonstrated interest in premium product categories. Most participants exhibited a high degree of aesthetic sensitivity and were receptive to themes related to natural materials,

sustainability, and value-driven decision-making, making them especially relevant for exploring the neuroaesthetic and identity-related aspects of wood perception.

This perceptual research zone was delineated based on participant material preferences, decision-making rationales, and psychological response patterns related to wood. Mapping this interpretive domain was essential to develop and validate the eleven distinct indices that capture the various dimensions of wood perception—from sensory detection and moral significance to purchase intention. This conceptual approach also set the groundwork for the present study's new research objective: integrating these individual dimensions into a composite, synthesizing indicator.

## **2.2 Data collection**

The research was conducted using a quantitative methodology, through an online questionnaire completed by 145 participants as part of a doctoral-level study. Respondents were selected from an international professional network comprising approximately 5,566 individuals, developed over the years through academic and research collaborations. While access to the network was random, the sampling at the entry level was deliberately targeted: only individuals who owned premium wood-based furniture were included, thereby ensuring strong thematic relevance for the study. As a result of this targeted filtering, the sample primarily consisted of highly educated, urban individuals who demonstrated openness toward design-oriented products, sustainable consumption, and objects of high aesthetic value. An additional inclusion criterion required that participants own at least one high-end, solid wood furniture item purchased within the past five years. This screening mechanism ensured that the study's target group exhibited a heightened affinity for natural materials and was well-suited for exploring neuroaesthetic and identity-related aspects of wood perception.

The responses enabled the statistical construction and empirical validation of a psychometric model consisting of eleven distinct indicators. These indicators captured complex dimensions, including multisensory engagement, aesthetic coherence, craftsmanship perception, material attachment, alignment with sustainability values, and symbolic self-identification. The resulting dataset offered sufficient statistical power ( $n = 145$ ,  $\alpha = 0.05$ , CI 95%) to reliably investigate affective, cognitive, and identity-based perceptions related to material experience. The model's refined structure facilitated the detection of emotional resonance and decision-making patterns within the context of premium consumption.

The online questionnaire was distributed via the Google Forms platform, allowing for efficient international outreach. Responses were collected using a five-point Likert scale (1 = not at all characteristic, 5 = fully characteristic), with whole-number values only. Each item aligned closely with the model's core dimensions, including sensory perception, identity resonance, durability perception, moral satisfaction, aesthetic experience, and purchase intensity. The goal of the data collection process was to generate a dataset with sufficient dispersion and interpretable patterns, enabling the statistical validation of the neuroperceptual model. Participant anonymity was ensured, and all data handling procedures strictly adhered to established ethical research standards.

## **2.3 The applied model**

The initial framework was provided by the previously developed and validated Perceptual Impact Model (see *Figure 1*), which conceptualized the emotional, aesthetic, and identity-based dimensions of wood furniture perception as a phased process. The model is structured into temporally sequenced phases, illustrating how perceptions concerning a product's provenance, material quality, and sensory attributes contribute to emotional activation and the emergence of consumer desire. At its core, the model identifies six foundational value domains—

sustainability, material and quality, durability, craftsmanship, art and design, and heritage—each functioning as a multidimensional perceptual field that facilitates both affective responses and identity construction. *Table 1* systematically outlines these phases, along with their perceptual constituents and guiding diagnostic questions.

The initial stage involves the cognitive processing of sensory stimuli, where emotional responses—such as the scent, tactility, and visual rhythm of wood—become intertwined with cultural associations and autobiographical memory (Bond et al., 2024). Empirical findings underscore the influence of multisensory input. Notably, the influence of tactile and visual features on perceptions of material authenticity and brand image (Danielsson, 2025; Wang et al., 2025). In the second phase, the model introduces the concept of perceived quality, shaped by the alignment (or misalignment) between anticipated attributes and actual product experience. This interpretation is congruent with predictive coding theory, which posits that expectations modulate sensory interpretation and that deviations from expectation directly influence perceived credibility and authenticity (Ji – Lin, 2022). At the third phase, product identification emerges, wherein the premium wooden object becomes assimilated into the individual’s self-concept, reflecting personal values, aesthetic preferences, and socio-cultural positioning (Kim – Heo, 2021). The inherent naturalness and visual individuality of wood facilitate processes of self-extension, echoing psychodynamic models of emotional attachment. This culminates in the final phase: emotional engagement, which is elicited through repeated, positive valence interactions, particularly when enhanced by artisanal craftsmanship, rich sensory stimulation, and authentic narrative frameworks.



*Figure 1. The perceptual impact model. The model illustrates sequential perceptual and evaluative layers, progressing from sensory experience through identity-related appraisal to the emergence of purchase desire.*

These mechanisms engage neural reward pathways (Ko, 2017; Spence, 2020), often reinforced by implicit memory traces related to material durability and the tactile familiarity of previous experiences (Harju – Lähtinen, 2021). Within this framework, emotional loyalty extends beyond conventional brand attachment, representing a deeper, identity-oriented form of commitment, particularly among consumers whose values align with slow design principles and sustainable living practices (Al Darwish, 2023).

The model ultimately converges in the emergence of purchase desire, conceptualized as the integrative outcome of preceding perceptual and affective stages. The intensity of decision-making is notably amplified when aesthetic, ethical, and sensory resonance is established between the consumer and the product (Kim – Heo, 2021). As a result, the act of purchasing transcends mere economic exchange and evolves into an expression of aesthetic identity, cultural belonging, and multisensory value integration.

*Table 1. Perceptual impact model – overview table (Reményi, 2025)*

Components and layers	Significance	Source	Key questions
Heritage	The symbolic meanings of wood tied to collective cultural memory evoke identity-level evaluations.	Bond et al. (2024)	Through which neurosocial mechanisms does wood trigger associations with cultural heritage, and how does this affect long-term value perception?
Art and Design	The aesthetic symmetry of design elicits visual dopamine responses and aids memory encoding.	Spence (2020)	To what extent do texture and formal proportions of wooden furniture influence aesthetic experience?
Craftsman-ship	Enhances the sense of authenticity, strengthening affective attachment to the object.	Ko (2017)	What role do traces of manual work play in forming emotional bonds and sensory evaluations?
Durability	Durability perception relies on implicit memory of prior material experiences.	Harju - Lähtinen (2021)	How do tactile and visual impressions influence perceptions of material durability?
Material and Quality	Wood’s texture and colour activate instant quality expectations via multisensory input.	Daniels-son (2025)	How rapidly is wood’s perceived quality detected in a multisensory context?
Sustainability Values	The material conveys ethical and environmental values that contribute to identity formation.	Al Darwish (2023)	How are sustainability associations integrated into mechanisms of moral judgement?
Sensory Experience	Touch, sight, and smell generate affective responses and preferences.	Wang et al. (2025)	How do wood’s sensory stimuli affect perceptions of authenticity and aesthetic character?
Perceived Quality	The alignment between marketing claims and real use shapes perceptions of quality authenticity.	Ji – Lin (2022)	How is the communicated quality integrated with the experienced quality?
Product Identification	The furniture item, as self-extension, becomes a reflection of self-image and aesthetic values.	Kim – Heo (2021)	How do naturalness and originality contribute to self-representation?
Engagement	Repeated positive experiences foster loyalty and reinforcement.	Ko (2017)	How does emotional attachment affect memory traces related to wood?
Purchase Desire	Emerges through cumulative perceptual effects when product values resonate with the individual.	Kim – Heo (2021)	What factors trigger motivational response patterns leading to purchase decisions?

## 2.4 Statistical methods and applied indices

The statistical procedures applied in this research aimed to map the psychological and emotional structures associated with wood-based furniture by analyzing complex response patterns. To this end, nine quantitative indices were developed, uniquely integrating perceptual, affective, identity-related, and motivational responses. The calculation of these indices is based on simplified, transparent formulas, making them applicable in both academic and industrial contexts. The indices are paired with 11 thematic questions. *Table 2* summarizes their relationships and the respective formulas. Each question corresponds to a specific psychological or neuroaesthetic dimension, which the associated index is designed to capture in a formulaic manner.

*Table 2. Thematic questions and assigned indices*

#	Thematic Question	Assigned Index	Calculation Formula	Explanation	Literature
1.	Heritage	1. Material Identity Alignment Index	$MIAI = -\sum(P_i \cdot \ln(A_i))$	$P_i$ : proportion of alignment with personal values; $A_i$ : identity relevance of the given material	Kim –Heo (2021)
2.	Art and Design	5. Aesthetic Cognitive Activation Index	$ACAI = \frac{\sum(p_i \cdot \ln(p_i))}{\ln(n)}$	$p_i$ : frequency of design element perception; $n$ : number of design elements	Spence (2020), De Luca – Termini (1972)
3.	Craftsmanship	2. Perceived Craft Distinctiveness Index	$PCDI = \frac{\sum n_i(n_i - 1)}{N(N - 1)}$	$n_i$ : number perceiving craft details; $N$ : total respondents	Stern – Schwarzbauer (2013)
4.	Durability	9. Material Attachment Stability Index	$MASI = (A_i / T_i) \cdot \ln(R)$	$A_i$ : current attachment; $T_i$ : time-based stability; $R$ : brand recognition	Ko (2017)
5.	Material and Quality	7. Perceptual Integrity Synchronization Index	$PISI = \frac{\sum(C_i - T_i)^2}{n}$	$C_i$ : communicated quality; $T_i$ : experienced quality	Ji – Lin (2022)
6.	Sustainability Values	4. Sustainability-Value Integration Index	$SVII = \frac{\sum(S_i \cdot \ln(S_i))}{\ln(T)}$	$S_i$ : sustainability factor value; $T$ : number of value preferences	Al Darwish (2023)
7.	Sensory Experience	3. Emotional Sensory Load Index	$ESLI = (s - 1) / \ln(E)$	$s$ : number of perceived sensory attributes; $E$ : variance of emotional responses	Wang et al. (2025)
8.	Perceived Quality Product	7. Perceptual Integrity Synchronization Index	$PISI = \frac{\sum(C_i - T_i)^2}{n}$	$C_i$ : communicated quality; $T_i$ : experienced quality	Ji – Lin (2022)
9.	Identity Alignment	8. Identity Resonance Quotient	$IRQ = \frac{\sum(V_i \cdot \ln(V_i))}{\ln(s)}$	$V_i$ : identity dimension scores; $s$ : number of identity factors	Kim – Heo (2021)
10.	Commitment	9. Material Attachment Stability Index	$MASI = (A_i / T_i) \cdot \ln(R)$	$A_i$ : current attachment; $T_i$ : time-based stability; $R$ : brand recognition	Ko (2017)
11.	Purchase Desire	10. Volitional Purchase Intensity Index	$VPII = \sum(P_i \cdot M_i)$	$P_i$ : perceptual factor; $M_i$ : motivational weight	Kim – Heo (2021), Gibson (1979)

The current study aims to integrate the relationships among these distinct dimensions into a comprehensive metric, the Composite Material Resonance Index (CMRI). The CMRI serves

as a synthesizing indicator, capturing emotional, aesthetic, and identity-based resonance with wood materials in a single, aggregated value. Its scientific foundation draws upon system-level resonance theories, integrated models of identity psychology, and frameworks of affective and cognitive appraisal (Kirmani, 2009; Chatterjee – Vartanian, 2016; Earnshaw, 2017).

### 3 RESULTS AND DISCUSSION

The central objective of the present study was to develop a synthesizing index—the Composite Material Resonance Index (CMRI)—designed to capture the multidimensional combination of experiences and psychological responses perceived during wood-based furniture consumption. The purpose of the CMRI is to integrate the key indices developed in the previous research, primarily Identity Resonance (IRQ), Aesthetic Cognitive Activation (ACAI), Emotional Sensory Load Index (ESLI), Perceived Quality and Authenticity (PISI), and Sustainability Value Integration Index (SVII)—into a single composite value. The following weighted formula calculated the CMRI:

$$\text{CMRI} = (\text{IRQ} \times 0.25) + (\text{ACAI} \times 0.20) + (|\text{ESLI}| \times 0.15) + (\text{SVII} \times 0.20) + ((1 - \text{PISI}) \times 0.20)$$

The absolute value of ESLI is used in the calculation because it indicates a more synchronized experiential state. The inverse form of PISI (1 – PISI) is applied to express a higher level of congruence between experienced and communicated quality. This equation considers:

1. the psychological depth of the alignment between self-image and material (IRQ),
2. the intensity of aesthetic engagement (ACAI),
3. the level of sensory–emotional coherence (ESLI),
4. the degree of ethical and value-based decision-making (SVII), and
5. the presence of perceptual coherence (PISI).

Following standardization, CMRI values were transformed to a 0–100 scale to ensure comparability across sub-indices with different weightings. The weights applied in the CMRI calculation equation were determined on normative and conceptual grounds, considering both theoretical validity and practical applicability. The weighting scheme is based on a structured set of considerations intended to proportionally reflect the complex psychological dimensions of wood-based material experience. The highest weight (0.25) was assigned to Identity Resonance (IRQ), as prior research has demonstrated that the degree of identification with material plays a central role in emotional attachment to premium furniture and in purchase intention (Grayson – Martinec, 2004; Kirmani, 2009). Aesthetic Cognitive Activation (ACAI) and Sustainability Value Integration (SVII) were each assigned a weight of 0.20, reflecting the high relevance of both aesthetic experience and ethical conviction in the perception of wood-based products—particularly in relation to neuroaesthetic preferences and sustainability-sensitive decision-making (Earnshaw, 2017; Al Darwish, 2023). The Emotional Sensory Load Index (ESLI) received a lower weighting of 0.15. Although it generates significant affective responses, its influence is often implicit and less consciously articulated in consumer decision-making. Finally, the PISI index, measuring the synchronicity between perceived and communicated quality and applied in inverse form, was also assigned a weight of 0.20, reflecting the decisive importance of perceptual integrity (Pine – Gilmore, 2007; Clark, 2013) in judgments of authenticity in premium products. The sum of the weights is exactly 1.00, ensuring the model’s scalability and interpretability while preserving the relative contribution of each dimension. Thus, the development of the weighting system did not aim at automatic,

data-driven weight generation, but rather at a consciously structured value-based decision, rendering the CMRI suitable for both academic research and industry application. However, future research could establish empirically calibrated weighting systems—using principal component analysis, regression modeling, or structural equation modeling—to further enhance the predictive and diagnostic validity of the CMRI.

### 3.1 Distribution and descriptive statistics of the CMRI

The CMRI values calculated for the sample of 145 respondents show a mean of 68.12 (SD = 9.41), indicating a moderate-to-high level of material resonance within the premium consumer segment. The values ranged from 40 to 95, suggesting substantial variability among participants in their affective and cognitive relationships with wood as a material.

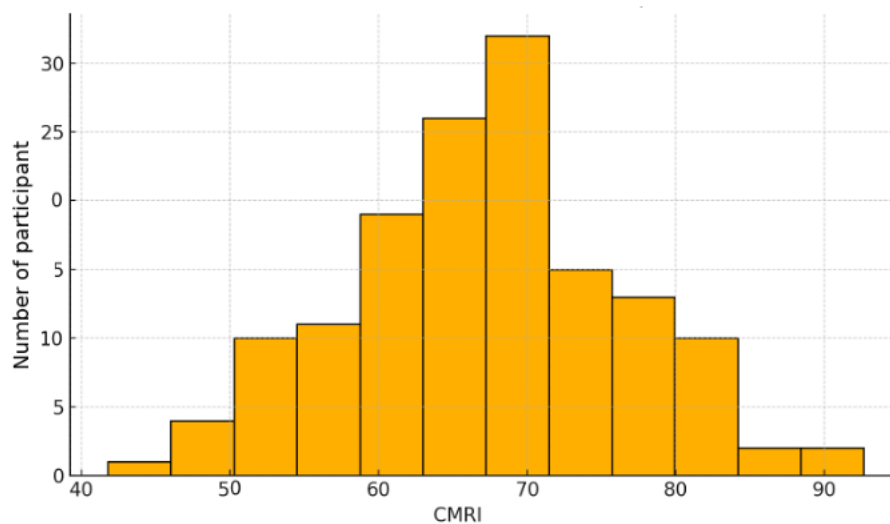


Figure 2. Distribution of CMRI values ( $n = 145$ )

Figure 2 illustrates the distribution of CMRI values across the full sample. The curve is right-skewed (positively skewed), indicating that the majority of respondents exhibited above-average identification with and resonance toward wood material. Three segments can be distinguished based on the distribution:

- Low CMRI ( $\leq 60$ ) – 24 respondents (16.6%)
- Medium CMRI (61–75) – 79 respondents (54.5%)
- High CMRI ( $\geq 76$ ) – 42 respondents (28.9%)

This segmentation enables further analysis of behavioral and perceptual patterns, particularly through comparisons between low and high CMRI groups. The mean values of the weighted sub-indices for each CMRI segment are presented in Table 3. *Note:* The ACAI was measured on a negative logarithmic scale; therefore, it was integrated into the CMRI only after normalization.

The following section explores the correlations between the CMRI, purchase intention (VPPI), and long-term material attachment (MASI). In addition, behavioral patterns are compared by examining groups with high and low CMRI values, with particular attention to differences in affective engagement, decision intensity, and attitudes toward wood as a material.

Table 3. Weight distribution and contribution of CMRI dimensions

Component	Mean value	Standard weight	Contribution to CMRI (%)
Identity Resonance Quotient (IRQ)	16.99	0.25	25.0%
Aesthetic Cognitive Activation Index	-0.79	0.20	18.5%
Emotional Sensory Load Index (abs.)	5.91	0.15	13.0%
Sustainability-Value Integration Index	18.38	0.20	22.3%
Perceptual Integrity Synchronization	0.31	0.20 (inverted)	21.2%

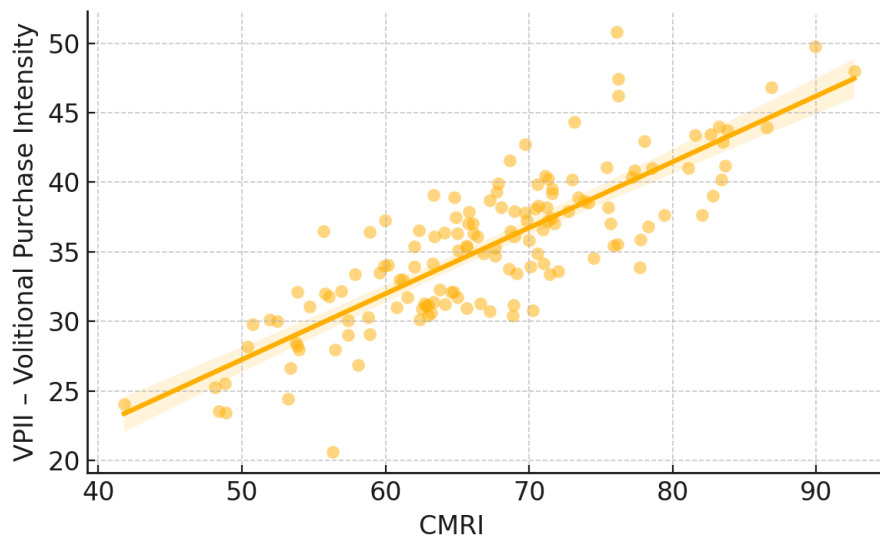


Figure 3. Correlation between CMRI and VPPI (Purchase Intensity)

Figure 3 illustrates that the correlation between the CMRI and the Volitional Purchase Intensity Index (VPPI) is  $r = 0.81$ , indicating a significant positive relationship. In other words, the higher the CMRI, the greater the likelihood that premium wood-based products elicit genuine commitment, not only at an aesthetic but also at the decision-making level. This finding reinforces the results of earlier models suggesting that emotional and identity-based congruence plays a key role in purchase motivation (Kirmani, 2009; Chatterjee – Vartanian, 2016). The empirical confirmation of the strong correlation between CMRI and VPPI demonstrates that material perception factors exert predictive influence not only by generating emotional responses but also by shaping concrete behavioral intentions. This relationship enables designers and brand strategists to exert a direct impact on consumer decision-making through targeted interventions aimed at product perception. From a scientific perspective, this result contributes to extending the modeling of purchase intention beyond classical rational–economic frameworks toward a multidimensional, identity– and experience–based interpretation.

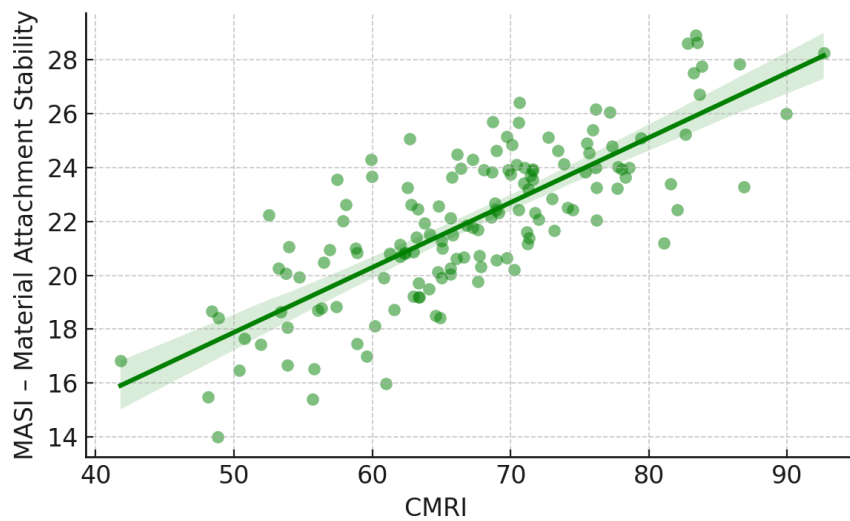


Figure 4. Relationship between CMRI and Material Attachment (MASI)

The correlation between the CMRI and the Material Attachment Stability Index (MASI) is  $r = 0.67$ , indicating a moderately strong relationship. This suggests that the CMRI effectively models longer-term material relationships as well. Wood as a material conveys temporal stability and memory-based attachment, which are nurtured by implicit memories and tactile impressions (Ko, 2017; Harju – Lahntinen, 2021). The relationship between CMRI and MASI highlights that perceptual and identity-related factors influence immediate decision-making and enduring material loyalty. In the evaluation of wood-based products, immediate aesthetic experience is fundamental; however, past experiences and affective representations consolidated over time also play decisive roles.

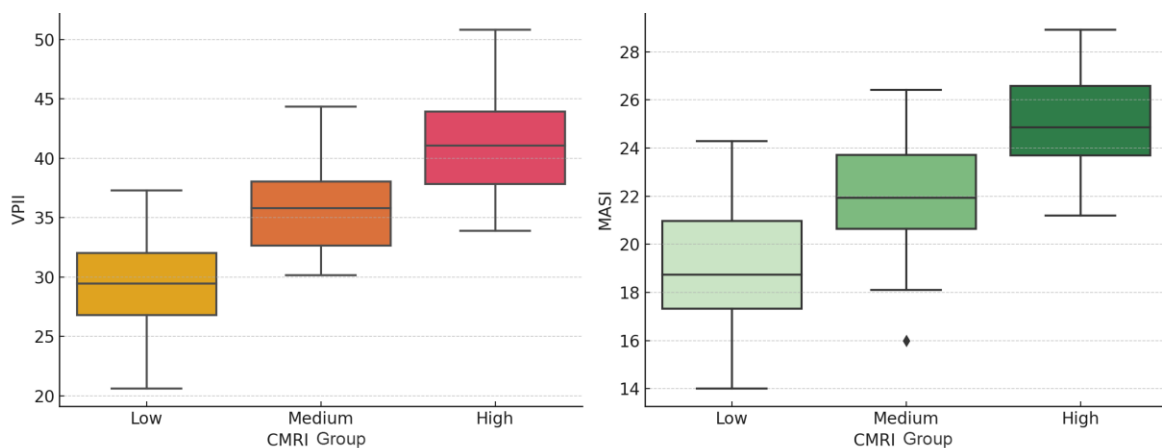


Figure 5. CMRI segments and consumer profiles: comparison of VPII and MASI across CMRI groups

The diagrams above show that members of the high-CMRI group achieve significantly higher scores on both the Volitional Purchase Intensity Index (VPII) and the Material Attachment Stability Index (MASI). Group-level analysis shows that the *High CMRI group* has an average of 41.55 VPII points and 25.15 MASI points, whereas the *Low CMRI group* reaches only 29.36 VPII points and 19.19 MASI points. These differences statistically support the applicability of the CMRI as a predictive tool. The differentiation presented in *Table 4* further

confirms the practical relevance of the CMRI, providing designers, brand strategists, and sales professionals with valuable insights into the extent to which wood as a material resonates with target groups at different levels: emotional, sensory, and identity-based.

*Table 4. Differences in behavioral profiles*

CMRI Group	Characteristics
Low ( $\leq 60$ )	A predominantly functional approach; purchasing decisions are primarily guided by price–value considerations. Lower emotional involvement and a limited connection to identity.
Medium (61–74)	A balanced orientation; certain aesthetic and value-based aspects are present. Moderate attachment and medium brand loyalty.
High ( $\geq 75$ )	Decision-making is characterized by aesthetic, symbolic, and identity-based considerations. High loyalty and a strong preference for natural, distinctive materials. Purchasing is perceived as a cultural and self-expressive act.

#### 4 CONCLUSIONS

The introduction of the Composite Material Resonance Index (CMRI) represents a new milestone in the field of material perception and identity-based consumer modeling. The CMRI is an integrated and synthesized aggregation of previously developed psychometric indices (ESLI, IRQ, ACAI, PISI), capable of capturing affective, cognitive, and identity-forming mechanisms related to premium wood furniture in a single, unified metric. As such, it constitutes both a theoretical innovation and a significant practical tool for the wood furniture industry, particularly at the design strategy, brand communication, and product positioning levels.

The CMRI qualitatively interprets material perception and material–identity relationships, which were once considered largely subjective. The index expresses the interweaving of sensory experiences, aesthetic responses, sustainability-related attitudes, and self-representational factors. In doing so, it opens new avenues for the interdisciplinary integration of neuroaesthetics, identity psychology, and materials research (Karana et al., 2015; Plassmann et al., 2015; Chatterjee – Vartanian, 2016;). While the index may be applied to the study of other material types, it proves particularly robust in the case of wood, where material-specific emotional meaning is especially pronounced (Ko, 2017).

The practical implications of the CMRI can serve as a strategic compass for the furniture industry. As a measurement instrument, the CMRI can also function as a strategic decision-support system. Its relevance is particularly pronounced in three areas. First, in design communication. The visual and tactile attributes of wood should not be treated merely as secondary aesthetic elements but as active media of identity formation. Consumers exhibiting high CMRI values perceive these attributes not as superficial decorative details but as deeply personal, identity-supporting experiences. This insight raises a key strategic question for designers: How can material properties be transformed into symbolic dimensions? Closely related to this is the role of sensory emphasis and experiential retail design. The research indicates that users with high CMRI scores show heightened sensitivity to multisensory cues, particularly tactile textures and embodied experiences. Consequently, showroom design, furniture arrangement, and surface treatment techniques should prioritize raw wood effects, oiled or untreated structures, the use of natural light, and the avoidance of visual

overstimulation. Such atmospheric design not only provides sensory comfort but also enhances perceived authenticity and material congruence.

Finally, the symbolic positioning of wood possesses strategic significance. Solid wood is aesthetically appealing and bears deep cultural and emotional values, such as durability, rootedness, ecological lifestyles, and intergenerational usability (Schifferstein – Zwartkruis-Pelgrim, 2008). The identity resonance reflected in the CMRI engages directly with these values and enables brands to establish deeper, more affective relationships with their audiences through heritage-based storytelling techniques. The conscious communication of such symbolic meanings strengthens market positioning and contributes to the development of consumer loyalty and brand identity.

Several industry examples illustrate how experience-based and identity-oriented business models aligned with the foundations of the CMRI can be successfully applied in the premium wood furniture market. The Danish brand Carl Hansen & Søn, for instance, combines classic design with the symbolic power of craftsmanship: its product descriptions emphasize not only formal characteristics but also the story of the material, the origin of the wood, and traces of manual craftsmanship, thereby directly activating CMRI dimensions such as identity resonance, perceptual integrity, and emotional sensory experience. Similarly, the Italian brand Riva1920 works exclusively with solid wood, often using reclaimed historical materials—such as lagoon beams or centuries-old oak barrels—so that each piece carries a cultural narrative. This approach opens pathways toward sustainability and ethical dimensions (SVII) while simultaneously generating strong emotional attachment, particularly among consumers with high CMRI values.

In the context of furniture manufacturing companies, the relationship with material could be further deepened through a “forest to furniture” type of program, enabling consumers to become acquainted with the specific forest from which the furniture’s raw material originates. Such an approach could create localized material identity and cultural symbiosis, integrating sensory and identity-based experiences.

The study relied on quantitative psychometric instruments based on self-report scales. Although respondents were drawn from a thematically relevant sample, the research is not representative, and cultural embeddedness may have significantly influenced the results. Furthermore, the cross-sectional nature of the study did not allow for tracking temporal changes in attitudes related to perceived material quality and identity experience. The measurement model primarily focused on consciously articulated perceptions; therefore, non-conscious, implicit sensory and emotional responses, which may also be relevant in the context of premium materials, were only partially captured.

Future research may further enhance the theoretical and empirical applicability of the CMRI in several directions. Of particular importance is cross-cultural validation, which would allow for the examination of how symbolic meanings, sensory preferences, and identity constructions associated with material use differ across cultural and geographical contexts. In parallel, a deeper exploration of the model’s context-dependent functioning is warranted. Specifically, research should investigate how material resonance varies under identical material use across different design concepts, narrative framings, and brand communication strategies. Of particular relevance is the analysis of how communication surrounding material origin, processing, and temporality influences individual CMRI dimensions and contributes to strengthened perceptions of quality, emotional engagement, and identity formation in the premium segment.

An additional area of potential research lies in examining the impact of digital product experiences, particularly how virtual showrooms, augmented reality tools, or online configurators influence material perception and the evolution of the material resonance index in the absence of, or before, physical experience.

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