

Research Repository

Made of Stone? How Traditional Restaurants' Outdoor Signboards' Materials Affect Brand Perception and Purchase Intention

Accepted for publication in the Journal of Hospitality and Tourism Insights

Research Repository link: <https://repository.essex.ac.uk/43968/>

Please note:

Changes made as a result of publishing processes such as copy-editing, formatting and page numbers may not be reflected in this version. For the definitive version of this publication, please refer to the published source. You are advised to consult the published version if you wish to cite this paper.

<https://doi.org/10.1108/jhti-12-2025-1470>

Made of Stone? How Traditional Restaurants' Outdoor Signboards' Materials Affect Brand Perception and Purchase Intention

Authors:

Jing (Bill) Xu

Centre for Gaming and Tourism Studies, Macao Polytechnic University, Macao SAR, China

Hanqun Song

Essex Business School, University of Essex, Colchester, UK

Abstract

Purpose – Traditional restaurants with authentic foods should pay attention to how their outdoor cues are designed. Drawing upon the schema congruity theory, this research explored the combined effects of outdoor signboards' material and texture to enrich the knowledge.

Design/methodology/approach - Using an experimental design approach, we conducted two studies. Study 1 was conducted to investigate the effect of signboard material on customers' brand perceptions (i.e., brand authenticity, brand heritage, and brand status). Study 2 further examined the interaction effect of signboard material and texture on brand perceptions, which then influence purchase intentions. Analysis of covariance was used for data analysis. PROCESS in SPSS was also adopted.

Findings - We found that stone materials generated a stronger sense of brand authenticity, brand heritage, and brand status than wooden materials. Such brand perceptions in turn led to consumers' purchase intentions. In addition, we noted the moderating role of signboard texture. There were significant differences between glossy and matte wooden signboards for brand perceptions. There was no difference between glossy stone signboards and matte counterparts.

Practical implications - Restaurants should pay attention to how external environmental cues affect consumers' brand perceptions and purchase intentions. Signboards should be carefully designed considering factors such as materials and texture.

Originality/value - Despite that traditional restaurants' outdoor signboards are crucial for generating brand perception and purchase intention, there is a dearth of relevant studies. Additionally, little research has been done on the material and texture cues of outdoor signboards.

Keywords: Restaurant signboard, schema congruity theory, material, texture, brand perceptions

1. Introduction

Brands consider various perspectives when presenting their visual identity (Phillips et al., 2014). Using the restaurant as an example, restaurant outdoor signboards often demonstrate their brand identity and perceptions (Song et al., 2022; Yeoh, 2017). The effect of typography on consumer perception has been demonstrated in existing literature, including logo design and writing direction (Li & Ma, 2023). While investigating the typography of brand visuals is vital, the effective means of displaying brand identity and generating brand perceptions is unclear. This includes the materials and textures brands use to present their outdoor signboards to consumers and tourists. Material and texture are important product features (Fleming, 2014; Marckhgott & Kamleitner, 2019) of outdoor signboards in their visual demonstration, and yet scholars have attached little importance to their effects. This study focuses on the traditional Chinese catering context, where exploring external visual cues in relation to how consumers perceive the restaurant brand is important. Traditional restaurants have been defined as those offering local cuisine and regional gastronomic characteristics to tourists and local residents (Youn et al., 2020).

Material studies have seldom been conducted in marketing and consumer research. Limited studies merely focused on the packaging material of consumer products to collect consumer evaluations of the products (Piqueras-Fiszman et al., 2012; Magnier & Schoormans, 2017). Furthermore, little research has examined the visual effects of material perceptions (Fleming, 2014, 2017) in the commercial context. There is still a dearth of theoretical development attempts and empirical data, with no exceptions in hospitality and restaurant research. Given that restaurants desire to use their outdoor signboards in their branding strategies to create appeal and differentiation as well as facilitate consumers' purchasing decisions (Song et al., 2023), understanding what materials of signboards to use in specific cultural contexts benefits the traditional restaurant industry. Being cognizant of the research gap, our study intends to explore the two materials displayed by restaurants' outdoor signboards, namely stone and wood, for their varying effects on brand perceptions leading to purchase intentions. These two materials are typically found in traditional Chinese restaurants (Zhisheji, 2025).

Texture represents another property (Marckhgott & Kamleitner, 2019) of restaurant signboards. For example, a signboard can be glossy or matte. Although different textures can evoke distinct emotional responses in consumers, their effects have not received adequate academic attention (Meert et al., 2014). The effect becomes more complicated when the texture and material of outdoor signboards, both representing visual cues of a traditional restaurant, are combined for brand evaluation. The combined effects are informed by schema congruity theory (Meyers-Levy & Tybout, 1989). In marketing, congruity is represented as a match between an object's or product's attributes and a pertinent schema based on previous understanding of attributes and experiences (Meyers-Levy & Tybout, 1989).

In this study, grounded on the works of brand management and traditional Chinese restaurants (Moulard et al., 2021; Xu et al., 2022), brand perceptions comprise brand authenticity, brand heritage, and brand status. Although visual cues of brands are considered to develop consumers' brand perceptions (Song et al., 2023), the existing literature has not demonstrated whether visual cues such as signboard material and texture could also affect brand authenticity, brand heritage, and brand status. To fill the knowledge gap, we would explore the effects of the material and texture of restaurants' signboards on brand perceptions consisting of the three dimensions above in the traditional Chinese restaurant context. The

effects of three types of brand perceptions on consumers' purchase intentions will then be investigated.

Given the above discussions, the following objectives are developed: 1) to explore the effect of the material used by traditional restaurants' outdoor signboards on brand perceptions (i.e., brand authenticity, brand heritage, and brand status); 2) to investigate the relationship of brand perceptions and consumers' purchase intentions; and 3) to examine the moderating effect of the texture on outdoor signboards' materials, or the congruity of texture and material, on brand perceptions.

2. Literature review

2.1. Traditional restaurants' signboard cues and schema congruity theory

Restaurants' outdoor signboards represent a key extrinsic cue that affects consumers' perceptions of restaurant atmosphere and their dining behaviors (Song & Yang, 2023). Existing studies have merely examined cues such as display characters and text flows of restaurant names on signboards (Song et al., 2022; Song et al., 2023) and signboard color (Song & Yang, 2023). Studies of restaurant signboard cues are still inadequate. Traditional restaurants offer traditional and local foods, as well as ethnic cuisine (Chen et al., 2020). In China, many traditional restaurants have passed down "local foods, cooking skills, and traditional catering styles" through generations (Xu et al., 2022). However, potential consumers may not be able to recognize them and their brands from the outside, particularly from the outdoor signboards, making it necessary to design effective visual cues to attract them. In academia, how traditional restaurants design their outdoor signboards has largely been overlooked (Song & Yang, 2023).

The research conception of this study is further inspired by schema congruity theory (Meyers-Levy & Tybout, 1989) when considering a restaurant's signboard cues to evaluate the restaurant brand. A schema refers to a cognitive structure organizing past experiences and reflecting a prior understanding of an object (Clemente et al., 2014). In social cognition, the schema demonstrates a combined knowledge that connects perceptions of different attributes and characteristics (Soni & Kumar, 2024). Schema congruity theory argues that if new attributes of a brand or a product are considered congruent with consumers' previous understanding of existing attributes, consumers usually hold a positive attitude toward the brand or the product (Kim & Kim, 2021). Conversely, consumers will have a negative attitude should incongruity result in their cognitions. For example, Kim and Kim (2021) realized that a greater congruence between a brand and its new celebrities endorsing its products could contribute to a positive perception of the brand.

Unfortunately, the application of schema congruity theory in hospitality marketing and consumption is scarce. There are some limited applications in the literature. For example, Line et al. (2016) applied the theory to explore the relationship between e-cigarette use and perceptions of restaurant policy concerning cigarette use. Lanseng and Sivertsen (2019) rather focused on schema incongruity to discuss consumers' judgment of wines. More recently, drawing upon the theory, Ma et al. (2024) found that consumers favored service robot design congruent with their prior understanding of the intended purpose of robot use in restaurants. Our study would extend the use of schema congruity theory to explore the

extrinsic cues of restaurant outdoor signboards, particularly those related to the materials adopted.

2.2. Material visual cues and consumer perception

In marketing, the visual cues of products are seen as important quality signals and purchase drivers (Huddleston et al., 2023; Yan et al., 2019). Prior marketing and hospitality research have examined product labels (Ho et al., 2024; Luo et al., 2025), corporate names (Song et al., 2023), and product packaging design (Baek et al., 2023). In restaurant research, menus are often a common object of study for exploring visual cues of restaurants and foods. For example, handwritten menus have been found to evoke perceptions of uniqueness (Chen et al., 2022) and authenticity (Yu et al., 2020) among consumers. Research on restaurant signboard is in its initial stage (Song & Yang, 2023; Song et al., 2023). Our study contributes to this literature by focusing on signboard materials as important visual cues. Before entering a restaurant, consumers can visually recognize its outdoor signboard and perceive its material features.

In visual material perception research, for instance, Sharan et al. (2009) found that human subjects could recognize materials from photographs. Similarly, Fleming et al. (2013) indicated that human subjects could easily differentiate and classify materials based on their visual judgments of material properties such as hardness and glossiness. Fleming (2014, p.62) summarized in his general theory of material perception, by asserting that humans are “remarkably good at visually perceiving materials” due to their sophisticated brain systems. Although it may be difficult for humans to accurately estimate or compute physical parameters of materials, they can perceive the materials in general by associating them with their appearance characteristics and presented properties. In marketing and cognitive psychology, some limited discussions have been made to examine materials (Magnier & Schoormans, 2017; Piqueras-Fiszman et al., 2012) in relation to their different property dimensions, such as weight (Chandler et al., 2012; Jostmann et al., 2009), hardness (Fleming, 2014; Marschallek et al., 2021), and durability (Badino & Blengini, 2003). However, whether the materials perceived in visual systems can trigger brand perceptions largely remains a question in the restaurant marketing and foodservice literature.

Our study focuses on the materials of restaurants’ outdoor signboards, particularly those made of stone and those made of wood. Stones, compared to their wooden counterparts, are naturally characterized by their hardness (Marschallek et al., 2021). Furthermore, stone materials are often more resilient, nonperishable, and durable because they have always been utilized for architecture and buildings in the past (Belabid et al., 2024). In addition to their physical attributes, stone materials are regarded as more upscale than wooden materials from an aesthetic standpoint because of their inherent texture and ability to fit a variety of decoration styles (Wu et al., 2025). By comparison, wooden materials are more economical and recyclable. They may be suitable for more complicated architectural designs (Kumar et al., 2021).

2.3. Brand perceptions: Brand authenticity, brand heritage, and brand status

According to brand management literature (Keller, 1993; Moulard et al., 2021) and traditional restaurant literature (Song et al., 2023; Song & Kim, 2022; Xu et al., 2022; Youn et al., 2020), we adopt brand authenticity, brand heritage, and brand status to represent brand perceptions. They have not been assessed simultaneously in restaurant marketing and services.

Brand authenticity measures whether consumers perceive a brand to be authentic or original (Schallehn et al., 2014). There is a line of thinking that attempts to decompose brand authenticity into multiple dimensions (Morhart et al., 2015). Moulard et al.'s (2021) seminal work proposed three dimensions of brand authenticity based on the correspondence theory of truth (Hanna & Harrison, 2004): true-to-ideal authenticity, true-to-fact authenticity, and true-to-self authenticity. True-to-ideal authenticity assesses whether a brand meets the external expectation of consumers in society, and true-to-fact authenticity evaluates whether the brand presented matches with how it is promoted. Both of them are driven by external forces, while true-to-self authenticity is internally driven, evaluating whether the brand has its passion to do the best in its business. Xu et al. (2022) further proved in the traditional restaurant industry that true-to-self brand authenticity demonstrates the ultimate authenticity outcome. As a result, for a truly authentic brand, externally driven motivations ought to change into internally motivated ones (i.e., true-to-self authenticity). In our study, in line with Moulard et al. (2021) and Xu et al. (2022), brand authenticity was defined as the extent to which a restaurant brand is perceived as being dedicated to seeking perfection in its business.

Brand heritage was conceptualized as part of brand identity and perception (Urde et al., 2007), particularly in traditional restaurants (Song & Kim, 2022). Accordingly, Wiedmann et al. (2011) argued that the most important elements contributing to brand heritage comprised the track record of the brand, longevity, symbols of the brand, and whether history is important to its brand identity. More recently, Pecot et al. (2019, p.1624) referred to brand heritage as the “branded representation of the past” aiming at a “future transmission” (p.1627). In our study, a traditional Chinese restaurant with great brand heritage values refers to the one that demonstrates its historical food culture which is necessary for achieving longevity in the catering industry.

Brand status was defined as the social prestige as demonstrated by a brand (Eastman et al., 1999). Conceptually, brand status underpins the perceived social status when compared with other competing brands (Han et al., 2010). Undeniably, luxury brands are often considered to have a high level of brand status (Saddlemeyer & Bruyneel, 2016). In China, some traditional Chinese catering brands are normally considered to have higher brand status than others (China Hospitality Association, 2024). A traditional restaurant brand is perceived to embody a higher brand status when being recognized to have higher prestige and symbolism (Song, et al., 2022).

2.4. The relationships between signboard materials and brand perceptions

Materials have been found to have influences on human psychology through cognitive and affective responses. According to general theory of material perception (Fleming, 2014), people can generally perceive the properties and characteristics of materials when the materials are visually presented. In design psychology, wood is generally associated with warmth and a connection to nature (Bovea & Vidal, 2004). Conversely, stone is thought to convey a greater sense of hardness and perseverance (Horsfall, 1983), as well as high-quality performance (Jess, 2025). These attributes are crucial for brands dedicated to achieving perfection in their products and operations (i.e., true-to-self brand authenticity). In our study, we focus on Chinese domestic tourists evaluating traditional Chinese restaurants. Chinese consumers have been found to place much emphasis on business passion and commitment of restaurants when assessing traditional restaurants' brand authenticity (Xu et al., 2022). Chinese cultural values, including those seeking commitment and persistence (Tsang, 2011),

can support our proposition that Chinese consumers favor stone signboards that convey true-to-self brand authenticity. We thus develop the following hypothesis:

H1: The stone material of a restaurant's outdoor signboard has a greater effect on restaurant brand authenticity than the wooden material.

Besides, the material used could convey the message of brand longevity. For example, copper is often incorporated into package designs to evoke a sense of brand heritage (Pecot et al., 2022). In our study, in their visual presentations (Fleming, 2014; Fleming et al., 2013), stone materials, with their general properties and appearances, are considered more durable over the long term, thereby generating a sense of brand heritage (Badino & Blengini, 2003). In traditional Chinese restaurants, particularly those popular ones, restaurants' heritage values are recognized by consumers (Song & Kim, 2022). Thus, the following hypothesis is developed:

H2: The stone material of a restaurant's outdoor signboard has a greater effect on restaurant brand heritage than the wooden material.

In our study, due to perceived hardness in their visual presentations (Fleming, 2014), stone materials are a signal of prestige and upscale status (Jess, 2025). Stone has often been used in the interior and architectural design of luxury brands (Kamal et al., 2024). China, a country typically characterized by greater power distance between individuals (Shi & Shi, 2025), is the research context of our study. Chinese consumers have been found to be sensitive to the social status and prestige of business operations (Pizzetti et al., 2023), including that of traditional restaurants (Song et al., 2022). Therefore, we hypothesize that a stone outdoor signboard is more likely to signify a higher brand status than a wooden outdoor signboard. The following hypothesis is developed:

H3: The stone material of a restaurant's outdoor signboard has a greater effect on restaurant brand status than the wooden material.

2.5. The relationships between brand perceptions and purchase intention

In our study, purchase intention is the predicted outcome of behavioral intention (Wang et al., 2022). It indicates consumers' willingness to dine at a traditional restaurant if the price and menu are suitable (Kim et al., 2020; Liu et al., 2022). The relationship between brand authenticity and purchase intention has been evidenced by a number of studies. Nunes et al. (2021) confirmed that overall perceived brand authenticity could lead to behavioral intentions consisting of information search, word of mouth, and purchase intention. In fact, actions of brand authenticity, such as being true to its business (Moulard et al., 2021) and commitment to offering quality products and services (Yu et al., 2023), commonly predict consumers' purchase intention. Previous research also proved that brand heritage can influence purchase intention in a direct way (Orth et al., 2019; Song & Kim, 2022). Chelminski and DeFanti (2018) focused on shoe brands and figured out the direct relationship between brand heritage and purchase intention. Song and Kim (2022) also confirmed such a direct relationship in the restaurant industry. In addition, the influence of brand status on purchase intention has been found. Brand status, a part of consumer-based brand equity (Keller, 1993), proved to inform consumers' choices and purchase intentions (Nguyer et al., 2020), particularly for those who are more conscious about such brand associations and images (Jebarajakirthy & Das, 2020). Evidence indicating the relationship between brand authenticity and purchase intention (Shi

& Jiang, 2023; Xu et al., 2022; Yang et al., 2022), brand heritage and purchase intention (He et al., 2024; Song & Kim, 2022), and brand status/prestige and purchase intention (Chen et al., 2024; Song et al., 2022) have also been collected in the Chinese context. Given the preceding discussions and expected applications in the restaurant industry, we develop the following hypotheses:

H4: Brand authenticity of a restaurant has a positive effect on purchase intention.

H5: Brand heritage of a restaurant has a positive effect on purchase intention.

H6: Brand status of a restaurant has a positive effect on purchase intention.

2.6. Texture and consumer perception

Package texture has also been confirmed to influence consumers' product evaluation. For example, consumers link unhealthy snacks, such as potato chips, to being sold in glossy packages, whereas healthier snacks, such as crackers, tend to be sold in matte packages (Ye et al., 2020). Marckhgott and Kamleitner (2019) identified that matte packaging leads to consumers' perception of product naturalness. Naturalness may translate to originality (Frizzo et al., 2020; O'Neill et al., 2014). Meert et al. (2014) found an association between glossiness and prettiness, arguing that a glossy image is preferable and more pleasing in natural mentalism. However, there is limited knowledge of the importance and effects of texture in hospitality (Yuan et al., 2024).

Our study focuses on traditional restaurants and examines the effects of textures of signboards. Many sophisticated medical instruments have a glossy appearance and surface, which contributes to the general quality and promising capability perception (Beuckels et al., 2022). This reasoning is closely related to restaurant consumers' perceptions about whether a restaurant strives to do its best and fulfill its original business values (i.e., true-to-self brand authenticity). Moreover, we consider the congruence of stone material and glossy texture in suggesting longevity (i.e., brand heritage) and prestige perception (i.e., brand status). Meanwhile, glossy or matte stones are considered commonplace in luxury consumption (Meert et al., 2014). This consideration may fit the perception of an upscale restaurant with inherited heritage. In the Chinese context, glossy marbles are widely used in high quality buildings (Wang, 2025). According to Yu (2007), many palace museums and official buildings in China have historically used stone plaques and signage to convey originality, authority, and quality from the perspective of Chinese Confucian aesthetics. However, in line with Liu's (2005) demonstration, Chinese gardens and parks have also adopted matte stone materials in a hope to create harmonious and authentic environment, and travertine stones with a matte texture can also represent resilient building materials (Fitzgerald, 2025).

This study examines the moderating effect of restaurant signboard texture on the relationship between material perceptions and brand perceptions. We adopt the schema congruency theory (Meyers-Levy & Tybout, 1989) and argue that both glossy and matte stone signboards are congruent with consumers' schemas of stone as a high-quality and durable material, suggesting true-to-self authenticity and brand status, and brand heritage. Furthermore, in line with Chinese values, the textures of stone surfaces do not change consumers' existing schema with stone materials of outside signboards, or the core values of traditional restaurants which focus on traditional foods (Youn et al., 2020) and sustained operations (Xu et al., 2022).

With regard to matte wooden materials, these may possibly be considered as susceptible to corrosion and insect infestation, thereby being perceived as incomplete or disrespectful. In

this context, according to Chinese culture (Zhao, 2019), roughness in wooden materials can translate to crudeness and poor quality. Comparatively, glossy wooden materials convey more positive perceptions. The above discussions facilitate our understanding of Chinese cognitive schemas in the traditional Chinese catering context. Therefore, the interaction effects concerning the moderator of signboard texture are hypothesized as follows. See **Figure 1**.

H7: The texture of a restaurant's outdoor signboard moderates the relationship between material and brand perceptions (**H7a:** Brand authenticity; **H7b:** Brand heritage; **H7c:** Brand status). More specifically, restaurant consumers are likely to develop a similar brand perception in different stone signboard scenarios regardless of whether the texture is glossy or matte. Restaurant consumers are likely to develop a greater brand perception when experiencing congruity between wooden materials and glossy textures than incongruity, such as wooden materials and matte textures.

-Figure 1-

3. Method

3.1. Overview of studies

To investigate the cause-and-effect relationships between independent variables and dependent variables (H1-H3), and to test the moderating effect (H7), we conducted two online experiments (Study 1 and Study 2). In Study 1, we controlled the texture of materials, and only compared general perceptions of the materials. Thus, we compared stone to wooden signboards in Study 1. In Study 2, we included surface texture as an important feature that different types of stones, or wooden materials, may have. More specifically, we undertook Study 1 to investigate the main effect of signboard material on customers' brand perceptions (i.e., brand authenticity, brand heritage, and brand status) (H1-H3). We conducted Study 2 to replicate the results (H1-H3) from Study 1, and also to examine the two-way interaction effect of signboard material and texture on customers' brand perceptions (H7). The relationships between brand perceptions (H4-H6) were also tested in both studies.

3.2. Experimental materials and measurement

Online experiments were conducted to recruit Chinese domestic tourists who encounter traditional Chinese restaurants. To guarantee the cultural authenticity of our data (Liu et al., 2024), our study excluded those foreign tourists visiting traditional Chinese restaurants in China. Participants were requested to imagine trying a traditional Chinese restaurant for their meal while traveling to another city in China. The experimental stimulus was an image of a signboard from a traditional restaurant that they might have encountered while traveling domestically. In addition, we provided participants with brief descriptions in some stimuli (e.g., "polished marble" in Study 2), because such design ensured the accurate recognition and judgment of the intended material and the tested texture by the participants. In China, statistics suggested that traditional Chinese restaurants were largely casual dining rather than fast food or fine dining (China Hospitality Association, 2024).

The size/shape of the signboard, exterior setup, and restaurant name were controlled as the same across different experimental scenarios. The signboard was designed in a rectangular shape, typically found in a Chinese traditional restaurant, as compared to the three Chinese characters of the restaurant name in space. The three characters were written in a horizontal

way, given the possible significant influence of vertical name writing on branding perceptions in China (Song et al., 2023). Traditional Chinese restaurant background, and a revolving door, were the supplementary setups.

In Study 1, we developed the experimental scenarios for “stone” and “wooden” outdoor signboards (See Appendix 1). In Study 2, four different scenarios were developed based on material (stone vs. wooden) x texture (glossy vs. matte). Besides the pictures shown in Appendix 2, we also described the texture and material of the signboard. For example, in scenario 1 (stone + glossy) of Study 2, the signboard was depicted as being composed of polished marble which has a highly smooth and reflective surface and appears to be very heavy.

Three items were used to measure brand authenticity (Moulard et al., 2016), four items on brand heritage were adapted from previous studies (Pecot et al., 2019), four items on brand status were adopted from Song et al. (2022), and three items were adopted to assess purchase intentions (Kim et al., 2020). See Appendix 3. All measurements, manipulation control, and realism check items were assessed on a 7-point Likert scale (*strongly disagree* [1] – *strongly agree* [7]). The experiments were conducted in Chinese. Back-translation method (between English and Chinese) was utilized (Klotz et al., 2023).

3.3 Pretest

Prior to major experiments, pre-validation tests were made. Expert reviews with five researchers in universities and the pilot study with 30 respondents were conducted, which eventually proved that the experiment design was appropriate. In particular, the design was reported to be able to unveil real-life traditional dining encounters in domestic tourism in China, proving the ecological validity.

Five options of traditional Chinese restaurant names carrying three Chinese characters were originally designed. They were compared by the pretest participants. Finally, the most neutral one, namely “xin yue lou,” was retained for the following major experiments. It was a fictitious name and was confirmed to be unable to make people imagine any actual restaurants. The pretest participants also supported the necessary choice of the size, shape, and exterior setup (i.e., surrounding the signboard) of the restaurant signboard, which they believed had no marked confounding impacts on potential consumers’ perceptions of the restaurant brand. For example, the simple external restaurant setup and background color used in this study were found typical in the traditional Chinese restaurant setting, which could not necessarily foster a greater or lesser brand perception.

Some words in the experiment questionnaire were slightly adjusted based on the pretest subjects’ suggestions. Overall, pretesting offered evidence for the reliability and validity of the manipulation, reducing the concerns about alternative explanations for the observed effects.

3.4. Data collection and analysis

During the major experiments, participants were invited to complete a short survey to assess the experimental material after experiencing it. Manipulation control, realism check, measurements, and subjects’ demographic backgrounds were included in the survey.

We recruited participants from a Chinese consumer panel (i.e., Wenjuanxing) which has 6.2 million active members in the database (Wenjuanxing, 2025). The company helped produce the e-link for the online experiment and distributed the e-link to qualified members who are adult Chinese diners in China. Once subjects clicked the e-link, they were randomly assigned to an experimental condition. Experiment participants understood the study objectives and the right that they could refuse to participate or withdraw from the experiment at any time. Both Study 1 and Study 2 fulfilled the ethical guidelines for human subjects, and anonymity and confidentiality of the study subjects were maintained. Ethics review approval was obtained. The data collection process for Study 1 and Study 2 took two weeks.

We used G*Power to calculate the suitable sample size for each study. Based on the criteria of proposed data analysis of ANCOVA, effect size of 0.5, an α err prob of 0.05, power of 0.95, numerator df of 9, two groups in Study 1 and four groups in Study 2, and six covariates, the total sample size should be 103 for Study 1 and 104 for Study 2 (G*Power, 2025). Accordingly, we collected 104 valid data in Study 1. 64.4% were female, 74% had undergraduate degrees, 38.5% were office workers, and 26% with a CNY 7,000-9,999 (roughly equivalent to USD 963 to 1,375) monthly salary. 51.9% were in the age group of 21-30, and 62.5% of them often eat out. The cell size for Study 1 ranged from 48 to 56. The demographic profiles two studies are similar. Among the 239 valid participants in Study 2, 52.7% were female, 76.6% held undergraduate degrees, 38.1% were office workers, and 28.5% earned CNY 7,000-9,999 a month, nearly half (48.5%) were aged between 21 and 30. 56.9% of participants often eat out. The cell size for Study 2 ranged from 58 to 61. The cell size was considered acceptable (Lo & Yao, 2019).

Regarding data analysis, the effects of the signboard material on brand perceptions (H1-H3) were tested using a one-way analysis of covariance (ANCOVA) in Study 1. In Study 2, we used two-way ANCOVA to examine the effects of the signboard material and texture on brand perceptions (H1-H3, and H7). The relationships between brand perceptions (i.e., brand authenticity, brand heritage, and brand status) and purchase intentions (H4-H6) for both studies were verified by PROCESS in SPSS.

4. Results of Study 1

4.1. Manipulation and realism check

Manipulation checks for the independent variable of signboard material in Study 1 were successful. We used the only manipulation check question from Ollivero et al. (2025) to manipulate the independent variable of signboard materials. For example, subjects who were allocated to the stone signboard conditions highly agreed that the signboard was stone ($M_{\text{stone}} = 6.66$) compared to those in the wooden signboard conditions ($M_{\text{wooden}} = 1.40$, $t [102] = 46.338$, $p < .001$). Additionally, subjects who were assigned to the wooden signboard conditions highly agreed that the signboard was wooden ($M_{\text{wooden}} = 6.48$) than those in the stone signboard conditions ($M_{\text{stone}} = 1.34$, $t [102] = -41.452$, $p < .001$). In terms of the realism check, subjects perceived the scenario description as realistic in their daily life ($M = 5.32$, $SD = 1.108$).

4.2. Main effect of signboard material on consumers' brand perceptions

We implemented ANCOVA to analyze the effect of signboard material on consumers' brand perceptions using participants' demographics as covariate variables. The results indicate that all covariate variables did not affect consumers' brand perceptions. Signboard material significantly influenced consumers' brand perceptions. For instance, subjects in the stone signboard conditions rated significantly higher scores for brand authenticity ($M_{\text{stone}} = 5.10$, $M_{\text{wooden}} = 4.42$, $F [1, 96] = 9.072$, $p = .003$), brand heritage ($M_{\text{stone}} = 5.15$, $M_{\text{wooden}} = 4.68$, $F [1, 96] = 5.194$, $p = .025$) and brand status ($M_{\text{stone}} = 4.54$, $M_{\text{wooden}} = 3.75$, $F [1, 96] = 10.247$, $p = .002$) than those in the wooden signboard conditions. Therefore, H1, H2, and H3 were all accepted.

4.3. Relationships between brand perceptions and purchase intentions

The relationships between signboard materials, brand authenticity, brand heritage, brand status, and purchase intentions were tested using PROCESS. We also used participants' demographic information as control variables. The results show that brand authenticity ($p < .05$, 95% CI .0438 to .4308), brand heritage ($p < .05$, 95% CI .0433 to .3677) and brand status ($p < .05$, 95% CI .0019 to .4364) were positively associated with purchase intentions, confirming H4, H5, and H6. However, signboard materials were not directly associated with purchase intentions ($p = .874$, 95% CI -.3331 to .2836). All demographic backgrounds did not affect purchase intentions. Further analysis on mediation effect shows that brand authenticity (CI -.4702 to -.0529), brand heritage (CI -.5307 to -.0379) and brand status (CI -.6462 to -.1354) are mediators between signboard materials and purchase intentions. This finding suggests that brand perceptions are an important bridge between material perceptions and purchase intentions for restaurant consumers.

5. Results of Study 2

5.1. Manipulation and realism check

We controlled two independent variables using manipulation check questions. We used the manipulation question from Ollitervo et al. (2025) to manipulate the independent variable of signboard materials, and used two manipulation questions (i.e., Matte – Glossy, and Dull – Shiny) from Han and Pandelaere (2021) to manipulate the independent variable of texture. Subjects who were allocated to the stone signboard conditions were more likely to agree that the signboard was stone ($M_{\text{stone}} = 6.65$) than those in the wooden signboard conditions ($M_{\text{wooden}} = 1.51$, $t [237] = 57.103$, $p < .001$). After computing the two manipulation questions of texture, we found that subjects in the glossy conditions ($M_{\text{glossy}} = 6.18$) rated the signboard shiner/glossier than those in the matte conditions ($M_{\text{matte}} = 2.01$, $t [237] = 25.137$, $p < .001$). In terms of the realism check, subjects perceived the scenario description was realistic in their daily life ($M = 5.29$, $SD = 1.402$).

5.2. Effect of signboard material and texture on consumers' brand perceptions

The results on control variables show that age ($F [1, 229] = 4.12$, $p < .05$) influenced brand authenticity, gender ($F [1, 229] = 5.22$, $p < .05$) and job ($F [1, 229] = 5.20$, $p < .05$) affected brand heritage. We observed that signboard material significantly influenced consumers' brand perceptions. For instance, subjects in the stone signboard conditions rated significantly higher scores for brand authenticity ($M_{\text{stone}} = 5.19$, $M_{\text{wooden}} = 4.78$, $F [1, 229] = 8.537$, $p < .01$), brand heritage ($M_{\text{stone}} = 5.18$, $M_{\text{wooden}} = 4.90$, $F [1, 229] = 4.718$, $p < .05$) and brand

status ($M_{\text{stone}} = 4.63$, $M_{\text{wooden}} = 4.18$, $F [1, 229] = 7.344$, $p < .01$) than those in the wooden signboard conditions. Therefore, H1, H2, and H3 were all accepted.

In terms of the moderating effects of signboard material and texture, all moderating effects are successful (see Appendix 4). For instance, we observed the interaction effect of signboard material and texture on consumers' brand authenticity ($F [1, 229] = 5.355$, $p = .022$), brand heritage ($F [1, 229] = 4.807$, $p = .029$), and brand status ($F [1, 229] = 3.979$, $p = .047$). Therefore, H7 (i.e., H7a, H7b, and H7c) were all accepted. Subjects in the glossy wooden signboard scenarios reported higher levels of brand authenticity ($M_{\text{wooden-glossy}} = 5.20$, $M_{\text{wooden-matte}} = 4.36$, $F [1, 229] = 17.097$, $p < .001$), brand heritage ($M_{\text{wooden-glossy}} = 5.19$, $M_{\text{wooden-matte}} = 4.61$, $F [1, 229] = 9.214$, $p = .003$), and brand status ($M_{\text{wooden-glossy}} = 4.54$, $M_{\text{wooden-matte}} = 3.82$, $F [1, 229] = 8.952$, $p = .003$) than those in the matte wooden signboard scenarios. The results indicated that in terms of the wooden signboard, the combination of the wooden material and the glossy texture is more likely to form consumers' positive brand perceptions than the combination of the wooden material and the matte texture. However, subjects in the stone signboard conditions rated brand authenticity ($M_{\text{stone-glossy}} = 5.28$, $M_{\text{stone-matte}} = 5.10$, $F [1, 229] = .813$, $p = .368$), brand heritage ($M_{\text{stone-glossy}} = 5.18$, $M_{\text{stone-matte}} = 5.19$, $F [1, 229] = .001$, $p = .981$), and brand status ($M_{\text{stone-glossy}} = 4.66$, $M_{\text{stone-matte}} = 4.61$, $F [1, 229] = .043$, $p = .836$) similarly no matter if the texture is glossy or matte.

5.3. Relationships between brand perceptions and purchase intentions

With regard to the relationship between signboard materials, brand perceptions and purchase intentions, we used PROCESS again to test H4-H6. Subjects' demographic information were control variables. The results show that demographic background was not associated with purchase intentions. Brand authenticity ($p < .05$, 95% CI .0179 to .2665), brand heritage ($p < .001$, 95% CI .1866 to .4609) and brand status ($p < .001$, 95% CI .0780 to .2991) were positively related to purchase intentions, supporting H4, H5, and H6. The results show that signboard material did not directly contribute to purchase intentions ($p = .491$, 95% CI -.2623 to .1262). Additionally, brand authenticity (CI -.3685 to -.0624), brand heritage (CI -.3468 to -.0213) and brand status (CI -.3710 to -.0506) were all successfully mediated the relationships between signboard material and purchase intentions. This again validates the notion that brand perceptions are important mediating factors in bridging material perceptions and purchase intentions in the restaurant context.

6. Discussions and conclusion

6.1. Discussions

In this study, we found that stone materials used by signboards could generate a greater sense of brand authenticity than wood materials (H1). Since we adopted a "true-to-self" approach to measure brand authenticity (Moulard et al., 2021; Xu et al., 2022), our results indicate that stone signboards increased potential restaurant consumers' perceptions of a traditional restaurant's business commitment and dedication. Stone materials have also been found to demonstrate brand heritage, giving consumers the impression that the restaurant brand has long-standing food traditions and history (H2). Moreover, differing from those with wood materials, restaurants' signboards with stone materials were perceived to be more upscale, resulting in a sense of higher brand status (H3). These findings parallel the conceptual and empirical proposition that stone material is more reliable and prestigious in the literature

(Badino & Blengini, 2003). Consistent results were observed between Study 1 and Study 2. The results suggest that Chinese consumers favor stone materials, for which we can find clues from research in exploring Chinese traditional cultures and values (e.g., Confucianism) (Zhao, 2019) and Chinese buildings (e.g., building design) (Wang, 2025). Chinese people value commitment, respect tradition, as well as accept hierarchical relationships based on social status and order (Tsang, 2011).

Meanwhile, the interaction effects between the material and texture of restaurant signboards on all three brand perceptions existed: brand authenticity (H7a), brand heritage (H7b), and brand status (H7c). On the one hand, our results confirmed that material glossiness translates to greater brand perceptions in all scenarios. These are in line with the view that glossiness is perceived as higher class and favorable (Meert et al., 2014). Prior research has associated pleasant perceptions with smoothness and glossiness features (Faucheu et al., 2019). On the other hand, our results of interaction effects suggest that glossy stone signboards were not perceived differently from matte stone signboards. The brand perceptions of consumers from these two types of signboards remained at a similarly high level. Chinese consumers favor stone materials regardless of their texture.

Our findings, however, differ from the other view that wood texture conveys brand heritage and authenticity (Marckhgott & Kamleitner, 2019). We found significant differences between glossy wooden signboards and matte ones. In general, wooden materials can be relevant to positive perceptions (Marschallek et al., 2021), and our study linked them to smoothness and glossiness texture features. In accordance with schema congruence theory (Meyers-Levy & Tybout, 1989), glossy textures and wooden materials are congruent. Matte textures are perceived as incongruent with wooden materials. This may be due to the fact that matte wooden signboards may fit special types of themed restaurants that have wood as their cultural symbols or are related to their thematic features.

Lastly, this research supports all the relationships among brand perceptions and purchase intentions (H4 to H6). Brand passion and dedication are important in authenticating the core value of a restaurant (Xu et al., 2022). In the competitive marketplace, a traditional restaurant's history and tradition inherited through generations are also essential (Song & Kim, 2022). The brand status, relating to social prestige perception, offers added value that is equally important to contributing to consumers' purchase intentions (Nguyer et al., 2020).

6.2. Theoretical implications

First of all, this study is one of the first to explore the effects of material and texture features of traditional restaurants' outdoor signboards on consumers' brand perceptions and purchase intentions. Previous marketing literature has not fully examined the effects of external (service) environmental cues in the foodservice context. This study adds new knowledge on the relationship between material cues and brand perceptions, with contextual and cultural evidence that stone is more likely to generate favorable brand perceptions than wood in China. This finding is particularly applicable in the Chinese traditional catering industry, and could be extended to other hospitality and service sectors. Meanwhile, this study further contributes to the scholarly body of knowledge on visual material perception (Fleming, 2014) by applying it to the context of commercial and hospitality marketing management. Traditional restaurant consumers can easily recognize the materials used in outside signboards, which are influential in forming their brand perceptions.

Second, this study enriches the knowledge of brand management (Keller, 1993; Moulard et al., 2021; Xu et al., 2022) by demonstrating that external environmental cues can influence three dimensions of brand perception: brand authenticity, brand heritage, and brand status. The three dimensions of brand perception have not been fully investigated simultaneously when assessing consumers' cognitive responses to the external service environment. Many prior works have evaluated different dimensions separately, such as brand authenticity (Song et al., 2023; Xu et al., 2022), brand heritage (Pecot et al., 2019; Xu et al., 2025), and brand status (Han et al., 2010). However, focusing merely on one side of brand perception or knowledge may possibly fail to fully capture how restaurants' external environmental cues lead to purchase intention through branding effects. For example, an authentically dedicated restaurant brand may not necessarily be perceived as having high prestige or status (Song et al., 2022).

Third, we applied and extended the use of schema congruity theory (Meyers-Levy & Tybout, 1989) by examining the subtle effects of environmental cues outside of restaurants. In this study, we investigated the combined effects of signboard material and texture. Evidently, domestic tourists in China prefer a glossy texture for a traditional Chinese restaurant's outdoor signboard, stone or wooden, based on their understanding of past dining experiences and expectations. Consumers do not favor wooden signboards with matte textures. They might consider such signboards as worn-out, low-class, and unfit for a downtown traditional restaurant due to the incongruent material and texture design. This study enriches our knowledge of the application of schema congruity theory in the restaurant context by systematically incorporating Chinese cultural values (Tsang, 2011), Confucian aesthetics (Zhao, 2019), and Chinese architectural history (Liu, 2005; Yu, 2007). In this context, both glossy and matte stones can be considered congruent for consumers of Chinese traditional restaurants when they assess whether the restaurant brand is durable, quality, and committed to brand perfection. However, matte wooden signboards deviate from such consumers' schema.

6.3. Practical implications

In this study, it is suggested that traditional restaurants build up and reinforce consumers' brand perceptions prior to their entry into the restaurant. External visual cues to restaurants are important to contribute to brand perceptions in terms of brand authenticity, brand heritage, and brand status. We strongly recommend restaurateurs adopting outdoor signboards to offer a first-impression opportunity for consumers to secure their purchase choice, through satisfying multi-dimensional brand perceptions.

It is recommended that brand perceptions are broken down into several dimensions. In order to project an authentic and upscale brand image with heritage values, restaurants should invite professionals to design their outdoor signboards. More specifically, stone signboards are suggested to be used, rather than wooden signboards, to highlight their restaurant names, business values, and dish characteristics. The glossy wooden material can be an alternative choice. It is recommended that incongruent combinations of material cues are avoided, such as those between wooden materials and matte textures.

Consumer and tourist feedback schemes are suggested to be deployed to provide comments on those creative outdoor signboards, or any other visual cues (e.g., outside appearances and architectonic design) in the external environment. These schemes should determine which visual cues to use and whether they can effectively communicate brand messages driving

consumers' purchasing decisions. Multiple visual cues can be requested for feedback. Restaurants can collect consumer feedback to figure out congruent schema as signboard design elements (e.g., material and texture). Consumers should be encouraged, with business incentives, to share the "schemas" they form in traditional Chinese restaurants, including those originating from Chinese values and design aesthetics.

6.4. Limitations and future research

This study is imperfect due to several limitations. First, this study focused on Chinese domestic tourists in restaurants. Adopting consumers with other cultural backgrounds may result in different results. It is suggested conducting a cross-cultural approach to validate the results. Second, our signboard stimuli in experiments were designed in a rectangular shape, limiting the validity of the research results. Future research could consider to examine whether different signboard shapes can contrast consumers' previous mental frameworks (i.e., schemas) in restaurants. Third, we acknowledge the limitation that our experimental stimuli cannot isolate some specific material properties that drives the observed effects on brand perceptions across the full range. Future research can be conducted to design different types of stone materials (or wooden materials) that differ in terms of their haptic dimensions (Jha et al., 2020) such as hardness, weight, and other properties. Fourth, we did not directly measure participants' pre-existing schemas of traditional restaurant signboards, but inferred them based on cultural and architectural literature. Future research could conduct more pretest checks before main experiments.

References

- Badino, V., & Blengini, G. A. (2003). The importance of marble in cultural sustainability. Sustainable Development Indicators in the Mineral Industries, Milos.
- Baek, E., Huang, Z., & Lee, S. S. (2023). Visual complexity = hedonic? Effects of visually complex packages on consumer perceptions and evaluations of products. *Journal of Retailing and Consumer Services*, 74, Article 103435.
- Belabid, A., Akhzouz, H., Elminor, H., & Elminor, H. (2024). Characteristics of traditional building materials and techniques based on earth, stone and timber: An overview and focus on Morocco. *Journal of Engineering Research and Technology*, 11(1), 9-23.
- Beuckels, S., Audenaert, J., Hanselaer, P., & Leloup, F. B. (2022). Development of an image-based measurement instrument for gloss characterization. *Journal of Coatings Technology and Research*, 19, 1567-1582.
- Bovea, M. D., & Vidal, R. (2004). Materials selection for sustainable product design: a case study of wood based furniture eco-design. *Materials & Design*, 25(2), 111-116.
- Chandler, J. J., Reinhard, D., & Schwarz, N. (2012). To judge a book by its weight you need to know its content: Knowledge moderates the use of embodied cues. *Journal of Experimental Social Psychology*, 48(4), 948-952.
- Chelminski, P., & DeFanti, M. (2018). Leveraging brand heritage's effects on consumers' attitudes and intentions to enhance competitiveness. *Journal of Competitiveness Studies*, 26(1/2), 41-58.
- Chen, F. F., Liu, S. Q., & Mattila, A. S. (2022). Ethnic restaurants: Bringing uniqueness to the table through handwriting. *Cornell Hospitality Quarterly*, 63(4), 465-478.
- Chen, J., Liang, M., & Wei, Y. (2024). The influence of brand innovativeness on consumer purchase intentions towards domestic global brands in emerging markets: Evidence from China. *Journal of Consumer Behaviour*, 23(3), 1208-1218.
- Chen, Q., Huang, R., & Zhang, A. (2020). A bite of nostalgia: The influence of nostalgia in consumers' loyalty intentions at traditional restaurants. *Journal of Hospitality and Tourism Management*, 45, 604-614.
- China Hospitality Association. (2024). *2024 China catering industry annual report*. Retrieved from <https://www.hbfs.edu.cn/>
- Faucheu, J., Weiland, B., Juganaru-Mathieu, M., Witt, A., & Cornuault, P. (2019). Tactile aesthetics: Textures that we like or hate to touch. *Acta Psychologica*, 201, Article 102950.
- Fitzgerald, K. V. (2025). The utilization and deterioration of travertine in classical, Baroque, and Fascist architecture. A case study from Rome, Italy. Unpublished thesis. University of Arkansas.
- Fleming, R. W. (2014). Visual perception of materials and their properties. *Vision Research*, 94, 62-75.
- Fleming, R. W. (2017). Material perception. *Annual Review of Vision Science*, 3, 365-388.
- Fleming, R. W., Torralba, A., & Adelson, E. H. (2004). Specular reflections and the perception of shape. *Journal of Vision*, 13(9), <https://doi.org/10.1167/13.8.9>
- Frizzo, F., Dias, H. B. A., Duarte, N. P., Rodrigues, D. G., & Prado, P. H. M. (2020). The genuine handmade: How the production method influences consumers' behavioral intentions through naturalness and authenticity. *Journal of Food Products Marketing*, 26(4), 279-296.
- Han, S. H., Ekinci, Y., Chen, C., & Park, M. K. (2010). Antecedents and the mediating effect of customer-restaurant brand identification. *Journal of Hospitality Marketing & Management*, 29(2), 202-220.

- Han, Y., & Pandelaere, M. (2021). All that glitters is not gold: when glossy packaging hurts brand trust. *Marketing Letters*, 32(2), 191-202.
- Hanna, P., & Harrison, B. (2004). *Word and world: Practice and the foundation of language*. Cambridge University Press.
- He, J., Xiang, J., & Wang, J. (2024). Extension of heritage brands and consumer purchase intention with the moderating role of pop culture involvement: an empirical analysis of time-honoured brands in China. *Asia Pacific Journal of Marketing and Logistics*, 36(5), 1131-1149.
- Ho, K. F. X., Liu, F., & Tarabashkina, L. (2024). A closer look at geographical indicators: how food labels influence product values, authenticity and willingness to pay premium prices. *Asia Pacific Journal of Marketing and Logistics*, 36(4), 837-861.
- Horsfall, G. A. (1983). *A design theory perspective on variability in grinding stones*. Simon Fraser University.
- Huddleston, P., Coveyou, M. T., & Behe, B. K. (2023). Visual cues during shoppers' journeys: An exploratory paper. *Journal of Retailing and Consumer Services*, 73, Article 103330.
- Jebarajakirthy, C., & Das, M. (2020). How self-construal drives intention for status consumption: a moderated mediated mechanism. *Journal of Retaining and Consumer Services*, 55, 102065.
- Jess, C. (2025). The marketing of marble: Can construction materials act as luxuries? <https://15writers.com/sample-essays/marketing-marble/>
- Jha, S., Balaji, M. S., Peck, J., Oakley, J., & Deitz, G. D. (2020). The effects of environmental haptic cues on consumer perceptions of retailer warmth and competence. *Journal of Retailing*, 96(4), 590-605.
- Kamal, M. A., Chomal, N. S., & Koundal, A. (2024). Exploring stone craft in contemporary interior design: Innovative applications and techniques. *Architecture Engineering and Science*, 5(3), 117-131.
- Keller, K. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1-22.
- Kim, D. Y., & Kim, H. Y. (2021). Trust me, trust me not: a nuanced view of influencer marketing on social media. *Journal of Business Research*, 134, 223-232.
- Kim, J.-H., Song, H., & Youn, H. (2020). The chain of effects from authenticity cues to purchase intention: the role of emotions and restaurant image. *International Journal of Hospitality Management*, <https://doi.org/10.1016/j.ijhm.2019.102354>.
- Kim, J.-H., & Song, H. (2020). The influence of perceived credibility on purchase intention via competence and authenticity. *International Journal of Hospitality Management*, 90, Article 102617.
- Klotz, A. C., Swider, B. W., & Kwon, S. H. (2023). Back-translation practices in organizational research: Avoiding loss in translation. *Journal of Applied Psychology*, 108(5), 699-727.
- Kumar, A., Jyske, T., & Petrič, M. (2021). Delignified wood from understanding the hierarchically aligned cellulosic structure to creating novel functional materials: A review. *Advanced Sustainable Systems*, 5(5), 2000251.
- Lanseng, E. J., & Sivertsen, H. K. (2019). The roles of schema incongruity and expertise in consumers' wine judgment. *Food Quality and Preference*, 71, 261-269.
- Li, F., & Ma, J. (2023). The effectiveness of the destination logo: Congruity effect between logo typeface and destination stereotypes. *Tourism Management*, 98, 104772.
- Line, N. D., Hanks, L., Miao, L., & Daniell, R. B. (2016). Understanding perceptions of e-cigarette use in shared consumption spaces: A schema congruity perspective. *Cornell Hospitality Quarterly*, 57(3), 297-313.

- Liu, D. Z. (2005). *Suzhou classical gardens*. China Architecture & Building Press.
- Liu, D., Zhao, W., Sugumaran, V., & Zhang, J. (2024). Exploring heterogeneous differences between Chinese and Western customer preferences for restaurant attributes from online reviews. *Electronic Commerce Research*, <https://doi.org/10.1007/s10660-024-09889-4>
- Liu, H., Feng, S., & Hu, X. (2022). Process vs. outcome: Effects of food photo types in online restaurant reviews on consumers' purchase intention. *International Journal of Hospitality Management*, *102*, Article 103079.
- Lo, A., & Yao, S. S. (2019). What makes hotel online review credible? An investigation of the roles of reviewer expertise, review rating consistency and review valence. *International Journal of Contemporary Hospitality Management*, *31*(1), 41-60.
- Luo, Y., Xu, Z., & Yang, C. (2025). More visual cues, more congruence? Design strategies for origin labeling on food packaging. *Asia Pacific Journal of Marketing and Logistics*, 1-18.
- Ma, C., Fan, A., & Lee, S. A. (2024). Unveiling the role of congruity in service robot design and deployment. *International Journal of Contemporary Hospitality Management*, *36*(12), 4150-4170.
- Magnier, L., & Schoormans, J. (2017). How do packaging material, colour and environmental claim influence package, brand and product evaluations? *Packaging Technology and Science*, *30*(11), 735-751.
- Magnini, V. P., & Kim, S. (2016). The influences of restaurant menu font style, background color, and physical weight on consumers' perceptions. *International Journal of Hospitality Management*, *53*, 42-48.
- Marckhgott, E., & Kamleitner, B. (2019). Matte matters: When matte packaging increases perceptions of food naturalness. *Marketing Letters*, *30*, 167-178.
- Marschallek, B. E., Wagner, V., & Jacobsen, T. (2021). Smooth as glass and hard as stone? One the conceptual structure of the aesthetics of materials. American Psychological Association.
- Meert, K., Pandelaere, M., & Patrick, V. M. (2014). Taking a shine to it: How the preference for glossy stems from an innate need for water. *Journal of Consumer Psychology*, *24*(2), 195-206.
- Meyers-Levy, J., & Tybout, A. M. (1989). Schema congruity as a basis for product evaluation. *Journal of Consumer Research*, *16*(1), 39-54.
- Morhart, F., Malar, L., Guevremont, A., Girardin, F., & Grohmann, B. (2015). Brand authenticity: an integrative framework and measurement scale. *Journal of Consumer Psychology*, *25*(2), 200-218.
- Moulard, J. G., Raggio, R. D., & Folse, J. A. G. (2016). Brand Authenticity: Testing the Antecedents and Outcomes of Brand Management's Passion for its Products. *Psychology & Marketing*, *33*(6), 421-436. <https://doi.org/10.1002/mar.20888>
- Moulard, J. G., Raggio, R. D., & Folse, J. A. G. (2021). Disentangling the meanings of brand authenticity: the entity-referent correspondence framework of authenticity. *Journal of Academy of Marketing Science*, *49*, 96-118.
- Nunes, J.C., Ordanini, A., & Giambastiani, G. (2021). The concept of authenticity: what it means to consumers. *Journal of Marketing*, *85*(4), 1-20.
- Ollitervo, V., Sipilä, J., & Terho, H. (2025). The package says more than a thousand words: the effect of eco-labelling and package material on consumer's purchase intentions. *Journal of Consumer Behaviour*, *24*(3), 1421-1440.
- O'Neill, C., Houtman, D., & Aupers, S. (2014). Advertising real beer: Authenticity claims beyond truth and falsity. *European Journal of Cultural Studies*, *17*(5), 585-601.

- Pecot, F., Celhay, F., Kacha, M., & Lombard, G. (2022). Expressions of the past: A practice-based approach of brand longevity visual translation in advertising. *Journal of Business Research*, 150, 121-133.
- Pecot, F., Pierre, V.-F., & De Barnier, V. (2019). Brand heritage as a temporal perception: conceptualisation, measure and consequences. *Journal of Marketing Management*, 35(17-18), 1624-1643.
- Phillips, B. J., McQuarrie, E. F., & Griffin, W. G. (2014). How visual brand identity shapes consumer response. *Psychology & Marketing*, 31(3), 225-236.
- Piqueras-Fiszman, B., Laughlin, Z., Miodownik, M., & Spence, C. (2012). Tasting spoons: Assessing how the material of a spoon affects the taste of the food. *Food Quality and Preference*, 24(1), 24-29.
- Pizzetti, M., Chereau, P., Soscia, I., & Teng, F. (2023). Attitudes and intentions toward masstige strategies: A cross-cultural study of French and Chinese consumers. *Journal of Business Research*, 167, Article 114174.
- Saddlemeyer, J., & Bruyneel, S. (2016). Brand logo salience as a signal of brand status. *Association for Consumer Research*, 44, 607-608.
- Schallehn, M., Burmann, C., & Riley, C. (2014). Brand authenticity: model development and empirical testing. *Journal of Product and Brand Management*, 23(3), 192-199.
- Sharan, L., Rosenholtz, R., & Adelson, E. H. (2009). Material perception: What can you see in a brief glance? *Journal of Vision*, 9(8), 784.
<http://www.journalofvision.org/content/9/8/784>, doi:10.1167/9. 8.784.
- Shi, J., & Jiang, Z. (2023). Chinese cultural element in brand logo and purchase intention. *Marketing Intelligence & Planning*, 41(2), 171-185.
- Shi, X. C., & Shi, H. (2025). Exploring enacted abusive supervision: Cross-cultural insights into supervisor stress, power distance belief, and well-being in the hospitality industry. *Journal of China Tourism Research*, <https://doi.org/10.1080/19388160.2025.2597775>
- Song, H., & Kim, J.-H. (2022). Developing a brand heritage model for time-honoured brands: extending signalling theory. *Current Issues in Tourism*, 25(10), 1570-1587.
- Song, H., & Yang, H. (2023). Ethnic restaurants' outdoor signage: the effect of colour and name on consumers' food perceptions and dining intentions. *British Food Journal*, 125(1), 186-204.
- Song, H., Ding, Q. S., Xu, J. B., Kim, J., & Chang, R. C. Y. (2023). Typographic design of outdoor signage, restaurant authenticity, and consumers' willingness to dine: extending semiotic theory. *International Journal of Contemporary Hospitality Management*, 35(7), 2388-2409.
- Song, H., Yang, H., & Ma, E. (2022). Restaurants' outdoor signs say more than you think: An enquiry from a linguistic landscape perspective. *Journal of Retailing and Consumer Services*, 68, 103054.
- Soni, N., & Kumar, S. (2024). What drives new luxury consumption? Application of schema congruity theory and heuristic systematic framework. *Asia Pacific Journal of Marketing and Logistics*, 36(9), 2213-2233.
- Tsang, N. K. (2011). Dimensions of Chinese culture values in relation to service provision in hospitality and tourism industry. *International Journal of Hospitality Management*, 30(3), 670-679.
- Urde, M., Greyser, S. A., & Balmer, J. M. T. (2007). Corporate brands with a heritage. *Journal of Brand Management*, 15(1), 4-19.
- Wang, L., Ho, J., Yeh, S.-S., & Huan, T.-C. (2022). Is robot hotel a future trend? Exploring the incentives, barriers and customers' purchase intention for robot hotel stays. *Tourism Management Perspectives*, 43, Article 100984.

- Wang, Y. (2025). Research on the development stages of Shanghai public art based on urban renewal. *Public Art*, 1, 74-78.
- Wenjuanxing. (2025). Panel data services of Wenjuanxing.
<https://www.wjx.cn/sample/service.aspx>
- Wiedmann, K-P., Hennigs, N., Schmidt, S., & Wuestefeld, T. (2011). Drivers and outcomes of brand heritage: Consumers' perception of heritage brands in the automotive industry. *Journal of Marketing Theory and Practice*, 19(2), 205-220.
- Wu, J., Yang, X., Ren, Y., Xu, M., & Gu, Z. (2025). Research on the art of Taihu stone and Yellow stone landscape in Canglang Pavilion. *Journal of Asian Architecture and building Engineering*, <https://doi.org/10.1080/13467581.2025.2467254>
- Xu, J. B., Prayag, G., & Song, H. (2022). The effects of consumer brand authenticity, brand image, and age on brand loyalty in time-honored restaurants: Findings from SEM and fsQCA. *International Journal of Hospitality Management*, 107, Article 103340.
- Xu, W., Gao, C., Zhang, X., & Wang, L. (2025). The effects of brand heritage and brand innovation on extended product purchase intentions for corporate heritage brands: a ying-yang perspective. *Journal of Product & Brand Management*, DOI: 10.1108/JPBM-02-2024-4969
- Yan, L., Xiaojun, F., Li, J., & Dong, X. (2019). Extrinsic cues, perceived quality, and purchase intention for private labels: Evidence from the Chinese market. *Asia Pacific Journal of Marketing and Logistics*, 31(3), 714-727.
- Yang, H., Song, H., Ding, Q., & Wang, H. (2022). Transparency, authenticity and purchase intentions: Chinese independent restaurants. *International Journal of Contemporary Hospitality Management*, 34(11), 4245-4265.
- Ye, N., Morrin, M., & Kampfer, K. (2020). From glossy to greasy: The impact of learned associations on perceptions of food healthfulness. *Journal of Consumer Psychology*, 30(1), 96-124.
- Yeoh, K. C. (2017). The golden dragon wok: A visual survey of the evocative essence of Chinese restaurant signage designs in an American Chinatown. *The International Journal of Visual Design*, 11(2), 1.
- Youn, H., Yin, R., Kim, J-H., & Li, J. (2020). Examining traditional restaurant diners' intention: An application of the VBN theory. *International Journal of Hospitality Management*, 85, 102360.
- Yu, J., Baah, N. G., Kim, S. S., Moon, H., Chua, B-L., & Han, H. (2023). Effects of green authenticity on well-being, customer engagement and approach behavior toward green hospitality brands. *International Journal of Contemporary Hospitality Management*, 36(9), 3129-3150.
- Yu, X., Huang, H., Liu, S. Q., & Lu, Z. (2020). Signaling authenticity of ethnic cuisines via handwriting. *Annals of Tourism Research*, 85, 1-13.
- Yu, Z. Y. (2007). *Palace museum architectural atlas*. Palace Museum Press.
- Yuan, W., Guo, F., Li, M., & Song, H. (2024). Effects of sensory cues on consumers' wine taste perceptions and behavior: evidence from a wine-tasting experiment. *International Journal of Contemporary Hospitality Management*, 36(12), 4171-4191.
- Zestcott, C. A., Stone, J., & Landau, M. J. (2017). The role of conscious attention in how weight serves as an embodiment of importance. *Personality and Social Psychology Bulletin*, 43(12), 1712-1723.
- Zhao, Z. (2019). *Ten lectures on traditional Chinese cultures* (中國傳統文化十講). Chongqing University Press.
- Zhisheji. (2005). Design of Chinese traditional restaurants' signboards. Extracted from <https://www.zhisheji.com/>

Zuo, H., Jones, M., Hope, T., & Jones, R. (2016). Sensory perception of material texture in consumer products. *The Design Journal*, 19(3), 405-427.

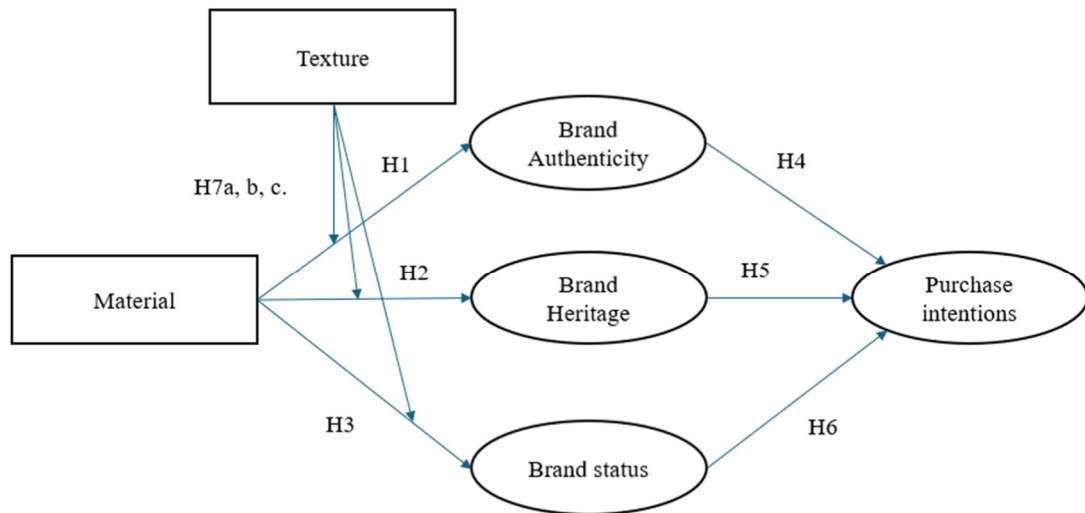


Figure 1: Conceptual Framework

Appendix 1

Please imagine that you are traveling in a domestic city, and you would like to choose a place for your meal. You are seeing a traditional restaurant with a signboard shown in the picture below.

Scenario 1:



Scenario 2:



Appendix 2

Scenario 1:

Please imagine that you are travelling in a domestic city, and you would like to choose a place for your meal. You are seeing a traditional restaurant with a signboard made of a polished marble.



Scenario 2:

Please imagine that you are traveling in a domestic city, and you would like to choose a place for your meal. You are seeing a traditional restaurant with a signboard made of a matte stone.



Scenario 3:

Please imagine that you are traveling in a domestic city, and you would like to choose a place for your meal. You are seeing a traditional restaurant with a signboard made of a polished wooden board.



Scenario 4:

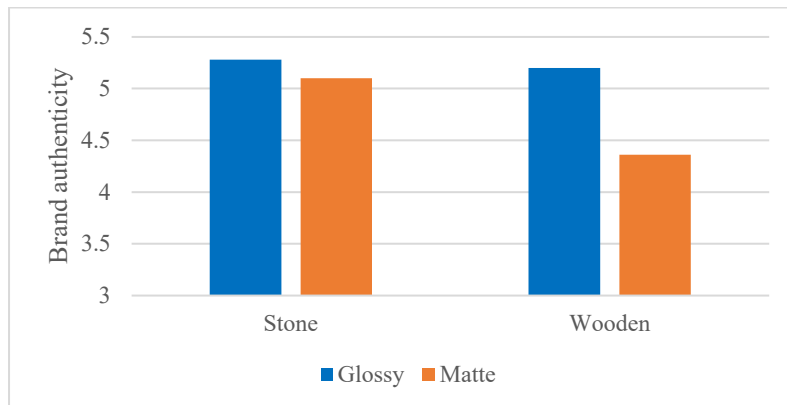
Please imagine that you are traveling in a domestic city, and you would like to choose a place for your meal. You are seeing a traditional restaurant with a signboard made of a matte wooden timber.



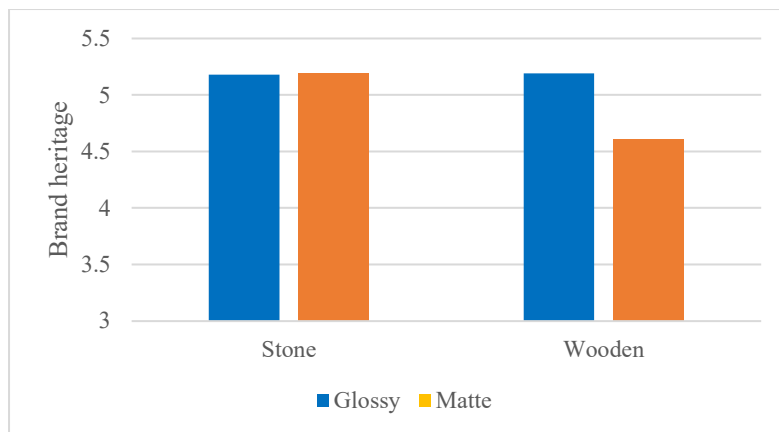
Appendix 3

Construct and item	Study 1 (N = 104)		Study 2 (N = 239)	
	Factor loading	Cronbach's alpha	Factor loading	Cronbach's alpha
<i>Brand authenticity</i>		.853		.866
This restaurant brand has a true passion for its business.	.905		.891	
This restaurant brand wants to do its best at providing its product/service.	.865		.893	
This restaurant brand is devoted to what it does.	.867		.881	
<i>Brand heritage</i>		.840		.840
This restaurant brand is exuding a sense of tradition.	.802		.807	
This restaurant brand has a strong link to the past.	.867		.872	
This restaurant brand knows how to reinvent itself.	.843		.863	
This restaurant brand has a long history.	.788		.760	
<i>Brand status</i>		.858		.865
This restaurant seems upscale.	.882		.872	
This restaurant has more status relative to other restaurants.	.889		.896	
This restaurant has a high degree of status.	.833		.848	
This restaurant is special.	.739		.753	
<i>Purchase intention</i>		.777		.794
If the price and menu are suitable, I would like to dine in this restaurant.	.777		.830	
If the price and menu are suitable, I would choose to go to this restaurant over other restaurants in the future.	.842		.839	
If the price and menu are suitable, this restaurant would be my first choice compared with other restaurants in the future.	.879		.868	

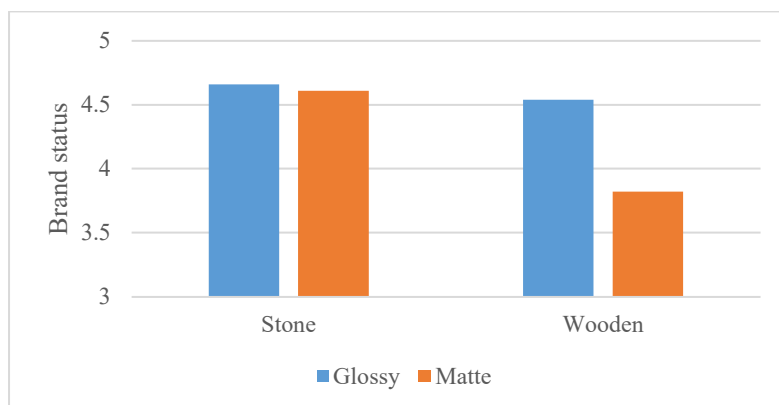
Appendix 4



Interaction effect of material and texture on brand authenticity



Interaction effect of material and texture on brand heritage



Interaction effect of material and texture on brand status