Restaurants' outdoor signs say more than you think: An enquiry from a linguistic landscape perspective

Hanqun Song [a,*], Huijun Yang [b], Emily Ma [c]

[a] School of Management, University of Bradford, West Yorkshire, UK
[b] School of Hospitality Management, Macao Institute for Tourism Studies, Colina de Mong-Há Macau, China
[c] School of Hospitality and Tourism Management, University of Surrey, Guildford, UK

A B S T R A C T

Building on the linguistic landscape theory and literature on customers' experience with restaurants' authenticity and status, this study investigates whether restaurants' outdoor signs influence customers' perceptions and behavioral intentions. Using an experimental design comprising two studies, supported by data collected from Chinese consumers, we test how display characters and text flow may jointly impact on customers' perceptions of the status and authenticity of ethnic (Japanese and Taiwanese) restaurants, thus influencing their visiting intentions and willingness to pay. We find that display characters influence Chinese customers' perceptions of authenticity and status in both Japanese and Taiwanese restaurants in Mainland China. There is an interaction effect between display characters and text flow on customers' perception of authenticity and status in Japanese restaurants in Mainland China. This study applies the linguistic landscape theory to a restaurant context and examines how such features may influence customers' perceptions and decisions. The findings have important practical implications on managing customer experiences and perceptions via effective restaurant sign designs.

1. Introduction

The restaurant industry in China has grown tremendously over the last few decades, as a result of the steady growth of China's economy, the increase in people's disposable income, and the expansion of China's service sector (e.g., Ho et al., 2020; Wong, 2020). Increased globalization, international trade, foreign investments and outbound travel have also fostered the popularity of various international and ethnic cuisines in China (Wang et al., 2016). Chinese consumers can now enjoy a wide variety of ethnic cuisines, including American, Japanese, Italian and Mexican, not only in big cities but also in second-and third-tier cities (Zhu et al., 2018). Ethnic cuisines offer alternative food choices and opportunities to experience different cultures (Boch et al., 2021). Japanese and Taiwanese cuisines are particularly popular. According to a recent report (Xinhuanet, 2019), prior to the outbreak of the COVID-19 pandemic, there were more than 40,000 Japanese restaurants in Mainland China, and Taiwanese food establishments were also common, offering milk tea, beef noodle soup, hot-pot and fine-dining Dim Sum (Ren, 2019).

The growing number of ethnic restaurants offers Chinese consumers more dining options, while intensifying competition in the restaurant industry (MarketWatch, 2021). Faced with a paradox of choice (Birkett, 2020), consumers may find it difficult to choose between so many options. Consequently, restaurant operators are devoting considerable effort to attract consumers attention by enhancing exterior design features, including lighting, display windows and outdoor signage (e.g., Bloch and Kamran-Disfani, 2018). Compared with using display windows and attractive outdoor lighting to attract potential diners' attention, the use of display characters in restaurants' outdoor signs is often overlooked, yet it is highly relevant to ethnic restaurants. Existing literature in the marketing field has suggested that characters displayed vertically and horizontally can have different effects on consumers' perception of brands and products. For instance, Xi et al. (2021) suggested that in advertising, vertically displayed characters can be more persuasive than horizontally displayed characters, particularly for consumers who have a past focus. Deng et al. (2019)'s study focusing on texts directions' influence on consumers' temporal perception suggested when writing in a vertical (vs. horizontal) orientation, descriptions of past contexts/stories were perceived as having a longer past temporal distance. In addition, a brand/product is perceived as more antique or traditional when using vertically flowed texts than horizontal texts. However, there is still a lack of research on how languages flow may

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influence customers' perception in the context of ethnic restaurants.

From the perspective of the linguistic landscape, Landry and Bourhis (1997) suggest that languages displayed on signs in public spaces, such as billboards, street names and business signs, not only play a role in communicating information, but also perform symbolic functions, such as reflecting social status, aesthetics, exotic atmosphere, and hospitality (Shang and Zhao, 2014). However, most studies in this field take a macro perspective on the linguistic landscape, for instance by examining multiple languages appearing in a particular area such as a tourist destination or a city. These studies do not reflect subtle differences in the same language. In the case of Taiwanese cuisine, although Chinese is spoken in both Mainland China and Taiwan, Mainland China uses simplified Chinese characters whereas Taiwan uses traditional Chinese characters in writing. Researchers suggested that languages displayed on signs often demonstrate authenticity, a determining factor in customers' dining experiences (e.g., Baker and Kim, 2018). In addition, since traditional Chinese characters are more complicated to write, they are also linked with high literacy levels and status (e.g., Yan, 2016). Yet, it is still unclear how would traditional or simplified Chinese characters influence restaurant customers' perception, dining experience and future intentions, leaving this important research gap that needs to be addressed.

Guided by the linguistic landscape literature and focusing on two important ethnic cuisines in Mainland China, this study explores how display characters on restaurants' outdoor signs may affect customers' perceptions and evaluations of ethnic restaurants. First, the study assesses whether the characters displayed (simplified versus traditional Chinese) influence potential customers' perceptions of restaurants' authenticity and status. Second, although texts flow has been suggested as an important factor influencing consumers' perception in marketing and advertising literature (e.g., Xi et al., 2021; Deng et al., 2019), it is still not clear whether it would have similar effects in ethnic restaurant contexts. Therefore, the study will examine whether the flow of text (vertical versus horizontal) moderates the effect of display characters on customers' perceptions of restaurants' authenticity and status. Third, it compares whether such influences differ between Japanese and Taiwanese restaurants. The study contributes to the literature on linguistic landscapes, ethnic restaurants, and authenticity and status issues in the context of Japanese and Taiwanese restaurants in Mainland China. The findings have important practical implications for restaurant operators, particularly in relation to designing effective restaurant signs to attract customers.

2. Literature review and hypothesis development

2.1. Theoretical foundations

Outdoor signage is a medium of communication through written language between people and their environment (Mulyawan, 2017). The linguistic landscape relating to outdoor signage includes the language of public road signs, advertising billboards, names of streets and places, and commercial shop signs (Landry and Bourhis, 1997). The linguistic landscape is defined as the use of language in its written form in the public sphere (Gorter, 2006), referring to the visibility and salience of language used on public and commercial signs, and their informational and symbolic functions (Landry and Bourhis, 1997).

Since its emergence, the concept of the linguistic landscape has been used extensively in sociolinguistic research (Sheng and Buchanan, 2019) to examine language vitality (Amos, 2017), competition (Nikolaou, 2017), and evolution (Wong and Chan, 2018). The linguistic landscape theory has been widely applied in retail and consumer service contexts (Touchstone et al., 2017) to study how written texts in advertisements could influence consumers' perceptions and behaviors (e.g., Bordia and Bordia, 2015; Buckingham, 2019). Shang and Guo (2017) have used the theory in the context of shops in Singapore to test the display of multiple languages in shop names. Despite the obvious presence of retailing and

consumer services in shaping linguistic landscapes, to the best of our knowledge, research in this field has not taken into account how the display characters and text flow on outdoor signs could influence Chinese restaurant customers' perception on the authenticity and status of ethnic restaurants and consequently their behavioral intentions.

In addition, the theory has also been adopted as indispensable theoretical concept in tourism and hospitality industries (Buckingham, 2019; Sheng and Buchanan, 2019). Most of these studies have investigated the use of foreign languages, or multilingual contexts such as Spanish and Chinese (Buckingham, 2019), Chinese, English and Korean (Sheng and Buchanan, 2019). References to variations in writing in the same language are salient, although little or no research has been carried out on traditional Chinese characters, which were imported from ancient China to Japan and are officially used in Taiwan. Furthermore, existing linguistic landscape studies tend to focus on a macro perspective, such as cities (Shohamy et al., 2010), small towns (Sheng and Buchanan, 2019) or attractions (Buckingham, 2019), whereas few address the linguistic landscape of restaurants, and even fewer examine restaurants' outdoor signage.

The linguistic landscape has been linked with authenticity, which is a key driver of consumers' visits (Kovács et al., 2014). A major function of the linguistic landscape is symbolic, as social status and the relationship between markers and readers are reflected through language (Shang and Zhao, 2014). With regard to restaurants, the linguistic landscape links restaurants (markers) with consumers (readers), and restaurants may therefore choose different linguistic display characters and text flow to deliver information and symbolic meanings to their consumers. This symbolic function in restaurant outdoor signage may thus reflect restaurants' authenticity and status.

There are two types of Chinese characters: simplified Chinese characters are used in the Chinese Mainland, and traditional Chinese characters, which were officially used in the Chinese Mainland until 1956, are still in use today in Taiwan, Hong Kong and Macao (Su and Chun, 2021; Yang and Wang, 2018). Simplified Chinese characters are indexical of the revolutionary discourse and are a simplified version of traditional Chinese characters. The latter are associated with aesthetics and authenticity (Scollon and Scollon, 2003). Many traditional Chinese characters are common to Japanese Kanji (Wang et al., 2016). They were imported from China to Japan and were incorporated into the Japanese writing system as early as the sixth century (Loveday, 1996). Owing to this long history, use of traditional Chinese characters is regarded as a genuine Japanese tradition in businesses such as restaurants (Goldstein-Gidoni, 2001). Chinese characters were historically written vertically (Chor, 2012), and the text in historical Japanese books is also written vertically (Panichkriangkrai et al., 2017). Text flow may differentiate cultural images of the West and East Asia, with the former horizontal and the latter vertical (Chor, 2012).

Authenticity, defined as being genuine, is regarded as a characteristic of ethnic restaurants (Youn and Kim, 2017). Common motivations for consumers to visit ethnic restaurants is to taste exotic ethnic food and to experience ethnic cultures that differ from the mainstream culture (Youn and Kim, 2017). Restaurant atmospherics, such as social, design, and ambient factors, may convey a sense of restaurant authenticity (Al-Kilani and El Hedhli, 2021). Although authenticity contributes positively to consumers' visiting intentions (Wu and Hsu, 2018), language, one of the key design elements, has received little attention in the existing literature.

As an evaluative judgment, status conveys high or low prestige or esteem (Cervellon et al., 2019). Consumers evaluate brands as having different status levels (O'Cass and McEwen, 2004). For instance, a brand's aesthetics may symbolize style and prestige (Vigneron and Johnson, 2004). Brand status refers to customers' perceptions of quality and prestige, and the brand's ability to act as a status or success symbol (O'Cass and Choy, 2008). It plays an important role in purchase decisions (Kao, 2015) and visiting intentions. Consumers' willingness to pay for a brand correlates with its status (Pino et al., 2019): the higher

the brand status, the greater consumers' willingness to pay.

2.2. Effect of display characters on restaurant authenticity

Linguistic and typographical design elements of a restaurant's name may affect customers' attitudes and perceptions (Le Roux et al., 2016). Baker and Kim (2018) find that service providers speaking in a foreign language (i.e., Korean) in Korean restaurants enhances consumers' perceptions of the restaurants' authenticity. In addition to the spoken language, the writing system of a language may also affect consumers' food authenticity perceptions. Since food authenticity is often associated with a specific country or place of origin (Chousou et al., 2018), it is supposed that ethnic cuisines originating from countries and regions using traditional Chinese characters, such as Taiwan and Japan, may convey a flavor of food authenticity when ethnic restaurants use traditional Chinese characters in their outdoor signage, whereas using simplified Chinese characters may convey inauthenticity. Based on this discussion, we propose the following hypothesis:

H1. Display characters positively influence consumers' perceptions of restaurant authenticity. In particular, adopting traditional Chinese characters for ethnic cuisines originating from countries or regions using traditional Chinese characters generates higher levels of restaurant authenticity than adopting simplified Chinese characters.

Congruency theory indicates that individuals are likely to form positive evaluations and behavioral intentions toward objects with congruent cues, such as scent and music in a shop (Morrison et al., 2011). In ethnic restaurants, congruence between different authenticity cues may enhance consumers' perceptions of authenticity. For example, Wang and Mattila (2015) find that consumers perceive significantly greater authenticity in situations with greater congruence between the high ethnic theme of physical environment and the ethnic service team than in situations with incongruence between multiple authenticity cues. Traditional Chinese scripts in Taiwan and Japan are often placed vertically (Panichkriangkrai et al., 2017). However, due to modernization, Chinese text is now commonly written horizontally in mainland China (Chung et al., 2000). Consumers may view vertical text flow as more authentic if a restaurant's ethnic cuisine (e.g., Taiwanese and Japanese) comes from a country or region that tends to write text vertically. Traditional Chinese characters may also enhance restaurant authenticity if the ethnic cuisine (e.g., Taiwanese and Japanese) originates from a country or region mainly using traditional Chinese characters. Following the congruency theory (Morrison et al., 2011; Sirgy, 1982), we hypothesize that consumers will be more likely to form a restaurant's authenticity when there is a full congruity between two authenticity cues, such as traditional Chinese characters that are vertical flowed, instead of simplified Chinese that is vertically flowed. In addition, semi congruity between two authenticity cues is more likely to generate consumers' restaurant authenticity than full incongruity between two authenticity cues. For example, traditional Chinese characters with a horizontal flow convey higher level of authenticity than simplified Chinese characters and horizontal flow. This leads to the following hypotheses:

H2a. Adopting traditional Chinese characters in the vertical flow condition will generate higher restaurant authenticity than adopting simplified Chinese characters in the vertical flow condition. In other words, fully congruity between signage cue and the theme of the ethnic restaurant will generate higher restaurant authenticity than semi congruity between signage cue and the theme of the ethnic restaurant.

H2b. Adopting traditional Chinese characters in the horizontal flow condition will generate higher restaurant authenticity than adopting simplified Chinese characters in the horizontal flow condition. In other words, semi congruity between signage cue and the theme of the ethnic restaurant will generate higher level of restaurant authenticity than fully incongruity between signage cue and the theme of the ethnic restaurant.

2.3. Effect of display characters on restaurant status

Brand status is defined as the social prestige value conferred on a brand (Eastman et al., 1999). Brand status may be conveyed by a product's or brand's appearance or physical features (Kapferer, 2012), such as the logo (Han et al., 2010) and ornate decoration (Townsend, 2017). For example, luxury brands tend to use less conspicuous logos, from which consumers infer higher brand status (Saddlemyer and Bruyneel, 2016). Lee et al. (2018) indicate that service propositions also influence consumers' perceptions of restaurant status.

Traditional characters are more strongly associated with symbolic values such as authenticity and aesthetics (Su and Chun, 2021). Consumers' perceptions of brands' status are often linked with their symbolism and prestige (O'Cass and Choy, 2008). The aesthetics of traditional characters are more highly valued than simplified characters, and traditional Chinese is associated with higher-quality product or design, which may be seen as a symbolic value conveying higher status (Su and Chun, 2021). Therefore, the following hypothesis is proposed:

H3. Display characters positively influence consumers' perceptions of restaurant status. In particular, traditional Chinese characters convey higher status than simplified Chinese characters.

The semiotic complexity of signs is also evident in the arrangement of text (Scollon and Scollon, 2003). Chinese was traditionally written vertically from top to bottom, but is now written from left to right in Mainland China (Cook, 2013), although vertical text arrangement continues to be associated with traditional Chinese (Lou, 2007). Chinese consumers may perceive a product as classic or antique when its display characters appear in a traditional vertical arrangement (Deng et al., 2019). Text written on restaurants' signage may also shape consumers' perceptions of the restaurants' status (Jurafsky et al., 2018). Most outdoor Japanese restaurant and pub signs are traditionally displayed vertically (Backhaus, 2005), matching the image of traditional Japanese cuisine (Curtin, 2009). As Japan has recently acquired high culinary status, the Japanese language is associated with high status and luxury restaurants (Jurafsky et al., 2018). Vertical signboards are also common for Taiwanese restaurants in Taiwan (Curtin, 2009). A vertically-oriented advertisement background increases perceptions of a product's luxury and conveys higher status than a horizontally-oriented background (van Rompay et al., 2019). Deng et al. (2019) confirm an interaction effect between brand positioning (traditional versus modern) and text flow (vertical versus horizontal) on advertisements and brand status. According to the congruency theory (Morrison et al., 2011; Sirgy, 1982), consumers will be more likely to perceive higher restaurant status when there is a full congruity between the signage cue and the theme of the ethnic cuisine (e.g., vertical text flow is combined with traditional Chinese characters in Taiwanese or Japanese cuisine) than semi congruity between the signage cue and the theme of the ethnic cuisine (e.g., either vertical text flow or traditional Chinese characters in Taiwanese or Japanese cuisine). Similarly, consumers' perceived status of the restaurant will be higher when semi congruity between the signage cue and the theme of the ethnic cuisine was presented than when complete incongruity between signage cue and the theme of the ethnic cuisine was presented (e.g., horizontal text flow is combined with simplified Chinese characters in Taiwanese or Japanese cuisine). Hence, the following hypotheses are proposed:

H4a. : Adopting traditional Chinese characters in the vertical flow condition will generate higher restaurant status than adopting simplified Chinese characters in the vertical flow condition. In other words, fully congruity between signage cue and the theme of the ethnic restaurant will generate higher restaurant status than semi congruity between signage cue and the theme of the ethnic restaurant.

H4b. Adopting traditional Chinese characters in the horizontal flow condition will generate higher restaurant status than adopting simplified Chinese characters in the horizontal flow condition. In other words, semi

congruity between signage cue and the theme of the ethnic restaurant will generate higher restaurant status than fully incongruity between signage cue and the theme of the ethnic restaurant.

2.4. Authenticity, status, and customers' behavioral intentions

Seeking authentic experiences is a primary motivation for consumers visiting ethnic restaurants (Nakayama and Wan, 2019). Restaurant authenticity refers to the degree to which the food and dining environment are perceived to genuinely reflect the restaurant's ethnic type and culture of origin (Youn and Kim, 2017). Authenticity is regarded as a characteristic of luxury brands (Septianto et al., 2020), and luxury consumption is used as a signal of status (Sung and Phau, 2019). Previous studies confirm that authenticity creates a distinctive brand identity and contributes to social benefits, such as brand status (Lee et al., 2019). Based on this logic, the following hypothesis is proposed:

H5. Restaurant authenticity positively affects restaurant status.

Consumers' visiting intentions, defined as the likelihood that they will visit a particular business (Ahn et al., 2013), have proved to be relatively accurate predictors of future behavior (Tan and Huang, 2020). Existing literature on restaurants broadly confirms a positive relationship between brand authenticity and consumers' purchase intentions (Osorio et al., 2021; Pelet et al., 2020). Thus, it is commonly accepted that the higher a restaurant's authenticity, the great the likelihood that consumers will revisit the restaurant (Youn and Kim, 2017). In a similar vein, we propose that consumers are more likely to visit a restaurant if it is perceived to be authentic:

H6. Restaurant authenticity positively affects visiting intentions.

When a consumer perceives there is a congruency between a shop's image and his or her own image and identity, there is a congruency between the brand and the consumer (Sirgy, 1982; Sirgy et al., 1991). Congruency interacts with consumers self-identity and affects consumers' purchase intentions and responses to certain brands (Nguyen et al., 2020). Since brands usually contain important symbolic meanings, consumers visit and purchase certain brands to maintain their self-identities (congruence between consumers' own identity and brand status). On the other hand, brands can use symbolic features to show their status and thus positively influence consumers' purchase intentions (Nguyen et al., 2020). Brand status is associated with high quality, which increases customers' purchase intentions (Atulkar, 2020). Product design and aesthetics may extend beyond visual appeal to signal brand status and inform consumer choice (Sundar and Noseworthy, 2014), such as visiting intentions. This implies that status-conscious consumers develop associations with high-status brands, which influences their purchasing behavior (Jebarajakirthy and Das, 2020). Thus, brand status plays an important role in purchasing decisions (Kao, 2015), leading to the following hypothesis:

H7. Restaurant status positively affects visiting intentions.

Restaurant businesses endeavor to embed good value in consumers' minds (O'Connor et al., 2017) in order to retain them as diners. Previous literature shows a link between business authenticity and perceptions of value. For example, consumers are more likely to pay premium prices for brands and restaurants with high levels of authenticity (e.g., Carsana and Jolibert, 2018; O'Connor et al., 2017). Kovács et al. (2014) reveal that consumers also rate authentic restaurants as offering higher value than less authentic ones. Accordingly, we hypothesize that consumers will be willing to pay more if a restaurant is viewed as authentic.

H8. Restaurant authenticity positively affects willingness to pay.

Research has recognized the importance of congruency between consumers and brands in consumer behaviors (Hosany and Martin, 2012; Sirgy et al., 1991). For instance, congruency is found to affect a destination's image and consumers' visiting intention (Beerli et al.,

2007; Sirgy and Su, 2000). Brand status plays a vital role in purchase decisions by consumers seeking to gain social status or enhance their sense of self-worth (Nabi et al., 2019). Consumers are more willing to pay for a brand with symbolic value (Diallo et al., 2021), which refers to the potential benefits of consuming branded products perceived as being of superior quality (O'Cass and Choy, 2008). As customers generally believe that high-status restaurants are of better quality than low-status ones, they may be willing to pay more for perceived quality (Pino et al., 2019). O'Cass and Choy (2008) further indicate that brand status has a positive impact on consumers' willingness to pay. This leads to our final hypothesis:

H9. Restaurant status positively affects willingness to pay.

The research model for this study is shown in Fig. 1.

3. Method

3.1. Overview of research design

We conducted two between-subject, 2*2 (display characters: simplified versus traditional Chinese; text flow: vertical versus horizontal) experimental studies to test our hypotheses. Study 1 featured a Japanese restaurant, and Study 2 featured a Taiwanese restaurant, both operated in the context of Mainland China. Japanese and Taiwanese cuisines were selected owing to their practical and theoretical significance. From a practical perspective, both Japanese and Taiwanese ethnic cuisines are popular in Mainland China, and the market shares of both cuisines are growing quickly (Ren, 2019). From a linguistic landscape theory perspective, previous literature has applied the theory mainly to contexts using multiple languages (e.g. Buckingham, 2019). However, different formats of the same language (e.g., traditional and simplified Chinese characters) have received little research attention.

Both studies tested the effects of two independent variables – display characters and text flow– on dependent variables which are restaurant authenticity and status. Both studies also investigated the relationship between authenticity, status and visiting intentions. In Study 2 with Taiwanese restaurants, the researchers also included an additional variable of willingness to pay due to the various characteristics of Japanese cuisine and Taiwanese cuisine in the Chinese Mainland. Compared to novel Japanese cuisine (e.g., sashimi of raw quality fish), Mainland Chinese consumers are more familiar with Taiwanese cuisine. Taiwanese cuisine, with its origin from Fujian cuisine in the Mainland, represents a lower status and was served in public eating places specialising in snacks such as food stalls in night bazaars or sidewalk restaurants for ordinary people (Cheung and Wu, 2014). Therefore, in addition to checking whether consumers would like to try Taiwanese cuisine, the researchers are also interested in how much consumers are willing to pay.

3.2. Scenario development

Display characters and text flows treatments were made on hypothetical names of the Japanese restaurant name and the Taiwanese restaurant name. A pool of 10 popular restaurant names were obtained based on research for both the Japanese restaurant and the Taiwanese restaurant, and they were assessed by 21 experienced consumers on their attractiveness and suitability as a restaurant name for the Japanese restaurant, and the Taiwanese restaurant respectively, on a seven-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). For the Japanese restaurant (Study 1), the name *Qi Ze Feng* (气泽风 in simplified Chinese characters or 氣澤風 traditional Chinese characters) was selected. *Qi* refers to air or gas, *Ze* means swamp or marsh, and *Feng* means wind or style. For the Taiwanese restaurant (Study 2), the name *Feng Xing Guan* (丰兴馆 in simplified Chinese characters or 豐興館 in traditional Chinese characters) was selected. *Feng* refers to abundance, *Xing* means thriving, and *Guan* means house. The four scenarios incorporating traditional/
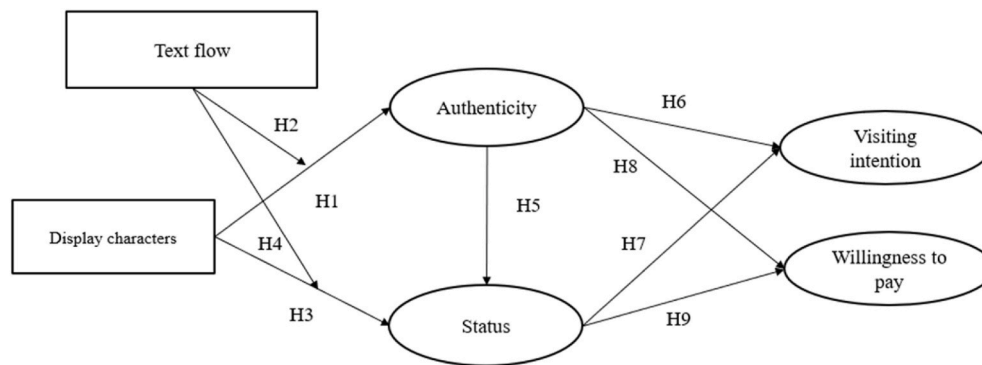
Fig. 1. Conceptual framework.

simplified Chinese and vertical/horizontal flow for each experiment are shown in Appendix 1.

3.3. Measurement

All constructs used in two studies are measured using previously validated scales. For example, **restaurant authenticity** was measured using five items from Wang and Mattila (2015). **Restaurant status** was measured using 4 items adapted from Dreze and Nunes (2009), and visiting intentions were measured using three items from Wang and Mattila (2015). The constructs are shown in Appendix 2. In addition, in Study 2, we assessed participants' **willingness to pay** by asking them to choose one amount range from a list of eight options (e.g., below 30, 31–50, 51–70, 71–100, 101–130, 131–160, 161–200 and above 201 RMB). Consumers' openness to ethnic food influences their perception and behavior towards ethnic food (Youn and Kim, 2017); thus, we considered this a covariate for both studies. We adapted the measurement of openness to ethnic food from the previous study by Youn and Kim (2017) to fit this paper using four items: 1) I like to eat foods from different cultures, 2) I often try for foods from different cultures, 3) I am constantly trying new and different foods, and 4) I like to try new ethnic restaurants. Besides willingness to pay, all other constructs were measured on a seven-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*).

3.4. Data collection and participant profile

We asked two marketing research firms in China to collect data. In Study 1, Wenjuanxing, a reliable Chinese marketing research company, collected data using a database of 2.6 million consumers. In Study 2, we used another Chinese marketing research company, Baidu Panel Data, to minimise common method variance (Chang et al., 2010) and to confirm the results of Study 1. With a database of 17 million valid consumers in China, Baidu Panel Data has been confirmed as collecting valid and reliable data. For both studies, participants had to be over 18 years old and Chinese residents in China, and must have dined in at least one Japanese/Taiwanese restaurant in the previous three months. An e-link to a survey was sent to qualified participants. After clicking the link, these subjects were randomly allocated to one of the four experimental conditions, and were invited to answer questions after reading the scenarios.

We used G*Power software to calculate the minimum sample size for each experiment. As we planned to use the two-way analysis of covariance (ANCOVA) to analyze data, we set up a 'medium' effect size (f = 0.25), a α err prob of 0.05, a power of 0.85, four experimental groups, and four covariates to generate that the minimum sample size for each study is 178 (G*Power, 2022). In Study 1, a total of 203 Chinese residents participated in this study, with cell sizes of 50–51 samples for each condition. Of these, 60.9% were 21–30 years old, 55.7% were female, and 56.7% had a bachelor's degree. The most popular occupation

was white-collar workers (22.2%), and 24.1% of participants had a personal monthly income of RMB 3,000–4,999 (approximately US$ 468–782), which was the most popular income category. In Study 2, a total of 180 Chinese residents participated in this study, with cell sizes of between 40 and 50 samples for each condition. The most popular age group was 21–30 (51.1%). More males (65.6%) joined this study than females (34.4%), and 71.7% of participants held a bachelor's degree. The top occupation was white-collar workers (39.4%). The most popular category of personal monthly income was RMB 7,000 and 9,999 (29.4%).

3.5. Data analysis

We used the two-way ANCOVA in SPSS to analyze the effects of two independent variables, display characters and text flow, on dependent variables, restaurant authenticity and status. Then, we utilised Hayes's (2018) PROCESS Model 84 to examine the hypothesized relationships. Model 84 has one independent variable of X, dependent variable of Y, two mediators of M1 and M2, and the moderator of W which moderates the relationship between X and M1, and between X and M2. In both studies, we first considered display characters as X, authenticity as M1, status as M2, visiting intention as Y, text flow as W, and demographic variables and openness to ethnic food as covariates. Then, using willingness to pay as Y, we conducted Model 84 again in Study 2 (Hayes, 2018). We used age, gender, income, and openness as covariates.

4. Results

4.1. Results of study 1: Japanese cuisine

Manipulation checks on the two independent variables were successful. Participants saw restaurant signs written in the traditional Chinese characters rated higher on the question of 'in the scenario, the sign is written in traditional Chinese characters than those in the simplified Chinese characters condition ($M_{\text{traditional Chinese}} = 5.03 > M_{\text{simplified Chinese}} = 2.38$, $t[201] = -11.317$, $p < 0.001$). Furthermore, subjects in the horizontal text condition agreed more on 'in the scenario, the sign is displayed in horizontal flow' than those in the vertical text condition ($M_{\text{horizontal}} = 5.76 > M_{\text{vertical}} = 2.65$, $t[201] = 13.532$, $p < 0.001$).

As shown in Table 1, the main effect of display characters on participants' perceptions of restaurant authenticity ($F[1, 193] = 50.985$, $p < 0.001$) and status ($F[1, 193] = 28.941$, $p < 0.001$) was significant. Participants in the traditional Chinese characters group ($M_{\text{traditional Chinese}} = 5.09$) rated restaurant authenticity significantly higher than those in the simplified Chinese characters group ($M_{\text{simplified Chinese}} = 4.17$), supporting H1. Similarly, subjects in the traditional Chinese characters condition ($M_{\text{traditional Chinese}} = 4.42$) rated restaurant status statistically higher than those in the simplified Chinese characters condition ($M_{\text{simplified Chinese}} = 3.54$), supporting H3. Surprisingly, the main effect of text

Table 1
Summary of ANCOVA results from Study 1.

	Authenticity			Status		
	F	p	η2	F	p	η2
Display characters	50.985	.000	.209	28.941	.000	.130
Text flow	1.163	.282	.006	.623	.431	.003
Display characters x text flow	5.560	.019	.028	5.143	.024	.026
Age	.004	.948	.000	.276	.600	.001
Gender	.837	.361	.004	.620	.432	.003
Income	.575	.449	.003	2.241	.136	.011
Openness	12.971	.000	.063	7.498	.007	.037

flow on participants' perceptions of restaurant authenticity ($F[1, 193] = 1.163$, $p = 0.282$) and status ($F[1, 193] = 0.623$, $p = 0.431$) was insignificant. The covariate of openness to foreign food significantly influenced participants' evaluations of restaurant authenticity ($F[1, 193] = 12.971$, $p < 0.001$), and restaurant status ($F[1, 193] = 7.498$, $p < 0.01$). Participants with high levels of openness rated restaurant authenticity and status significantly higher than those with low openness. Other covariates of age, gender, and income did not influence restaurant authenticity and status.

In addition to the main effects, Table 1 also shows a two-way interaction effect between display characters and text flow on both restaurant authenticity ($F[1, 193] = 5.560$, $p < 0.05$) and status ($F[1, 193] = 5.143$, $p < 0.05$). As depicted in Fig. 2, in the vertical flow scenarios, participants rated restaurant authenticity significantly higher for the traditional than the simplified Chinese characters condition ($F[1, 193] = 48.959$, $p < 0.001$, $M_{\text{traditional Chinese – vertical}} = 5.31 > M_{\text{simplified Chinese – vertical}} = 4.09$), supporting H2a. Furthermore, in the horizontal flow scenario, participants in the traditional Chinese characters condition perceived higher levels of restaurant authenticity than those in the simplified Chinese characters condition ($F[1, 193] = 10.812$, $p < 0.01$, $M_{\text{traditional Chinese – horizontal}} = 4.87 > M_{\text{simplified Chinese – horizontal}} = 4.25$), accepting H2b.

As shown in Fig. 3, in the vertical flow scenarios, participants rated restaurant status significantly higher for the traditional Chinese characters condition than for the simplified Chinese characters condition ($M_{\text{traditional Chinese – vertical}} = 4.67 > M_{\text{simplified Chinese – vertical}} = 3.42$; $F[1, 193] = 31.713$, $p < 0.001$), supporting H4a. In the horizontal text flow scenarios, participants in the traditional Chinese characters condition perceived higher levels of restaurant status than those in the simplified Chinese characters condition ($M_{\text{traditional Chinese – horizontal}} = 4.17 > M_{\text{simplified Chinese – horizontal}} = 3.42$; $F[1, 193] = 4.595$, $p < 0.05$), confirming H4b.

The results show that restaurant authenticity directly influences restaurant status ($\beta = 0.575$, 95% CI = 0.416 to 0.734, $p < 0.001$) and purchase intentions ($\beta = 0.490$, 95% CI = 0.339 to 0.641, $p < 0.001$), supporting H5 and H6. Restaurant status directly affects visiting
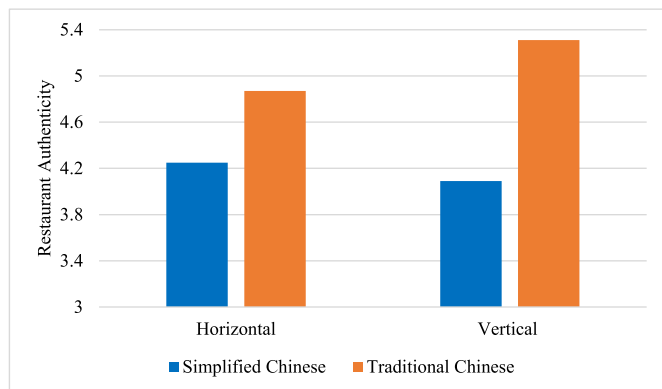
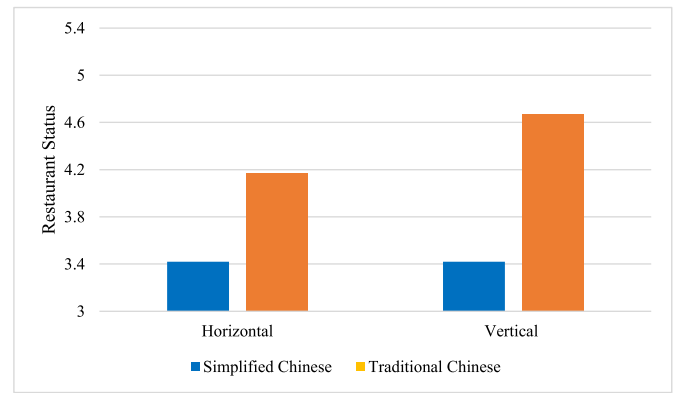**Fig. 3.** Interaction effect between display characters and text flow on restaurant status.

intentions ($\beta = 0.379$, 95% CI = 0.260 to 0.498, $p < 0.001$), confirming H7. In addition, text flow moderates the direct effect of display characters on authenticity ($\beta = -0.600$, 95% CI = -1.102 to -0.100, $p < 0.05$), and the direct effect of display characters on restaurant status ($\beta = -0.571$, 95% CI = -1.141 to -0.001, $p < 0.05$). Openness influences consumers' perceptions of restaurant authenticity ($\beta = 0.206$, 95% CI = 0.094 to 0.319, $p < 0.001$) and visiting intentions ($\beta = 0.117$, 95% CI = 0.008 to 0.226, $p < 0.05$). Income ($\beta = 0.125$, 95% CI = 0.009 to 0.241, $p < 0.05$) influences restaurant status.

4.2. Results of study 2: Taiwanese cuisine

The experiment's manipulations were effective. Subjects in the traditional Chinese characters group agreed more on 'in the scenario, the sign is written in traditional Chinese characters' than those in the simplified Chinese characters group ($M_{\text{traditional Chinese}} = 6.47 > M_{\text{simplified Chinese}} = 1.51$; $t[178] = -36.846$, $p < 0.001$). Furthermore, subjects in the horizontal text condition agreed more on 'in the scenario, the sign is displayed in horizontal flow' than those in the vertical text condition ($M_{\text{horizontal}} = 6.70 > M_{\text{vertical}} = 1.45$; $t[178] = 44.891$, $p < 0.001$). ($M_{\text{horizontal}} = 5.76 > M_{\text{vertical}} = 2.65$, $t[201] = 13.532$, $p < 0.001$).

As reported in Table 2, the main effect of display characters ($F[1, 172] = 7.861$, $p < 0.01$) on restaurant authenticity was significant. Participants in the traditional Chinese characters group ($M_{\text{traditional Chinese character}} = 5.21$) rated restaurant authenticity significantly higher than those in the simplified Chinese characters group ($M_{\text{simplified Chinese character}} = 4.77$), supporting H1. The main effect of display characters ($F[1, 172] = 4.439$, $p < 0.05$) on restaurant status was also significant. Subjects in the traditional Chinese characters condition ($M_{\text{traditional Chinese character}} = 3.96$) rated restaurant status statistically higher than those in the simplified Chinese characters condition ($M_{\text{simplified Chinese character}} = 3.56$), supporting H3.

Surprisingly, the main effect of text flow on participants' perceptions of restaurant authenticity ($F[1, 172] = 1.725$, $p = 0.191$) and status ($F[1, 172] = 1.591$, $p = 0.209$) was insignificant. Openness affected both restaurant authenticity ($F[1, 172] = 23.456$, $p < 0.001$) and restaurant

Fig. 2. Interaction effect between display characters and text flow on restaurant authenticity.

Table 2
Summary of ANCOVA results from Study 2.

	Authenticity			Status		
	F	p	η2	F	p	η2
Display characters	7.861	.006	.044	4.439	.037	.025
Text flow	1.725	.191	.010	1.591	.209	.009
Display characters x text flow	.126	.723	.001	.711	.400	.004
Age	3.214	.075	.018	5.929	.016	.033
Gender	.238	.626	.001	.000	.991	.000
Income	.109	.742	.001	1.567	.212	.009
Openness	23.456	.000	.120	18.401	.000	.097

status (F [1, 172] $=$ 18.401, $p <$ 0.001). Age influenced restaurant status (F [1, 172] $=$ 5.929, $p <$ 0.05). However, there was no significant two-way interaction effect between display characters and text flow on restaurant authenticity (F [1, 172] $=$ 0.126, $p =$ 0.723) or restaurant status (F [1, 172] $=$ 0.711, $p =$ 0.400), rejecting H2a, H2b, H4a and H4b.

The results show that restaurant authenticity directly influences restaurant status ($\beta =$ 0.629, 95% CI $=$ 0.473 to 0.785, $p <$ 0.001) and purchase intentions ($\beta =$ 0.466, 95% CI $=$ 0.337 to 0.594, $p <$ 0.001), supporting H5 and H6. Restaurant status directly affects purchase intentions ($\beta =$ 0.261, 95% CI $=$ 0.155 to 0.367, $p <$ 0.001), confirming H7. However, text flow moderates neither the direct effect of display characters on authenticity ($\beta = -0.112$, 95% CI $= -0.731$ to 0.508, $p =$ 0.723), nor the direct effect of display characters on restaurant status ($\beta = -0.251$, 95% CI $= -0.894$ to 0.393, $p =$ 0.443). For all of the covariates, only openness positively affects consumers' perceptions of restaurant authenticity ($\beta =$ 0.311, 95% CI $=$ 0.184 to 0.438, $p <$ 0.001).

We conducted further data analysis using display characters as an independent variable, restaurant authenticity and restaurant status as mediators, and age, gender, income and openness as covariates as before, but with willingness to pay rather than purchase intentions as the dependent variable. These results also reveal a positive effect of restaurant authenticity on restaurant status ($\beta =$ 0.629, 95% CI $=$ 0.473 to 0.785, $p <$ 0.001) and consumers' willingness to pay ($\beta =$ 0.313, 95% CI $=$ 0.014 to 0.611, $p <$ 0.05), supporting H5 and H8. Restaurant status also influenced consumers' willingness to pay ($\beta =$ 0.298, 95% CI $=$ 0.052 to 0.544, $p <$ 0.05), supporting H9. In addition, we find that text flow does not moderate the direct effect of display characters on authenticity ($\beta = -0.112$, 95% CI $= -0.731$ to 0.508, $p =$ 0.723), nor the direct effect of display characters on restaurant status ($\beta = -0.251$, 95% CI $= -0.894$ to 0.393, $p =$ 0.443). Openness positively affects consumers' perceptions of restaurant authenticity ($\beta =$ 0.311, 95% CI $=$ 0.184 to 0.438, $p <$ 0.001). Income influences consumers' willingness to pay ($\beta =$ 0.266, 95% CI $=$ 0.030 to 0.502, $p <$ 0.05). Table 3 presents the results of the hypothesis tests.

Table 3
Summary of results.

Hypothesis	Study 1 result	Study 2 result
H1: Display characters positively influence consumers' perceptions of restaurant authenticity.	Accept	Accept
H2a: Adopting traditional Chinese characters in the vertical flow condition will generate higher restaurant authenticity than adopting simplified Chinese characters in the vertical flow condition.	Accept	Reject
H2b: Adopting traditional Chinese characters in the horizontal flow condition will generate higher restaurant authenticity than adopting simplified Chinese characters in the horizontal flow condition.	Accept	Reject
H3: Display characters positively influence consumers' perceptions of restaurant status.	Accept	Accept
H4a: Adopting traditional Chinese characters in the vertical flow condition will generate higher restaurant status than adopting simplified Chinese characters in the vertical flow condition.	Accept	Reject
H4b: Adopting traditional Chinese characters in the horizontal flow condition will generate higher restaurant status than adopting simplified Chinese characters in the horizontal flow condition.	Accept	Reject
H5: Restaurant authenticity positively affects restaurant status.	Accept	Accept
H6: Restaurant authenticity positively affects visiting intentions.	Accept	Accept
H7: Restaurant status positively affects visiting intentions.	Accept	Accept
H8: Restaurant authenticity positively affects willingness to pay.	Not tested	Accept
H9: Restaurant status positively affects willingness to pay.	Not tested	Accept

5. Discussion

Our two studies using Japanese and Taiwanese restaurants in Mainland China produced some similar results. For example, both studies confirm that display characters affect restaurant authenticity and status. More specifically, traditional Chinese characters contribute significantly to higher restaurant authenticity and status. The main effects of text flow on participants' perceptions of restaurant authenticity and status were insignificant in both studies 1 and 2. However, the interaction effects of display characters and text flow on both restaurant authenticity and restaurant status are confirmed only by Study 1 with a Japanese restaurant. Study 2 with a Taiwanese restaurant does not support these interaction effects. In addition, both studies confirm positive paths between authenticity and status, authenticity and visiting intentions, and status and visiting intentions. The findings from the two studies have crucial theoretical and practical implications.

5.1. Theoretical implications

This study makes four key theoretical contributions. First, although the theory of linguistic landscape has been broadly cited in the retail business service, relating to the linguistic identity in multilingual organizations (Bordia and Bordia, 2015), names of neighborhood shops (i. e., laundry, hairdressing, banking, health care) (Shang and Guo, 2017), and commercial signage (Buckingham, 2019), most studies focused on multiple foreign languages. In addition, most linguistic landscape studies are descriptive in nature and examine multiple languages in a specific area, focusing on holistic representations of diverse languages (e.g., Rasinger, 2014). However, no previous studies have identified the variations in writing within the same language, and how such differences may influence consumers' perceptions and consumption intentions. Thus, our study fills this gap by applying it to a restaurant context to understand the overall landscape of languages used in a particular region, and how such representations may influence people's perceptions, attitudes, feelings, and consumption decisions. This study extends the linguistic landscape literature by focusing on how using simplified or traditional Chinese characters on restaurant signs may influence customers' perceptions and behavioral intentions. Furthermore, this study contributes to a better understanding of how business could apply linguistic landscape knowledge to influence restaurant customers' perception, such as authenticity and status, as well as their consumption behaviors.

Second, the study contributes to the food authenticity literature by investigating how design features of restaurants' outdoor signage may influence customers' perceptions of ethnic restaurants' authenticity. Existing studies of factors contributing to authenticity focus mainly on food-related dimensions, or general atmospherics (Al-Kilani and El Hedhli, 2021; Youn and Kim, 2017). Atmospheric has been widely used in retail and service environment (Baker et al., 2002; Hoffman and Turley, 2002), such as the visual design and ambient cues (Li et al., 2022; Shen et al., 2016), and general exterior (e.g., storefront, entrances, and surrounding area) (Hoffman and Turley, 2002; Turley and Milliman, 2000), whereas few studies have addressed their impacts on brands' authenticity and status, and even fewer examined the influence of outdoor signs (i.e., display characters and text flow) in ethnic restaurants. This study fills a gap in the literature by confirming the importance of outdoor signs in shaping customers' perceptions of authenticity. In particular, we find that traditional Chinese characters displayed on outdoor signs convey greater authenticity than signs using simplified characters. This applies to both Japanese and Taiwanese restaurants in the Chinese Mainland. In addition, participants rated Japanese restaurant authenticity and status significantly higher for the traditional Chinese characters placed in the vertical flow condition than for the simplified Chinese characters organised in the vertical flow condition or the traditional Chinese characters placed in the horizontal flow condition. However, there is no significant interaction effect between

horizontal or vertical display and traditional or simplified Chinese characters for Taiwanese restaurants.

Third, languages used in marketing materials have been widely discussed in marketing and service contexts, which focus on identifying the critical role of the service provider's verbal communication on customers' service encounter evaluations (Holmqvist et al., 2017; Kraak and Holmqvist, 2017; Zolfagharian et al., 2018). For instance, Baker and Kim (2018) analysed how service employees' language use influences the authenticity of service contexts. However, how display characters and text flow on restaurants' outdoor signs affect customers' perceptions (authenticity and status) and evaluations of ethnic restaurants are limited. Thus, our findings on language use in service contexts contribute new knowledge to the literature.

Lastly, our findings suggest that using traditional Chinese characters may enhance the perceived status of both Taiwanese and Japanese restaurants in Mainland China. However, text flow does not affect either restaurant authenticity or status. This could be explained by Xi et al. (2021) that text flow is not directly influencing consumers' reactions. In fact, text flow works with other independent variables to jointly influence consumers' reactions. For both types of restaurants, whether the text flow is vertical or horizontal, the effect of using traditional Chinese characters on restaurants' status is stronger than using simplified Chinese characters. Findings of Study 1 suggested that when Japanese restaurant signs show full congruity of signage cues with the theme of the restaurant, it generates higher restaurant authenticity and status than semi congruity conditions. In addition, semi congruity of signage cues and the theme of the ethnic restaurant generates higher level of restaurant authenticity and status than full incongruity conditions. However, the interaction effect between display characters and text flow is not significant in Taiwanese restaurants. White and Dahl (2007) indicated that consumers tend to categorize brands as ingroups and outgroups, and brands considered as ingroup members often share same culture, value, and language with consumers (Nayeem, 2012; Hofstede, 2001). Results of the current study can be interpreted that Taiwanese restaurants are considered as part of the ingroup of the brands by Chinese consumers, whereas Japanese restaurants are not. Sharing a common culture and language, consumers did not perceive the interaction between display characters and text flow could influence Taiwanese restaurants authenticity and status. This finding has important implications for restaurant operators, and we suggest they should keep culture's influence on consumers' perception in mind and apply it to the design and operation of restaurants. Finally, our study is consistent with previous studies (e.g., Carsana and Jolibert, 2018; Kovács et al., 2014; Youn and Kim, 2017) supporting the positive relationship between authenticity, purchase intention and willingness to pay.

5.2. Practical implications

From a practical perspective, this study offers unique insights on how ethnic restaurants could use linguistic landscapes features in designing outdoor signages. Although previous research has noted the positive effects of physical environment and language labelling of menu on ethnic restaurants authenticity (Choi et al., 2018), our study suggested that linguistic landscapes in restaurant signs (i.e., display characters and text flow) could play a critical role in linking restaurant authenticity, restaurant status, visiting intentions and willingness to pay. We

recommend Taiwanese and Japanese restaurants pay special attention when choosing what characters to be displayed in their signs, as well as the flow of characters to deliver symbolic meanings to customers, since signboard design elements influence customers' perceptions and consumption intention. Focusing on the signboard design elements may help ethnic restaurants to preserve their authenticity and status against the rapid tide of modernization and globalization.

The results indicate that text flow plays a moderating role in the relationships between display characters and restaurant authenticity, as well as between display character and status for Japanese restaurants. However, the moderating effects were not significant for Taiwanese restaurants. Our findings suggest that consumers' cultural background shapes their perceptions, and restaurant operators should bear that in mind when promoting restaurants in different cultural contexts. In our case, when the name of a Japanese restaurant is displayed vertically in traditional Chinese characters, it leads to higher restaurant authenticity and status. We thus recommend Japanese restaurants to apply this finding in designing restaurant signs to take advantage of the interaction effect between display characters and text flow to enhance the authenticity and status of restaurants.

Furthermore, this study raises awareness of the effect of restaurants' outdoor signage on consumers' perceptions and behavioral intentions from the perspective of linguistic landscape. As a symbol of traditional culture, traditional Chinese characters contribute to the commercialization of linguistic landscape in China (Lu et al., 2020). Linguistic landscape and its symbolic meaning play an important role in consumers perception and choices in restaurant contexts (Lu et al., 2020). Our research finding not only enhances the understanding of linguistic landscape, more importantly it serves as a practical guide for ethnic restaurants' outdoor signage design. Managers should use outdoor signage as an effective marketing tool, which helps with the branding process. This not only applies in Japanese and Taiwanese restaurants, but also in other international/ethnic restaurants targeting to expand in the market of China.

5.3. Limitations and future research

This study makes an initial attempt to determine the impacts of display characters and text flow on perceptions of ethnic restaurants' status and authenticity. First, only two ethnic cuisines were included in the study. Certain Chinese consumers may refuse to pay in Taiwanese or Japanese restaurants due to animosity. Future studies might extend the findings by including a wider variety of ethnic cuisines to provide a richer picture. A second limitation is that this study investigated only Chinese consumers' perceptions. Given the unique cultural features of this population, the findings may not be applicable to other cultures. This opens avenues for further research on consumers' perceptions of ethnic cuisines in other nations. Third, more than half participants were relatively young (21–30), which may limit the generalizability of findings to older demographic groups of consumers. Therefore, we encourage future studies to examine such relationships in more diverse populations. Finally, the study explored the influence only of outdoor signboards' text flow and display characters on consumers' perceptions. Future research might examine other components of restaurant design that may also play significant roles.

Appendix 1. Signage scenarios

Study 1.

Imagine you are visiting a domestic tourist destination. During the trip, you would like to have a meal in a restaurant. You find a restaurant, and the restaurant name displayed on the outdoor signage is as shown below.
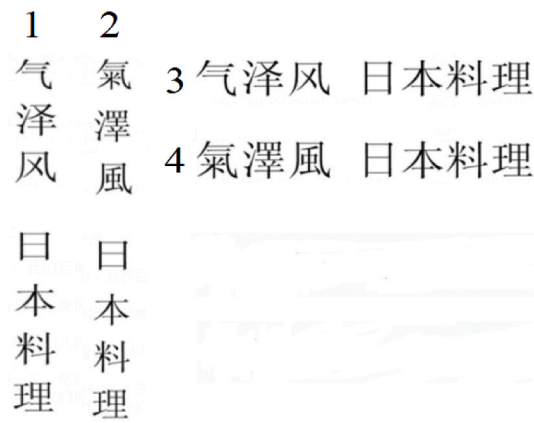
Note: Condition 1 is simplified Chinese written vertically, condition 2 is traditional Chinese written vertically, condition 3 is simplified Chinese written horizontally, and condition 4 is traditional Chinese written horizontally.

Study 2.

Imagine you are visiting a domestic tourist destination. During the trip, you would like to have a meal in a restaurant. You find a restaurant, and the restaurant name displayed on the outdoor signage is as shown below.
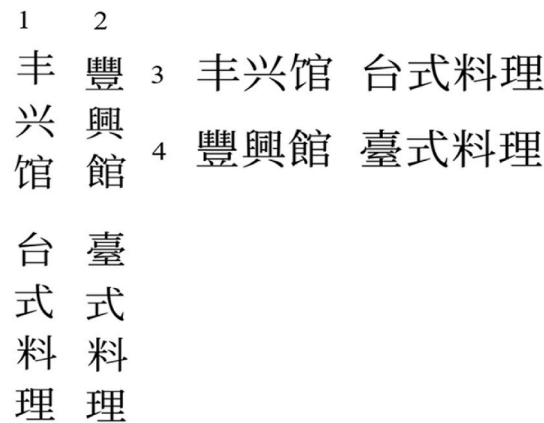
Note: Condition 1 is simplified Chinese written vertically, condition 2 is traditional Chinese written vertically, condition 3 is simplified Chinese written horizontally, and condition 4 is traditional Chinese written horizontally.

Appendix 2
Measurements and Reliability.

Constructs and Measurement Items	Study 1 – Japanese restaurant		Study 2 – Taiwanese restaurant	
	Factor loading	Cronbach's alpha	Factor loading	Cronbach's alpha
Restaurant authenticity		*.817*		*.851*
This is an authentic Japanese/Taiwanese restaurant	.690		.778	
This restaurant looks very Japanese/Taiwanese to me	.753		.659	
This restaurant makes me feel connected with Japanese/Taiwanese culture	.670		.729	
I expect to experience and/or learn about the Japanese/Taiwanese lifestyle in this restaurant	.701		.735	
If I were to eat at this restaurant, I would be likely to be served traditional authentic Japanese/Taiwanese food	.698		.624	
Restaurant status		*.855*		*.886*
The restaurant seems upscale.	.769		.638	
I feel this restaurant has more status relative to other restaurants.	.646		.899	
This restaurant has a high degree of status.	.674		.876	
This restaurant is special.	.766		.817	
Purchase intention		*.865*		*.799*
I would like to dine in this restaurant	.744		.776	
I will choose to go to this restaurant rather than others	.753		.656	
This restaurant would be my first choice compared with other Japanese/Taiwanese restaurants	.785		.686	

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