THE IMPACT OF SENSORY MARKETING ON PERCEIVED QUALITY AND SATISFACTION OF YOUNG CUSTOMERS IN VIETNAM: A CASE OF MCDONALD'S

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Abstract

The study was conducted to examine the impact of sensory marketing on the perceived quality and satisfaction of young customers in Vietnam regarding services at McDonald's. After analyzing the structural equation model (SEM) with a sample size of 251, the results showed that all five sensory marketing elements, including auditory, visual, tactile, olfactory, and gustatory, had statistically significant positive impacts on the perceived quality and satisfaction of young customers in Vietnam regarding McDonald's services. Additionally, the study also identified the influence of gender and regional factors on the perceived service quality of customers. Based on these findings, several recommendations were proposed for McDonald's to enhance the perceived quality and satisfaction of young customers about the services.

Keywords: *sensory marketing, perceived quality, young customers, McDonald's, satisfaction.*
JEL classification:M, M2, M3, M31.

ẢNH HƯỞNG CỦA MARKETING GIÁC QUAN ĐẾN CHẤT LƯỢNG CẢM NHẬN VÀ SỰ HÀI LÒNG CỦA KHÁCH HÀNG TRẺ TẠI VIỆT NAM: TRƯỜNG HỢP CỦA MCDONALD'S

Tóm tắt

Nghiên cứu được thực hiện nhằm xem xét ảnh hưởng của marketing giác quan đến chất lượng cảm nhận và sự hài lòng của khách hàng trẻ tại Việt Nam đối với dịch vụ ăn uống tại McDonald's. Sau khi phân tích mô hình cấu trúc tuyến tính SEM với cỡ mẫu 251, kết quả cho thấy cả năm thành tố của marketing giác quan bao gồm: thị giác, thính giác, vị giác, xúc giác và khứu giác đều có tác động tích cực và có ý nghĩa thống kê đến chất lượng cảm nhận và sự hài lòng của khách hàng trẻ tại Việt Nam đối với dịch vụ ăn uống của McDonald's. Ngoài ra, nghiên cứu cũng phát hiện ảnh hưởng của giới tính và yếu tố vùng miền đến chất lượng dịch vụ cảm nhận của khách hàng. Từ những phát hiện trên, một số đề xuất được đưa ra cho McDonald's nhằm nâng cao chất lượng cảm nhận và sự hài lòng của khách hàng trẻ đối với dịch vụ ăn uống.

Từ khóa: *marketing giác quan, chất lượng cảm nhận, khách hàng trẻ, McDonald's, sự hài lòng.*

1. Introduction

In a survey of 2280 participating entities by IPOS (2022), 53.8% of businesses expressed concerns about the tightening of customer spending in the context of the economic crisis, leading to a decrease in revenue, while 48.7% believed that customers are gradually changing their consumption habits post Covid-19. According to iPOS (2022), 26.9% of businesses indicated that customers are increasingly expecting product quality, and 23.6% stated that customers are becoming more concerned about food safety and hygiene. When compared with data from consumer surveys, the concerns of businesses appear to be quite accurate. Out of a total of 3,940 survey participants, the most important criterion for selecting outside dining services was delicious food, with a ratio of 88.2%. This was followed by factors related to price at 72.9%, cleanliness of the establishment at 62.2%, and the ambiance of the venue at 53.6% (iPOS, 2022). Notably, attentive and professional service ranked fifth among the factors that diners consider when making choices.

Therefore, sensory factors play an important role in the selection of restaurants and eateries by customers in Vietnam, including taste, food quality, appealing ambiance, cleanliness, and more. Several experimental studies have also indicated that the senses are directly related to consumer attitudes towards products/services and their consumption behavior (Randhir et al., 2016;

Satti et al., 2022). Thus, businesses in the food service industry need to focus on new marketing approaches that leverage sensory experiences to enhance customer perception and satisfaction. This approach is known as sensory marketing.

Sensory marketing is considered a new marketing strategy, differing from traditional marketing models, as it integrates the five human senses into marketing efforts to create awareness, quality perception, and customer satisfaction (Satti et al., 2022). The purpose of sensory marketing is to communicate messages to the customer's brain, stimulating the senses, creating curiosity, and ultimately establishing an emotional connection between the customer and the brand (Costa et al., 2012).

However, the number of studies on the influence of sensory marketing on the perceived quality and satisfaction of customers with dining services in Vietnam is still quite limited. Additionally, previous studies have not considered the impact of regional and gender factors on the relationship between sensory marketing and customer perception. Therefore, further research on this topic is necessary, including the consideration of demographic factors such as gender and region, to provide businesses with additional understanding when applying sensory marketing strategies in the Vietnamese market.

2. Theoretical background, literature review and hypothesis development

2.1. Theoretical background

The SERVQUAL model for assessing service quality perception, developed by Parasuraman et al. (1985), is considered one of the most popular models for evaluating service quality. SERVQUAL comprises 10 dimensions: (1) Reliability, (2) Responsiveness, (3) Assurance, (4) Tangibles, (5) Empathy, (6) Courtesy, (7) Communication, (8) Credibility, (9) Security, and (10) Understanding and knowing the customer. These factors are evaluated by consumers from the ideal quality to the level of quality that is completely unacceptable. Specifically, if the expected service level exceeds the actual perceived service level, the perceived quality will be lower; if the expected service matches the actual perceived service, the perceived quality will be satisfactory; and if the expected service level is lower than the perceived service level, the perceived quality will be higher and considered ideal (Parasuraman et al., 1985, p. 48).

However, Parasuraman et al. (1988) revised the scale to include 5 factors: (1) Reliability, (2) Responsiveness, (3) Assurance, (4) Empathy, and (5) Tangibles.

SERVQUAL scale consists of 22 pairs of questions, divided into two parts, each with 22 questions, requiring respondents to evaluate based on a 7-point Likert scale. Service quality is determined as follows:

Service Quality = Perceived Quality - Expected Quality

The Expectation-Confirmation Theory was developed by Oliver (1980) and is used to study customer satisfaction with a supplier's products/services. According to this theory, there are two processes: Expectation and Confirmation. Both processes independently affect consumer satisfaction. The theory is interpreted as follows:

(1) Customers form expectations about the quality of the service/product that the provider will deliver to them in the future (before making a purchase decision).

(2) Consumption of the product/service then builds trust for the customer in the actual effectiveness/benefit of the product/service they are using.

(3) Customer satisfaction is the result of the customer comparing their pre-purchase expectations with the actual effectiveness or benefits they receive after using the service.

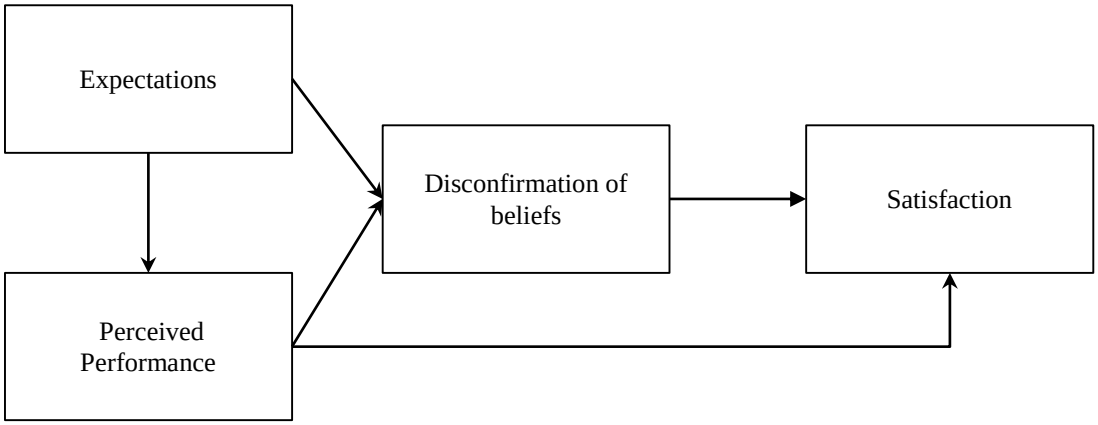


Figure 1: Expectation – Confirmation Theory

Source: Oliver (1980)

The Expectation-Confirmation Theory (ECT) acknowledges that expectations along with the outcomes of perception will lead to customer satisfaction. This process occurs through the positive or negative confirmation between expectations and actual performance. If a product exceeds expectations (positive confirmation), it will lead to satisfaction. If a product fails to meet expectations (negative confirmation), consumers may not be satisfied (Oliver, 1980; Spreng & Mackoy, 1996).

2.2. Literature review, hypothesis development and research model

2.2.1. Literature review

The senses are considered to be one of the core factors directly influencing the customer experience at restaurants (Kotler, 1974). Numerous experimental studies have been conducted to investigate the relationship between sensory marketing, perceived quality, and customer satisfaction. Most studies indicate that sensory marketing has a positive impact on the perceived value, thereby promoting customer satisfaction.

Randhir et al. (2016) analyzed the impact of sensory marketing activities on consumers, specifically related to KFC. The results showed that different senses have an impact on consumer behavior, especially for KFC consumers. Consumers perceived that if the store used music, it would stimulate their taste. Similarly, Mirzaei & Hosseini (2017) investigated the impact of sensory marketing on customer satisfaction, trust, and loyalty towards sports brands (Adidas, Nike, Puma, Reebok, Majid, and Daei) with a sample size of 385 customers in Tehran. The results indicated that the brand experience significantly and positively impacts customer satisfaction, trust, and loyalty. Additionally, satisfaction significantly affects trust and loyalty, and trust significantly affects customer loyalty. The same results are presented in research of Ifeanyichukwu and Peter (2018) when they examined the relationship between sensory signals and customer endorsement using a multiple regression model, specifically, sensory marketing significantly affects customer retention, highlighting the significant and substantial impact of sensory marketing on the success of a company in this highly competitive market.

Silaban et al. (2023) studied the application of sensory marketing methods to enhance customer satisfaction in traditional restaurants. Data was collected from 525 Indonesian individuals dining at traditional restaurants and analyzed using structural equation modeling and qualitative comparative analysis (QCA) 3.0. The results indicated that the sense of smell and touch are important factors in customer satisfaction, while sight, taste, and hearing have no significant impact. According to the QCA qualitative analysis, two configurations (taste and smell) are associated with high satisfaction, while the other two (touch, sight, hearing) are related to low satisfaction.

Hoang & Tučková (2021) investigated the influence of sensory factors related to street food on the return behavior of international tourists in Ho Chi Minh City. Through the PLS-SEM model analyzing data from 250 international tourists, the research results showed that all five senses have a positive impact on the satisfaction of international tourists regarding street food, and satisfaction with street food positively influences the return behavior of tourists to Ho Chi Minh City. The impact of sensory marketing factors on street food satisfaction, in descending order, is as follows: (1) The smell of street food; (2) Noise from food and drink vendors, street vendors; (3) Taste of street food; (4) Street food scene; (5) Interaction of tourists with street vendors and equipment.

In Vietnam, few studies focus on the relationship between sensory marketing and perceived quality and satisfaction in the food & beverage industry. Pham Thi Huyen et al. (2022) assessed the influence of sensory stimuli on the perceived service quality and satisfaction of people visiting public hospitals. Data was collected from 619 Vietnamese people from 52 provinces and cities. The results showed that sensory stimuli including touch, sight, smell, and taste significantly influence the perceived quality and satisfaction of individuals when experiencing medical services. Nguyen Hong Quan et al. (2022) studied the influence of the five senses on the perception of the quality of customers using food services at over 30 dining establishments in Vietnam with 446 samples. The test results showed that all sensory factors, including sight, smell, taste, hearing, and touch, impact customer perception quality. Additionally, age and gender also contribute to differences in customer perception quality.

Overall, the number of studies on the impact of sensory marketing on the perceived quality and satisfaction of customers regarding dining services in Vietnam is quite limited. There has been no research focusing on the typical case of a fast food brand like McDonald's. Moreover, previous studies have not simultaneously considered the impact of sensory marketing on the perceived quality and satisfaction of customers, nor have they focused on the young customer segment. Therefore, it is necessary to have more comprehensive studies examining the overall impact of sensory marketing on the perceived quality and satisfaction of young customers regarding dining services at McDonald's.

2.2.2.Hypothesis development and research model

2.2.2.1.Visual

Customers are most influenced by visual perception, as the formation of the product and brand image is created by the first impressions received through sight (Ebster & Garaus, 2011). According to Lindstrom (2005), visual perception is the most effective sense in receiving marketing messages, as it alters customers' views without impacting their logical thinking. Elements such as interior and exterior design, colors, lighting, signage, and other visual merchandising methods in restaurants significantly impact customers' perception quality (Krishna, 2012). If customers are positively stimulated visually, they tend to perceive the service quality more favorably (Baker et al., 2002). Therefore, the team proposes the hypothesis:

H1a: Visual perception has a positive influence on the perceived quality of young customers regarding dining services at McDonald's.

Torabi et al. (2011) highlighted a positive relationship between sensory experience and customer satisfaction. Hoang & Tučková (2021) asserted that sensory perception significantly impacts tourists' satisfaction with street food. The study by Woo-Hyuk Kim et al. (2020) demonstrated a positive relationship between sensory marketing and customer satisfaction. According to Niki et al. (2021), there exists a positive and significant relationship between various aspects of sensory marketing and customer satisfaction. Therefore, the authors propose the hypothesis:

H1b: Visual perception has a positive influence on the satisfaction of young customers regarding dining services at McDonald's.

2.2.2.2. Auditory

Sound has a long-term impact on memory (Pham Thi Huyen & Mai Thi Hai Linh, 2021). A large amount of information that humans receive daily is through sound (Hultén et al., 2009). Therefore, auditory perception plays an important role in human communication and learning processes (Nguyen Hong Quan, 2021). From a marketing perspective, Lindstrom (2005) and Alpert et al. (2005) argue that sound significantly influences satisfaction and purchasing behavior, and is effectively used to communicate with customers through auditory perception. In fact, numerous brands have used music as a core element in their marketing strategies due to its communicative ability with customers (Meyers-Levy et al., 2009). Each product or service has its own distinctive sound (Krishna, 2012), which creates brand recognition in the target market (Genuario, 2007). Klink (2000) also affirmed the effectiveness of brand communication through sound. An experimental study indicated that excessively loud sound tends to shorten the time customers spend experiencing services in a supermarket (Smith & Curnow, 1966). Conversely, bars playing loud music tend to sell more drinks (Guéguen et al., 2008). Singh & Tuckova (2021) pointed out that the sound in dining establishments impacts customer satisfaction and the intention to return. Argo et al. (2010) discovered that sound creates a pleasant feeling for customers and increases customer satisfaction. Therefore, the authors propose the hypotheses:

H2a: Auditory perception has a positive influence on the perceived quality of young customers regarding dining services at McDonald's.

H2b: Auditory perception has a positive influence on the satisfaction of young customers regarding dining services at McDonald's.

2.2.2.3. Olfactory

Olfactory perception directly influences human memory, and thus cannot be overlooked in sensory marketing activities (Lindstrom, 2006). Olfaction is believed to have a close relationship with emotions and significantly affect human behavior (Mahmoudi et al., 2012). This can be linked to long-term or short-term marketing strategies to help customers better remember positive images when associated with specific scents (Hultén et al., 2009). Vlahos (2007) also affirmed that olfaction-based marketing helps the brand image of a product become more deeply rooted in the subconscious of consumers through scent association. Stimulating olfactory perception plays a particularly important role in enhancing the quality of perception and satisfaction at restaurants and hotels (Claudia & Victor, 2017). Therefore, the authors propose the hypotheses:

H3a: Olfactory perception has a positive influence on the perceived quality of young customers regarding dining services at McDonald's.

H3b: Olfactory perception has a positive influence on the satisfaction of young customers regarding dining services at McDonald's.

2.2.2.4. Tactile

Siegel (1970) suggests that tactile perception is intermediary for all sensory perceptions, including visual perception. In sensory marketing, visual perception influences customers' perception, judgment, and behavior (Spence et al., 2014). Barclay & Ogden (2011) argue that customers can evaluate a product's value through touch. Furthermore, Peck & Wiggens (2006) and Hultén (2013) suggest that physically touching a product increases customers' positivity and trust in its quality. Nguyen Hong Quan (2021) states that tactile perception positively affects the quality of customer experience and satisfaction with dining services at the point of sale. Hanaysha (2016) emphasizes that all sensory marketing factors positively impact customer satisfaction in fast-

food restaurant chains. The arrangement and layout in restaurants can stimulate tactile perception, thereby influencing customer experience and their service evaluation (Aitamer & Zhou, 2011). Therefore, the authors propose the hypothesis:

H4a: Tactile perception positively impacts the perceived quality of young customers regarding dining services at McDonald's.

H4b: Tactile perception positively impacts the satisfaction of young customers regarding dining services at McDonald's.

2.2.2.5. Gustatory

Gustatory enables humans to differentiate between five different tastes, including sweet, salty, sour, bitter, and umami (Ikeda, 2002). In the restaurant industry, everything people consume directly affects their health, so taste perception plays a significant role (Ansari & Keshavarz, 2016). For the food and beverage service industry, taste perception creates a competitive advantage because it directly influences customer perception and, therefore, satisfaction. According to Rodriguez & Brito (2011), when using food services, customers prefer tasting food over other communication activities. Taste also helps businesses understand customer preferences. Soars (2009) asserts a connection between taste perception and customer loyalty. Thus, the authors present the hypothesis:

H5a: Taste perception positively impacts the perceived quality of young customers regarding dining services at McDonald's.

H5b: Taste perception positively impacts the satisfaction of young customers regarding dining services at McDonald's.

2.2.2.6. Perceived Service Quality and Customer Satisfaction

Parasuraman et al. (1985) suggest that perceived service quality and satisfaction have a mutually reinforcing relationship. According to Oliver (1993) and Iglesias & Guillén (2004), perceived service quality is the foundation for customer satisfaction. Kotler (2000), Hansemark & Albinson (2004), and Cronin & Taylor (1992) also agree, proposing that satisfaction stems from perceived service quality—a discrepancy between expectations and actual perception. Ryu et al. (2012) found that food quality and ambiance influence satisfaction through the mediating role of perceived service quality in the restaurant industry. Zhong & Moon (2020) indicate that food and service quality positively influence customer satisfaction at fast-food outlets.

H6: Perceived service quality positively influences customer satisfaction with McDonald's dining services.

2.2.2.7.Gender and Regional Differences Moderating the Relationship between Sensory Marketing and Perceived Service Quality

Cavazzana et al. (2018) argue that male and female customers perceive and are satisfied with dining services differently. Miller & Bruwer (2006) also note significant differences in male and female taste preferences and consumption behavior, specifically with a preference for sweet wine being only half as prevalent among men as it is among women. Regarding sensory marketing, Soars (2009) suggests that women tend to rely more on sensory perception in consumption than men. In terms of smell and hearing, women typically have a more positive perception of light music and lower volumes and tend to be more sensitive to scents than men (Soars, 2009). Therefore, women may be more susceptible to sensory marketing than men. Hence, the authors present the hypothesis:

H7: Gender moderates the relationship between sensory marketing and the perceived quality of young customers regarding McDonald's dining services.

Prescott & Bell (1995) argue that cultural differences in each region lead to variations in food and beverage choices. They also state that regional factors create different dining experiences. Prescott (1998) highlights significant differences in taste perception between Japanese and Australian individuals, leading to varying reactions to food and beverages. Comparisons between different countries indicate a relationship

between culture and sensory perception, specifically regarding specific smells and colors (Nehmé et al., 2016), coffee flavor expectations (Van Doorn et al., 2017), and color-flavor combinations in beverages (Wan et al. 2016). Therefore, the authors propose the hypothesis:

H8: Regional factors moderate the relationship between sensory marketing and the perceived quality of young customers regarding McDonald's dining services.

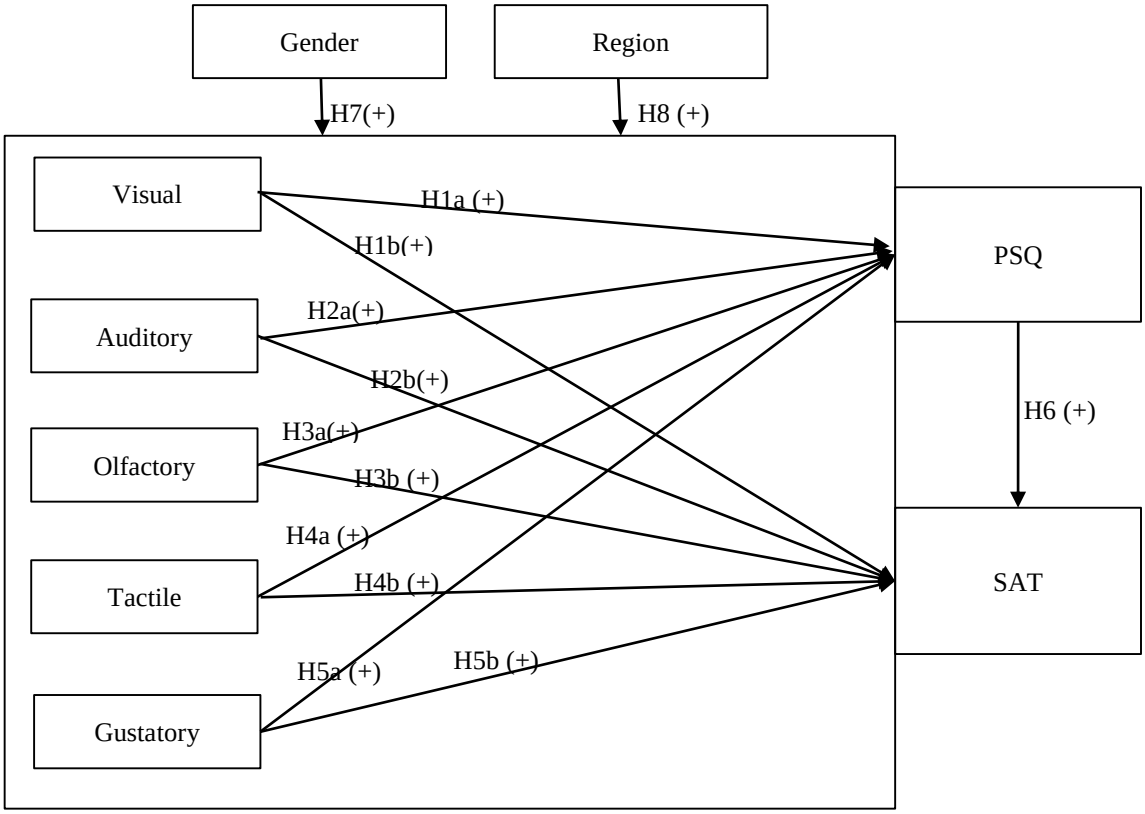


Figure 2: Research model

Source: Proposed by authors

3. Methodology

3.1. Data collection

The research used a data collection method through sociological and demographic investigation using a questionnaire. The observed variables in the questionnaire all used a 5-point Likert scale with a level of 1: Strongly Disagree and a level of 5: Strongly Agree. The investigation process was divided into two stages. Stage 1 was a preliminary investigation to collect data for preliminary quantitative research through in-person interviews and direct questioning of customers using paper questionnaires and Google Forms online with 100 distributed forms. After the preliminary assessment of the scale, stage 2 was the formal investigation with the goal of gathering 250 valid forms. The authors conducted data collection in stage 2 through two forms of investigation: (1) Direct investigation with an expected distribution of about 100 forms; (2) Online investigation through Google Forms. The authors sent survey forms to students at some universities and colleges in Hanoi and Ho Chi Minh City, as well as shared survey links on social media platforms such as Zalo, Facebook, and Instagram. Additionally, the authors also shared survey links in groups such as "Conscientious Food Reviews," "Exploring Hanoi," "What to Eat Today" on Facebook to reach a larger number of survey participants. These are all groups with 200,000 to 700,000 members from all over the country, thus enabling the collection of the expected sample size with diverse demographic characteristics. After 1.5 months of the survey

(from 01/10/2023 to 15/11/2023), the authors collected a total of 262 survey forms, including 62 direct investigations and 200 online forms. After filtering the survey forms, the authors obtained a total of 251 valid forms, thus the official sample size for the study is 251.

3.2. Data analysis

After data collection, the data will be encoded, cleaned, and analyzed for preliminary and formal quantitative research using SPSS and AMOS software. The data analysis process consists of four stages: (1) Preliminary scale assessment, (2) Official scale assessment, (3) Linear structural model analysis, and (4) Assessment of differences between categorical variables and perceived quality.

3.2.1. Preliminary Scale Assessment

The preliminary analysis process includes 2 steps: (1) assessing the reliability of the scale and (2) examining the convergence values of the factors in the overall model (unidirectional nature).

The Cronbach's Alpha coefficient (Cronbach, 1951) is used to assess the reliability of the scale and to eliminate variables with low inter-total correlation coefficients. According to Suanders et al. (2007), the Cronbach's Alpha coefficient measures the internal consistency of the factor. The Cronbach's Alpha coefficient has a value in the range of [0,1]. In theory, the higher the Cronbach's Alpha coefficient, the higher the reliability of the scale.

According to Nunnally (1978), a good scale should have a Cronbach's Alpha reliability of 0.7 or higher. Hair et al. (2009) stated that a reliable and unidirectional scale should have a Cronbach's Alpha threshold of 0.7 or higher. Meanwhile, according to Hoang Trong & Chu Nguyen Mong Ngoc (2008), if the Cronbach's Alpha coefficient is between 0.8 to 1, the scale is excellent; if it is between 0.7 to 0.8, the scale is good to use; and if it is 0.6 or higher, the scale is acceptable. In the scope of the thesis, the authors used the value of 0.7 to evaluate the reliability of the 7 scales in the model.

Next, based on Nunnally (1978) and Cristobal et al. (2007), for assessing the significant contribution to explaining the research concept, observed variables should have a Corrected Item – Total Correlation value of 0.3 or higher.

The authors then conducted an Exploratory Factor Analysis (EFA) to examine the convergence values (unidirectional nature) of the latent factors. EFA is a technique used to determine the basic structure of a set of variables by reducing a large set of original variables to a smaller set with all the basic information of the large set. The criteria used by the authors include:

1. Kaiser-Meyer-Olkin (KMO) coefficient is used to assess the suitability of factor analysis, where the KMO value must satisfy $0.5 \leq KMO \leq 1$.

2. Bartlett's test of sphericity is used to examine the correlation of observed variables within the factor. The condition for the observed variables within the factor to be correlated is that Bartlett's Test has statistical significance (sig Bartlett's Test < 0.05).

3. Eigenvalue is used to determine the number of factors; only factors with Eigenvalue > 1 are retained, otherwise, they will be eliminated.

4. Total Variance Explained ≥ 50% indicates the suitability of the EFA model.

5. Factor Loading: According to Hair et al. (2010), the minimum factor loading should be 0.3.

3.2.2. Official Scale Assessment

To evaluate the scale formally, the authors use the Confirmatory Factor Analysis (CFA) method and tests for convergence and discriminant validity.

The CFA is conducted to assess the model's fit with the collected data and the existence of the research concepts (Hair et al., 2010). The model under analysis includes all the concepts and is constructed to assess compatibility with market data, evaluate the relationships between the conceptual structures within the model, and determine if the concepts exhibit discriminant and convergent validity. The Maximum Likelihood Estimation (MLE) method is employed for parameter estimation.

Based on the research of Hu & Bentler (1999), the following criteria are considered during the CFA analysis:

- CMIN/df ≤ 3 is good, CMIN/df ≤ 5 is acceptable

- CFI ≥ 0.9 is good, CFI ≥ 0.95 is very good, CFI ≥ 0.8 is acceptable

- GFI ≥ 0.9 is good, GFI ≥ 0.95 is very good

- TLI ≥ 0.9 is good

- RMSEA ≤ 0.06 is good, RMSEA ≤ 0.08 is acceptable

- PCLOSE ≥ 0.05 is good, PCLOSE ≥ 0.01 is acceptable

It is noted that, GFI is cautioned against as it heavily depends on the number of factors, observed variables, and sample size. However, within the scope of the thesis, the authors use the threshold of 0.8 to assess GFI based on the studies of Baumgartner and Homburg (1995) and Doll et al. (1994).

According to Hair et al. (2010), the Composite Reliability (CR) should be ≥ 0.7 for scale reliability, and the Average Variance Extracted (AVE) of all observed variables should be ≥ 0.5 for convergent validity.

To assess discriminant validity, the authors considers the following conditions:

- Maximum Shared Variance (MSV) < AVE

- Square Root of AVE (SQRTAVE) > Inter-Construct Correlations in the Fornell and Larker table (Hair et al., 2010, 2016).

3.2.3. Linear Structural Model Analysis

Lastly, to assess the model's robustness, the authors use bootstrap testing with 1000 resamples.

After conducting the preliminary and formal scale assessments to ensure the appropriateness of the scales used, the authors perform a linear structural model analysis using path analysis to test the proposed research hypotheses. Structural Equation Modeling (SEM) is used to analyze multidimensional relationships between variables within a model (Haenlein & Kaplan, 2004). The authors apply standard testing with a significance level of 10%. Similar criteria to those used for Confirmatory Factor Analysis (CMIN/df ≤ 3, CFI ≥ 0.9, GFI ≥ 0.8, TLI ≥ 0.9, RMSEA ≤ 0.06, PCLOSE ≥ 0.05) are used to assess the appropriateness of the SEM.

3.2.4. Evaluation of Differences between Categorical Variables and Perceived Quality

The authors utilize Independent Sample T-test and One-way ANOVA to analyze differences in perceived quality among customer groups categorized by demographic variables with 95% confidence. The Independent Sample T-test is used to compare the equality hypothesis of the classification factor into two separate groups: (1) assessing variance differences between the two groups (Levene's test) and (2) conducting t-tests for each hypothesis. The ANOVA test is conducted to compare factors with three or more groups: (1) assessing variance differences between the groups (Levene's test), (2) testing the equality of group means (F-test), and (3) performing post-hoc testing for significant results.

4. Results and discussion

4.1. Results

4.1.1. Preliminary Scale Assessment

The authors use the Cronbach's Alpha and the Corrected Item-Total Correlation to conduct initial assessments of the scale's reliability for each factor. Following this, the authors proceed with an Exploratory Factor Analysis (EFA) to ensure the convergence of the observed variables when measuring the 7 latent variables. The suitability of the EFA model is assessed using the Kaiser-Meyer-Olkin (KMO) coefficient, the p-value of Bartlett's Test of Sphericity, total variance explained, and factor loadings.

Visual factor: The visual factor scale consists of 9 observed variables from visual1 to visual9, achieving a Cronbach's Alpha coefficient of 0.977, greater than 0.7. All inter-item correlation coefficients are above 0.3, with the lowest correlation coefficient being 0.877. The comprehensive results in Table 4.3 indicate that the necessary indices meet the initially established requirements. Specifically, the KMO coefficient is 0.962, exceeding 0.5; the p-value is 0.000, less

than 0.05; and the explained variance reaches 84.831%, surpassing 50%. Additionally, all factor loadings are above 0.5. Therefore, the visual factor scale with 9 observed variables is a unidimensional and reliable measure (Hair et al., 2009; Cristobal et al., 2007).

Auditory factor: The auditory factor scale is composed of 6 observed variables from auditory1 to auditory6. The reliability test results show that the auditory factor scale meets the necessary reliability with a Cronbach's Alpha coefficient of 0.960, exceeding 0.7, and all inter-item correlation coefficients are above 0.3, with the lowest being 0.849 for auditory3. Exploratory Factor Analysis (EFA) reveals a KMO coefficient of 0.922, greater than 0.5, with a p-value of 0.000, less than 0.05, and an explained variance exceeding 50% (specifically 83.703%). Therefore, the auditory factor scale with 6 observed variables is a unidimensional and reliable measure.

Gustatory factor: The gustatory factor is established by 6 observed variables from gustatory1 to gustatory6. The reliability test results show a Cronbach's Alpha coefficient of 0.960, greater than 0.7, and all inter-item correlation coefficients are above 0.3, with the lowest being 0.852. The results of the exploratory factor analysis (EFA) show a KMO coefficient of 0.936, exceeding 0.5, a p-value from Bartlett's test less than 0.05, and an explained variance above 50% (specifically 88.766%). Therefore, the gustatory factor scale with 6 observed variables is a unidimensional and reliable measure.

Olfactory factor: The olfactory factor scale consists of 6 observed variables from olfactory1 to olfactory6. The reliability test results show a Cronbach's Alpha coefficient of 0.975, greater than 0.7, and all inter-item correlation coefficients are above 0.3, with the lowest being 0.890. The KMO coefficient is 0.927, exceeding 0.5, the p-value is 0.000, less than 0.05, and the explained variance reaches 84.549%, exceeding 50%. Additionally, all factor loadings are above 0.5, with the lowest value being 0.897. Therefore, the olfactory factor scale with 6 observed variables is a unidimensional and reliable measure.

Tactile factor: The tactile factor scale is composed of 4 observed variables, including tactile1, tactile2, tactile3, and tactile4. The reliability test results show that the tactile factor scale meets the necessary reliability with a Cronbach's Alpha coefficient of 0.964, exceeding 0.7, and all inter-item correlation coefficients are above 0.3, with the lowest being 0.937 for tactile1. Exploratory Factor Analysis (EFA) reveals a KMO coefficient of 0.842, greater than 0.5, a p-value of 0.000, less than 0.05, and an explained variance exceeding 50% (specifically 90.268%). Therefore, the tactile factor scale is a unidimensional and reliable measure.

Table 1: *Results of preliminary Scale Assessment*

Factor	Cronbach's Alpha	Minimum Corrected Item-Total Correlation	KMO	p-value Bartlett's Test	Total Variance Explained	Minimum Factor Loadings
Visual (9)	0.977	0.877	0.962	0.000	84.831%	0.904
Auditory (6)	0.960	0.849	0.922	0.000	83.703%	0.896
Gustatory (6)	0.963	0.852	0.936	0.000	88.766%	0.924
Olfactory (6)	0.975	0.890	0.927	0.000	84.549%	0.897
Tactile (4)	0.964	0.884	0.842	0.000	90.268%	0.935
PSQ (6)	0.966	0.870	0.921	0.000	85.840%	0.909
SAT (4)	0.965	0.894	0.863	0.000	90.412%	0,940

Source: The authors synthesized from the SPSS software

4.1.2. Official scale assessment

Results of Confirmatory Factor Analysis (CFA)

The preliminary assessment of the scale shows that the research concepts are reliable and appropriate for the research data. Therefore, the authors proceeded with Confirmatory Factor Analysis using a limited sample size of n=251 to evaluate the scale thoroughly.

Firstly, the authors assessed the model fit through various indices: Chi-square/df = 1.107; GFI = 0.868; CFI = 0.994; TLI = 0.994; RMSEA = 0.021; and PCLOSE = 1.000 (Figure 4.1). According to Hu and Bentler (1999), the evaluation conditions are as follows: Chi-square/df ≤ 3, CFI ≥ 0.9, TLI ≥ 0.9, RMSEA ≤ 0.06, PCLOSE ≥ 0.05; and based on Baumgartner and Homburg (1996) and Doll et al. (1994), GFI ≥ 0.8 is acceptable. It is evident that all model fit indices meet the criteria, leading the authors to conclude that the model is suitable for the research data.

Subsequently, the authors evaluated the quality of observed variables in CFA. The results indicate that all observed variables have a p-value of 0.000 < 0.05, signaling that all observed variables are significant in the model. Furthermore, all observed variables have standardized regression weights greater than 0.5, demonstrating their high appropriateness.

Convergence and Discriminant Validity testing

After conducting CFA for confirmatory factor analysis, the authors conducted tests for convergence and discriminant validity to ensure that the scales do not introduce biases in the analysis results and that the estimates reflect the significance of the data and reality.

Table 2: *Results of Convergence and Discriminant Validity testing*

	CR	**AVE**	**MSV**	**MAxR(H)**	**Visual**	**Olfactory**	**PSQ**	**Gustatory**	**Auditory**	**Tactile**	**SAT**
Visual	0,978	0,830	0,1333	0,994	0,911						
Olfactory	0,975	0,866	0,077	0,987	0,277**	0,930					
PSQ	0,967	0,831	0,031	0,993	0,107	0,086	0,912				
Gustatory	0,964	0,816	0,117	0,987	0,328***	0,171**	0,068	0,903			
Auditory	0,961	0,805	0,102	0,987	0,265***	0,918**	0,096	0,320***	0,897		
Tactile	0,964	0,871	0,096	0,990	0,047	0,146*	0,176**	0,157*	0,175**	0,933	
SAT	0,965	0,872	0,133	0,979	0,252***	0,081	0,081	0,342***	0,298***	0,310***	0,934

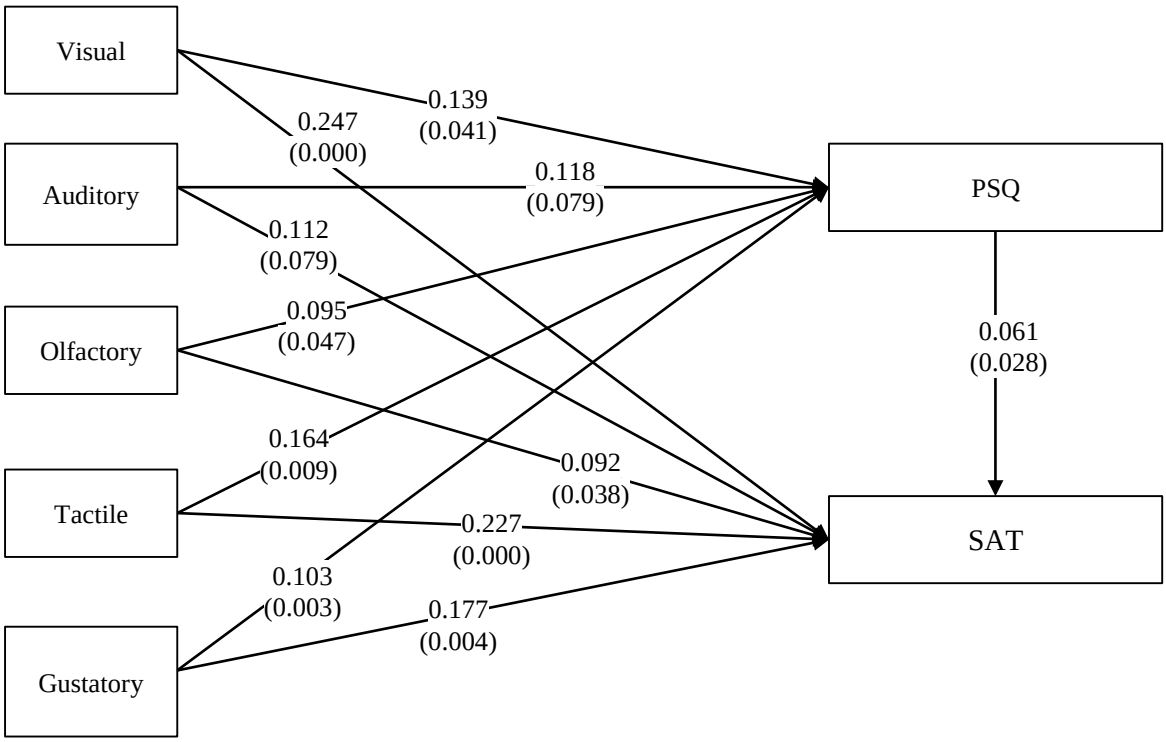
*Note: † p-value < 0.100 (10%); * p < 0.050; ** p < 0.010; *** p < 0.001*

Source: The authors synthesized from the AMOS software

Convergence: Based on the results in Table 4.4, the average variance extracted (AVE) for all factors is greater than 0.5, with the smallest value being 0.805. Therefore, convergence is ensured.

Discriminant Validity: The results in Table 4.4 show that the maximum shared variance (MSV) for all factors is less than the AVE, with the highest MSV value being 0.1333, smaller than the smallest AVE value of 0.805. Additionally, the square root of the average variance extracted (SQRTAVE) is greater than the inter-construct correlations. Hence, the authors conclude that discriminant validity is ensured.

4.1.3. Result of the linear structural model analysis



Note: the value in the bracket is p-value; PSQ: Perceived Quality; SAT: Satisfaction

Accepted hypothesis

Rejected hypothesis

Figure 3: Results of the linear structural model analysis

Source: The authors synthesized from the AMOS software

Visual factor: The results indicate that the visual factor has a positive effect on perceived quality (PSQ) and satisfaction (SAT) with standardized Beta coefficients of 0.139 and 0.247, respectively, at the 10% significance level and p-values of 0.041 and 0.00, both less than 0.1. This suggests that as visual experience increases, perceived quality and satisfaction also increase, holding other factors constant. Thus, hypotheses H1a and H1b are accepted.

Auditory factor: At the 10% level, the auditory factor has a positive effect on perceived quality (PSQ) and satisfaction (SAT) with p-values of 0.079 and 0.062, both less than 0.1. The standardized Beta coefficients are 0.118 for its impact on perceived quality and 0.112 for its impact on satisfaction. This indicates that a better auditory experience leads to higher perceived service quality and satisfaction, with other factors remaining constant. Therefore, hypotheses H2a and H2b are accepted.

Olfactory factor: The olfactory factor has a statistically significant positive influence on both perceived quality (PSQ) and satisfaction (SAT) at the 10% significance level (both p-values less than 0.1). The standardized Beta coefficients are 0.095 and 0.092 with p-values of 0.047 and 0.038, respectively. This suggests that a better olfactory experience leads to higher perceived service quality and satisfaction, with other factors remaining constant. Thus, hypotheses H3a and H3b are accepted.

Tactile factor: The results show that the tactile factor has a positive effect on perceived quality (PSQ) and satisfaction (SAT) with standardized Beta coefficients of 0.164 and 0.227 at the 10% significance level and p-values of 0.009 and 0.000, both less than 0.1. This suggests that as tactile experience improves, perceived quality and satisfaction also increase, holding other factors constant. Consequently, hypotheses H4a and H4b are accepted.

Gustatory factor: At the 10% significance level, the gustatory factor has a positive effect on perceived quality (PSQ) and satisfaction (SAT) with p-values both less than 0.1. The standardized Beta coefficient is 0.177 for its impact on satisfaction and 0.103 for its impact on perceived quality, indicating that a better gustatory experience leads to higher perceived service quality and satisfaction, with other factors remaining constant. Therefore, hypotheses H5a and H5b are accepted.

In summary, perceived quality is influenced by all 5 sensory marketing factors including Visual, Auditory, Olfactory, Tactile, and Gustatory. Based on the standardized regression coefficients, among the 5 variables with positive effects on perceived quality, the order of decreasing impact is: Tactile, Visual, Auditory, Gustatory, and Olfactory. The sensory marketing factors collectively contribute to explaining 70% of the variance in perceived quality, with an R^2 value of 70%.

Satisfaction is also influenced by all 5 sensory marketing factors including Visual, Auditory, Olfactory, Tactile, and Gustatory. Based on the standardized regression coefficients, among the 5 variables with positive effects on satisfaction, the decreasing order of impact is: Visual, Gustatory, Tactile, Auditory, and Olfactory. The results also demonstrate that perceived quality has a positive effect on satisfaction with an estimated coefficient of 0.061 and p-value of 0.028. Thus, hypothesis H6 is accepted. It is worth noting that the sensory marketing factors and perceived quality together explain 28.3% of the variance in satisfaction, with an R^2 value of 28.3%.

4.1.4. Bootstrap estimated coefficient results

To assess the robustness of the estimation model, the authors used bootstrap testing with a resample size of 1000 and compared it with the estimated results from the collected sample. The bootstrap testing results show that the standard deviation between the standardized beta coefficients from the original sample and the average of the beta coefficients in the bootstrap testing is very small (with the maximum deviation being 0.004). Therefore, it can be concluded that the estimation model is robust and reliable and can be used for population inference.

Table 3: *Bootstrap estimated coefficient results (n=1000)*

Relationship	**SE**	**SE-SE**	**Bias**	**SE-Bias**
PSQ ← Visual	0.084	0.002	-0.002	0.003
PSQ ← Auditory	0.088	0.002	-0.145	0.003
PSQ ← Olfactory	0.069	0.002	-0.192	0.002
PSQ ← Tactile	0.068	0.002	-0.001	0.002
PSQ ← Gustatory	0.088	0.002	-0.001	0.002
SAT ← Visual	0.069	0.002	-0.001	0.002
SAT ← Auditory	0.074	0.002	0.001	0.002
SAT ← Olfactory	0.057	0.001	-0.002	0.002
SAT ← Auditory	0.058	0.001	-0.002	0.002
SAT ← Gustatory	0.078	0,002	0,004	0,002

Source: The authors synthesized from the AMOS software

4.1.5. Differences between gender and regional groups in perceived quality

An independent t-test was conducted to evaluate the difference in perceived quality between males and females. The Levene's test has a significant result of sig. < 0.05, indicating that the variance between males and females is different. Furthermore, the sig. value of the T-test is 0.045 < 0.05, thus indicating a statistically significant difference in perceived quality between males and females. Therefore, hypothesis H7 is accepted.

Based on Table 4.9, the average value of the male gender group is higher than the female gender group. The authors conclude that the level of service quality perception is higher for males than for females.

Table 4: *Statistics of the perceived quality scale for two gender groups*

Gender	**Observations**	**Mean**
Male	100	4.1355
Female	151	3.2829

Source: The authors synthesized from the SPSS software

To analyze the differences between regional groups in perceived quality, the authors used the analysis of variance. The result of the homogeneity of variances test (Levene's Test) with a Sig. = 0.001 < 0.005 indicates that the variance among the three regional groups is equivalent. Furthermore, the F-test with a p-value = 0.000 < 0.05 demonstrates differences in the perceived service quality among different regional groups. In other words, the regional factor leads to differences in perceived quality, thus hypothesis H8 is accepted.

Table 5: *Statistics of the perceived quality scale for three regional groups*

Regions	**Observations**	**Mean**
North	157	3.671
Central	59	2.953
South	35	4.252

Source: The authors synthesized from the SPSS software

To compare the perceived quality among customers from three different regions nationwide, the authors conducted a comparison of means. The regional group with a higher mean value indicates a higher level of sensory perception of service quality through the senses. The results show that the Southern region has the highest perceived service quality, followed by the Northern region, and lastly the Central region.

4.1.6. Results of hypothesis testing

Table 7: *Results of Hypothesis Testing*

Hypothesis	Relationship	Standardized Beta coefficients	SE	p-value	Result
H1a	Visual → PSQ	0.139	0.069	0.041	Accepted
H1b	Visual → SAT	0.247	0.061	0.000	Accepted
H2a	Auditory → PSQ	0.118	0.082	0.079	Accepted
H2b	Auditory → SAT	0.112	0.073	0.062	Accepted
H3a	Olfactory → PSQ	0.095	0.061	0.047	Accepted
H3b	Olfactory → SAT	0.092	0.054	0.038	Accepted
H4a	Tactile → PSQ	0.164	0.060	0.009	Accepted
H4b	Tactile → SAT	0.227	0.054	0.000	Accepted
H5a	Gustatory → PSQ	0.103	0.085	0.003	Accepted
H5b	Gustatory → SAT	0.177	0.075	0.004	Accepted
H6	PSQ → SAT	0.061	0.056	0.028	Accepted
H7	Gender	-	-	0.045	Accepted
H8	Region	-	-	0.000	Accepted

Source: The authors synthesized from the AMOS software

4.2. Discussion

All five sensory marketing factors have a statistically significant positive impact on the perceived quality of McDonald's food services among young customers. Previous studies such as Hoang & Tučková (2020); Nguyen Hong Quan et al. (2022); Randhir (2016); and Hulten (2020) have also analyzed the effectiveness of sensory marketing in the food service industry, concluding that all five sensory marketing factors, including visual, auditory, tactile, olfactory, and gustatory senses, positively influence customers' perceived service quality. Therefore, the findings of this dissertation are consistent with these previous studies and further strengthen the conclusion that sensory marketing plays a crucial role in enhancing customers' positive perceptions of services (Kim and Perdue, 2013; Chua et al., 2019).

Among the five variables that positively influence perceived quality, the decreasing order of impact is as follows: tactile, visual, auditory, gustatory, and olfactory.

The results of the linear structural model analysis show that all five sensory marketing factors: visual, auditory, olfactory, tactile, and gustatory, have both direct and indirect positive impacts on the satisfaction of young customers with food services. The results indicate that when the experiences of visual, gustatory, tactile, auditory, and olfactory senses increase by 1 unit, satisfaction increases by 0.247, 0.227, 0.177, 0.118, and 0.092 units, respectively. In decreasing order, the degree to which each of the five factors impacts satisfaction is: visual, tactile, gustatory, auditory, and olfactory. Thus, olfactory sense ranks lowest in its impact on perceived quality and satisfaction. The positive role of sensory marketing in satisfaction has also been confirmed in numerous in-depth studies on sensory marketing, such as Randhir et al. (2016) and Chua et al. (2019).

Perceived quality is considered a precursor to customer satisfaction (Parasuraman, 1985). When customers have a positive perception of a service, they are more likely to be satisfied with it. The research results show that perceived quality has a positive impact on satisfaction with an estimation coefficient = 0.061 and p-value = 0.028. This result is consistent with many previous studies such as Oliver (1993); Taylor and Baker (1994); Iglesias and Guillén (2004); and Ryu et al. (2012), indicating the significant role of service quality in customer satisfaction.

The conclusion has demonstrated differences in the perceived quality of service between male and female genders, with males tending to perceive higher service quality than females. This finding aligns with the observations of Woo-Hyuk Kim et al. (2020) and Mojet (2003).

Additionally, the study's results indicate differences in the perceived quality of food services among young customers when using the McDonald's food service. The results show that the Southern region has the highest perceived service quality, followed by the Northern region, and lastly the Central region. These findings correspond with Mojet's (2003) research, which stated that an individual's background influences their senses when perceiving a particular type of food at a point of sale.

5. Conclusion and implications

5.1. Concluding remarks

The role of sensory marketing is crucial in enhancing customer experience in the food and beverage industry, particularly in the context of intense competition and challenges. The thesis titled "The Influence of Sensory Marketing on the Perceived Quality and Satisfaction of young customers with food services in Vietnam: The case of McDonald's" aims to explore the impact of five sensory marketing elements, including visual, auditory, taste, tactile, and olfactory, on the perceived quality and satisfaction of young customers with food services.

The analysis of the linear structural model reveals that all sensory marketing elements, including visual, auditory, taste, tactile, and olfactory, have a direct and positive impact on the perceived quality and satisfaction of young customers when using the food services at McDonald's. Among the five variables positively impacting perceived quality, the decreasing order of their influence is as follows: tactile, visual, auditory, taste, and olfactory. In descending order, the level of influence on the satisfaction of the five factors is: visual, tactile, taste, auditory, and olfactory. Additionally, the quantitative research results indicate that perceived quality positively influences the satisfaction of young customers with food services.

5.2. Implications

5.2.1. Enhancing sensory stimulation through multi-modal approaches

With the increasing demand for unique experiences, consumers are becoming more selective and discerning. Consequently, sensory marketing campaigns are increasingly important in attracting customers. To create vivid and unforgettable experiences, brands need to integrate elements that appeal to all five senses: visual, auditory, gustatory, tactile, and olfactory.

For gustatory stimulation, McDonald's needs to diversify its menu, catering to local eating habits. While recent years have shown efforts to diversify the menu with Vietnamese-flavored items such as pho-flavored burgers, these efforts seem to have fallen short due to a lack of integration and high prices, leaving customers less than satisfied. Therefore, McDonald's should focus on adapting its gustatory marketing to suit local culinary culture, while ensuring a harmonious integration. For example, Lotteria has recognized that Vietnamese people often eat rice with soup, and has therefore added soup to its chicken rice dishes.

Regarding auditory stimulation, marketing efforts in this sensory aspect at McDonald's Vietnam have been overlooked. Therefore, McDonald's needs to enhance the auditory experience for customers. Young consumers tend to favor pop and ballad music genres, so to meet

these preferences, McDonald's can consider exclusive collaborations with Vietnamese artists, as is being done in the US, to increase brand recognition and enhance the auditory experience for customers. McDonald's should collaborate with Vietnamese artists to create music products for brand promotion based on seasonal and event themes. This is widely applied in Vietnam, such as Vincom's collaboration with singer Min on the song "Christmas Harmony" during the 2019 Christmas season, simultaneously broadcast in all shopping centers, naturally enhancing brand recognition. Currently, the song "Christmas Harmony" is still being broadcast in many other shopping centers besides Vincom, such as BigC, Lotte, and Vincom also benefits from this.

For visual stimulation, this is a significant factor influencing the perceived quality and satisfaction of young customers. Generation Z is currently very interested in space, food presentation, etc., as they have the habit of taking photos, checking in, and sharing on social media. Therefore, ensuring light, packaging, spatial arrangement, etc., is necessary to increase customer satisfaction. Stimulating the visual sense through food processing should be applied. A typical example is the Haidilao brand, which has performers demonstrating the noodle pulling process to attract customers and create unique experiences at Haidilao.

For olfactory stimulation, McDonald’s needs to particularly focus on cleanliness, as this is a sensitive area that significantly impacts the perceived quality and satisfaction of consumers. Additionally, attention should be paid to the ventilation system to avoid odors affecting customers during their dining experience. McDonald's can also create a space with a distinctive scent characteristic of McDonald’s to enhance the impression for customers.

Regarding tactile stimulation, customers in post-Covid era tend to pay more attention to hygiene. Therefore, attention should be given to the cleanliness of eating utensils, tables, and chairs. Cleaning should be carried out before, during, and after the customer's service experience. In practice, many restaurant chains are slow during peak hours due to a lack of staff, leading to customers arriving without available seating due to uncleared tables and leftover food from previous customers, which not only negatively impacts the tactile experience but also the visual aspect for consumers. Furthermore, to enhance the tactile experience, McDonald’s should provide aprons if there are young children present to avoid getting their clothes dirty.

5.2.2. Promote Contactless Payment Activities and Create Interactive Touchpoints

Consumers are increasingly concerned about hygiene at their touchpoints, therefore, promoting contactless payments not only saves time for customers but also minimizes contact. Currently in Vietnam, there are a variety of contactless payment solutions such as Apple Pay, Samsung Pay, SofPOS, Tap to Phone technologies which support the fastest payment for customers and minimize the investment cost for card readers for businesses.

In addition, McDonald’s can implement "touch entertainment" solutions to enhance tactile interaction with customers. McDonald’s can set up screens for gaming with rewards, or manual mini-games such as spinning wheels, challenges, etc., to promote tactile experiences. Furthermore, McDonald’s should consider deploying automatic ordering machines as they have done in the US, where customers do not have to wait long and can be proactive in the ordering process.

In reality, some restaurants in Vietnam, such as the Hotpot chain Haidilao, are focusing on creating touch points through stimulating customers' senses. For example, Hadilao has created brand-themed dances such as the "Rice Paddy Dance" to stimulate customers' visual and auditory senses, thereby enhancing a positive sensory experience, keeping customers engaged for longer, and increasing the perceived service quality. Although Hadilao's price is relatively high, averaging around 500,000-600,000 VND per person, it still attracts a large number of

young people due to the entertainment touchpoints, keeping up with trends, or even leading trends. Therefore, McDonald's Vietnam can carry out concise entertainment activities before, during, and after the service experience to attract young customers.

5.2.2. Pay attention to gender and regional differences

McDonald's should adapt their menu to cater to the specific tastes and preferences of customers in each region, thereby enhancing customer satisfaction and potentially increasing sales. It's also important for McDonald's to engage with local communities and customers to understand their cultural practices and preferences, and use this information to customize their offerings.

It's indeed crucial for McDonald's to consider gender-specific preferences when tailoring their offerings. This consideration ensures that their menu, marketing strategies, and overall customer experience are inclusive and appealing to all demographics. Moreover, conducting their own surveys or analyses to understand the preferences of different gender groups within their customer base can be beneficial in tailoring their offerings accordingly.

6. Limitations and future directions

6.1. Limitations

Despite achieving the research objectives, the thesis still has some limitations that need to be addressed in future studies:

Firstly, due to time constraints and geographical barriers, the research sample was mainly collected from young customers in major cities, with a relatively small sample size of 252. Additionally, the survey participants were primarily from the Northern and Central regions, while the participation rate from the Southern region was very low. Moreover, the study only collected data from customers at McDonald's and did not encompass other fast-food brands. Therefore, the research sample has certain limitations in drawing overall conclusions that are not comprehensive for other target groups.

Secondly, the study investigated the influence of sensory marketing on the perceived quality and satisfaction of customers' dining experiences at physical outlets, without expanding the scope to include customers using McDonald's dining services through online channels such as hotlines, fan pages, websites, etc. Meanwhile, the number of customers using these channels is significant, with an increasing trend of online food ordering. Therefore, the thesis does not encompass the entire customer base of McDonald's, both in-store and online.

6.2. Future directions

In light of these limitations, the authors suggest some directions for future research as follows:

Firstly, future studies should conduct comprehensive and diverse investigations in various regions across the country, at different stages and times, with a larger sample size. This approach can lead to more complete and comprehensive conclusions regarding the impact of sensory marketing on the perceived quality and satisfaction of customer dining experiences. The studies should also expand the scope to include multiple restaurants and eateries to increase the overall inferential nature of the sample.

Secondly, it is essential to conduct additional research on the impact of sensory marketing on the perceived quality and satisfaction of customers through online channels. Nowadays, online food ordering is becoming a habit for customers, especially young customers due to its convenience and variety of choices. The trend of online food ordering is growing along with the proliferation of food ordering platforms and e-commerce markets. Therefore, there is a need to focus on enhancing the application of sensory marketing activities on online platforms, and in-depth research on sensory marketing in online channels is necessary to gain a comprehensive understanding of its impact on the perceived quality and satisfaction of customer dining experiences.

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