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Empirical Paper

Nutritional Information and Portion Size in Relation to Customer Purchase Behaviour

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Abstract: Healthy eating is a significant concern in public health. People who are health-conscious or have special dietary requirements prioritise nutrition and calorie consumption. Thus, many customers rely on the information on a restaurant's menu when making their purchase decisions. This study aims to investigate the relationship between nutritional information as well as portion size in restaurant menus and customer purchase decisions. A self-administered survey was conducted in the area of Shah Alam, the state capital of Selangor, Malaysia. A purposive sampling with 107 usable questionnaires was analysed using Structural Equation Modelling (PLS-SEM). The results revealed that nutritional information and portion size in restaurant menus significantly influenced customer purchase decisions. As a consequence, restaurants face a crucial challenge in providing nutritional information and portion size in their menus in a way that gives them a competitive advantage and at the same time compels customers to make healthy eating choices.

Keywords: Nutritional information, portion size, purchase decision, restaurant menu

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Introduction

The foodservice industry in Malaysia has become more competitive in sustaining the business itself and meeting customers' demands and expectations. Malaysia is known as a "food heaven" (Astrup et al., 2000) because its multi-ethnic community has spawned various ethnic and specialty cuisines. Many restaurants create fusion food and offer attractive menus to boost sales. Some, for instance, provide a wide selection of value-for-money set menus. Fast-food restaurants offer gifts together with value meals to attract children. Restaurant operators' launch of value meal sets has led customers to consume more calories with or without their realisation. Thus, the foodservice industry can potentially harm consumers through food poisoning and other eating-related diseases (Vernarelli et al., 2016). An alarming eating-related condition is obesity, which is increasingly prevalent in Malaysia and other countries all over the world (Ministry of Health, 2006). Globally, 609 million adults were predicted to be overweight or obese in 2015, representing roughly 39% of the world population (Chooi, Ding, & Magkos, 2019). According to Young, Coppinger, and Reeves (2019), the number of overweight and obese people is increasing worldwide. The easy availability of lavish, non-nutritious foods has contributed to this prevalence of overweight and obesity in the global population.

People living in the city tend to dine out more frequently for reasons such as busy work schedules, convenience, the rising cost of ingredients, or because cooking is tedious (Glucksmann, 2014). However, at the same time, consumers with diet restrictions and who are health-conscious need more information that can influence their purchase decisions. The availability of nutritional information will enable them to make healthy food choices that are in the appropriate portion size for daily consumption (Peters & Remaud, 2020).

According to Young et al. (2019), the nutritional information in restaurant menus typically includes energy, fat, and salt content. Young et al. (2019) also discovered that 68% of children aged 2–5 years and 55% of children aged 6–12 years consumed more fat than recommended. Surprisingly, it was found that fast-food restaurant meals contained less energy, fat, and salt than full-service restaurant meals (Young et al., 2019). Besides nutritional information, it is also essential to include portion size, such as small, medium, and large (Niven et al., 2019; Roe, Kling, & Rolls, 2016) in restaurant menus.

Regardless of the type of restaurants customers choose, food consumption that meets dietary guidelines must be followed to combat overweight and other related diseases such as cardiovascular disease, hypertension, and other chronic diseases (English, Lasschujit, & Keller, 2015). This could be one of the tools to maintain health, in line with Goal 3 of the Sustainable Development Goals (SDG) that aspires to ensure good health and well-being for all (Kukreti, Painoli & Rana, 2021). A potential contributory factor to obesity is the increased portion sizes of foods

commonly served (English et al., 2015). Hence, it is crucial to provide nutritional information and portion size on packed food and restaurant menus. Such menu labelling can serve as a tool to reduce global health risks like obesity, cardiovascular diseases, diabetes, and other related chronic diseases in order to achieve the SDG. To help consumers make healthful dietary decisions when eating at restaurants, the Malaysian Government plans to enact a nationwide menu labelling law by 2025 (Rahamat, 2019).

From our knowledge, there is limited research concerning nutritional information and portion size on restaurant menus (Long, Tobias, Craddock, Batchelder, & Gortmaker, 2015), including in Malaysia (Rahamat, 2019). Thus, this study provides valuable information in understanding how customers in the foodservice industry assess nutritional information and portion size in restaurant menus. In view of the steadily mounting number of reported cases on obesity and chronic diseases, the availability of nutritional information and portion size in restaurant menus can play a significant role in protecting public health and combatting obesity in the country. As a result, customers will become more knowledgeable about the menu items offered and, ultimately, benefit more from updated menu items that cater to changes in customer demand.

Literature Review

The term “foodservice” as Payne-Palacio and Theis (2009) noted, refers to the establishment where food is served outside. Such establishments include the various types of restaurants like cafeterias, carry-out operations, coffee shops, drugstore counters, fast-food chains, and sandwich shops; food preparation facilities such as clubs, cocktail lounges, hotels, motels, and taverns; airlines, railroad and ship operations; and institutional food services including those in schools, colleges, hospitals, industrial, military, and retirement homes. DiPietro (2017) further stated that the foodservice industry is inherent in all hospitality and tourism environments within the service context. The types of establishments can vary from fine dining restaurants to foodservice operations in lodging operations, institutional dining venues, and the current trend of using food trucks, mobile food carts, and even pop-up restaurants. The availability of a wide variety of food presents consumers with the advantage of having more choices. Due to their busy lifestyles and the constant struggle for work-life balance, Malaysians tend to opt for convenient food. As a result, the foodservice industry is expanding in the country. Besides, consumers are also looking for food that gives value for money. Other than price, consumers also demand nutritional information to assist them before making their purchases (Melo, Zhen, & Colson, 2019).

Research Model and Hypotheses Formulation

In recent years, research on consumer behaviour has become crucial for marketers to understand the purchase decision process. According to Schiffman and Kanuk (2007), consumer behaviour is a field of study that involves defining how a consumer decides to purchase a product or service, such as searching, using information, and evaluating if the product or service can meet their satisfaction based on the available resources they have such as money, effort, and time. Figure 1 shows the consumer decision-making process (Bettman, Johnson, and Payne, 1991). It starts with recognising problems, followed by searching for information, evaluating alternatives, purchasing, and post-purchase behaviour. Even though this model is presented in a linear form, the process can be iterative, whereby the consumer may continually evaluate each stage before a decision is made (Jung, Sydnor, Lee, & Almanza, 2015).

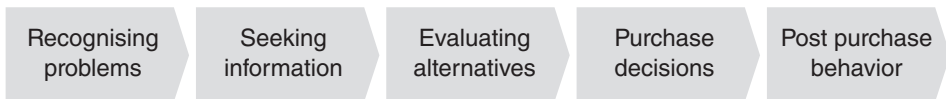


Figure 1. Decision-making process (Bettman et al.,1991)

In this study, the decision-making process is associated with nutrition labels and food content on restaurant menus, which have become an increasingly important issue due to the increasing number of people suffering from obesity-related complications (Thomas & Mills, 2006). Studies have shown that the availability of nutritional information and caloric content does stimulate changes in awareness and attitude, and could indirectly affect consumers' final consumption decisions towards healthier food choices (Cawley, Susskind, & Willage, 2020; Basak et al., 2019). Furthermore, providing nutritional labelling increases customers' willingness to pay more and make healthy food choices (Talati et al., 2017).

From the Asian perspective, a study in urban Vietnam showed that nutrition labelling programmes may be an effective policy mechanism to minimise the negative health implications related to the increasing availability and consumption of food and beverages with added sugars (Nguyen-Anh, Umberger, & Zeng, 2020). Hence, marketers can apply this concept to improve business profitability by understanding consumers' wants and needs. Lu and Gursoy (2017) emphasised that a restaurant's food menu is critical in attracting potential customers. Previous studies have established a positive relationship between providing nutritional information on food menus and the customers' choice to purchase healthy food.

Restaurant establishments that currently provide nutritional information must ensure the information does not manipulate or mislead the customer. McVety, Ware, and Ware (2001) further stated that once a restaurant makes a nutrient or health claim

regarding a menu item, it must be able to prove that claim. A nutrient claim makes a statement about the presence or absence of a nutrient in a menu item. For instance, words such as cholesterol-free, fresh, healthy, natural, low in fat, light, and reduced are commonly used on menus today. A health claim states a relationship between food items or meals and disease prevention, for example, fruits and vegetables that prevent cancer.

Moreover, Haws and Liu (2016) showed that customers view attractiveness, ease of use, and clear presentation as the most important factors relating to restaurant menus' nutritional labelling. Therefore, providing nutritional information on restaurant menus does not directly increase customers' knowledge or awareness of food content. It is interesting that even though some customers viewed the provision of nutritional content information on restaurant menus as a mere showpiece, they still considered the availability of such information as necessary (Larson, Haynos, Roberto, Loth, & Neumark-Sztainer, 2018). Rahamat (2019) found that health-conscious consumers in Malaysia have the intention to use restaurant menu labelling.

According to McVety et al. (2001), information on a restaurant menu is helpful and it is vital to classify the information into two categories: necessary information and helpful information. They noted that information that is not necessary for menu planning for a commercial foodservice operation might be essential for institutional foodservice operations. For instance, it is not crucial to know customers' sodium dietary needs when planning a menu for commercial foodservice. However, as customers become more health-conscious and concerned about their food intake, they demand to have this information included on the menu. Nonetheless, this information would be necessary when planning a patient menu in an institutional foodservice operation (McVety et al., 2001). For instance, the hospital menu for hypertension patients must be low in sodium.

As menus are designed to display information that consumers need to consider when placing food orders (Filimonau, Lemmer, Marshall, & Bejjani, 2017), informing consumers on food nutritional quality via product labels is a national-level government strategy for combatting obesity and diet-related chronic illnesses (Melo et al., 2019). According to Young et al. (2019), the information that is generally displayed on the restaurant menu is the total energy, fat, and salt content. However, Niven et al. (2019), added that it is crucial to include portion size. Portion size is generally stated as small, medium, or large.

In Malaysia, the foodservice establishments that provide nutritional information on restaurant menus include fast-food restaurants such as KFC and McDonald's. In addition, a study by McCrory, Harbaugh, Appeadu, and Roberts (2019) provided a detailed assessment of the changes over time in fast-food menu offerings over 30 years. These changes include food variety, portion size, energy, energy density, and certain micronutrients such as sodium, calcium, and iron as percentage daily values

(%DV). The study also compared the changes over time across menu categories: entrées, sides, and desserts. According to the study, the number of entrées, sides, and desserts in restaurants increased by 226% from 1986 to 2016. Except for side dishes, the portion size of entrées and desserts increased significantly at 13 g/decade and 24 g/decade, respectively. On top of that, the energy (kilocalories) and sodium content of items in all three menu categories also escalated gradually. Meanwhile, desserts showed the largest increase in energy (62 kcal/decade), and entrées had the largest sodium increase (4.6% DV/decade). Although calcium content increased significantly in entrées (1.2% DV/decade), and to a greater extent, in desserts (3.9% DV/decade), iron content increased significantly only in desserts (1.4% DV/decade). Thus, as emphasised by Peters and Remaud (2020), the important attributes influencing menu-item selection in a restaurant context are nutritional information and appropriate serving portion size.

Other restaurants like Kenny Rogers (Kenny Rogers, n.d.), or even certain mamak restaurant outlets, or hospital and university food courts display the portion size at their establishments. Customers who are health conscious or have diet restrictions will use the calorie information before purchasing the food, in addition to price considerations. Besides foodservice establishments, the jogging track or area also displays the food, portion size, and calories. Moreover, it can also suggest some exercises that can burn calories equivalent to the amount of food consumed. Technological advancements have also enabled the use of android applications to help customers make healthier food choices by providing information about portion sizes, nutritional information, and calorie count as well as suggest appropriate exercises for calorie burn. Some examples these android applications are calorie counters such as MyFitnessPal and many others. The app-based approach shows potential as an effective way to help people exercise more and establish healthier eating choices (Jimoh et al., 2018) based on nutritional quality, controlling portion size, and calorie intake.

Additionally, good nutrition can help prevent chronic diseases and increase longevity. Contrariwise, excess intake of nutrients may result in overweight and obesity, and many people in the world today are now suffering from heart disease, hypertension, and diabetes (World Health Organization, 2017; Melo et al., 2019). Due to the importance of proper nutrition for health, some countries have made it mandatory to display nutritional information to the public (Newson, van der Maas, Beijersbergen, Carlson, & Rosenbloom, 2015). For instance, in the United States, restaurants even provide calorie information brochures to customers (Dumoitier, Abbo, Neuhofer, & McFadden, 2019).

The Ministry of Health Malaysia (MOH) on 29 September 2005 amended the Food Regulations 1985 to make nutrition labelling compulsory for certain foods and regulate health and nutritional claims. Nutrition labelling is a declaration of the

nutrient level(s) on the food label and can help consumers make better food choices and adopt healthy dietary practices. The local food manufacturers and distributors must abide by Malaysia's Food Act 1983 and Food Regulations 1985, which protect the public against health hazards and fraud in the preparation, sale, and use of food (Ministry of Health Malaysia, 2006). All the nutrients in foods must be regulated by laboratories accredited by the Department of Standards under the Skim Akreditasi Makmal Malaysia (Ministry of Health Malaysia, 2006).

The MOH claims that nutrition labelling is a dominant way for the food industry to actively promote a healthy lifestyle among consumers (Ministry of Health Malaysia, 2006). Unfortunately, in Malaysia, nutrition labelling is only compulsory for food products but not for menus in foodservice outlets. However, there is an abundance of research published concerning the use of menu labelling (Bowers & Suzuki, 2014; Jeong & Ham, 2018; Larson et al., 2018; Lessa, Zulueta, Esteve, & Frigola, 2017). Although numerous studies have been carried out in the United States on foodservice providers in fast-service restaurants (Thomas & Mills, 2006), studies on full-service restaurants are limited, and even more so, studies from the Malaysian perspective. Research indicates that nutritional menu labelling provides essential information and serves as a guide before customers purchase their food. Haws and Liu (2016) emphasised that calorie and portion size information on restaurant menus provide more options and information before a purchase decision is made.

As there is limited research and inconsistent results, particularly in the Malaysian context, this study therefore aims to investigate the relationship between customers' purchase decisions and nutritional information and portion size on restaurant menus. Based on the aforementioned, the following hypotheses have been developed for this study:

H1: There is a significant positive relationship between nutritional information on a restaurant's menu and customer purchase decisions.

H2: There is a significant positive relationship between portion size on a restaurant's and customer purchase decisions.

Materials and Methods

The main purpose of this study is to investigate the relationship between nutritional information, portion size, and the purchase decision in the context of a restaurant setting rather than packed food. Prior to data collection, permission was granted by the shopping mall and restaurant management to collect the data. The respondents were informed about the objectives of the study and survey forms were distributed only upon the respondents' agreement to participate in the survey.

The sampling location of this study was targeted only in Shah Alam. Due to budget constraints, the research was focused on a particular site rather than on more areas. Furthermore, concentrating only on a limited extent in a shorter period is more cost-effective (Sekaran, 2003). Although approximately 10 restaurant managers were contacted, only three managers were allowed to collect the data from customers. The restaurant's permission for this study was granted to the researchers because the restaurant's name would not be revealed. Both parties agreed to the terms and conditions. The restaurant's capacity is approximately 30 to 50 pax at a time.

Purposive sampling was used for this study, One hundred and seven (107) full-service restaurant customers who had experience eating outside of the home were selected for this study. The respondents were approached after they had finished their lunch. The survey was conducted from Fridays to Sundays, within approximately four to five weeks.

The instruments were adapted from Foster (2005). The survey was divided into two parts: (i) demographic profile; and (ii) questions assessing the importance of nutritional information, portion size, and purchase decision. Bahasa Melayu and English were used to gather the data from the respondents. Two content experts and an English language teacher checked all the questions and translated them from English to Bahasa Melayu and vice versa. A Likert scale of one to seven was chosen. Likert scale one indicates "not important", four is "important", and seven is "extremely important". The descriptive data were analysed using Statistical Package for Social Science (SPSS) version 22, whereas the relationship between these variables was analysed using SmartPLS version 3.3. Thereafter, the measurement model and structural model were assessed. The internal consistency, convergent validity, and discriminant validity were also measured. An alpha score from 0.50 to 0.70 was generally accepted and considered a sensible compromise value for demonstrating the internal consistency of a reliable scale (Hinton, Brownlow, McMurray, & Cozens, 2004). However, in only a few cases, a minimum alpha score of .50 was accepted and indicated a scale of low reliability (Hinton et al., 2004). A low-reliability level of .50 was also acceptable when the factor comprised only two or three items and was theoretically meaningful with the construct's conceptualisation under investigation (Blaikie, 2003). Consequently, the recommendations of Hinton et al., (2004) were used in this study as indicators of the scale's reliability and internal consistency.

Results

The majority of respondents were females (64%), with 36% males. The highest population was Malay (84.1%), followed by Chinese (5.6%) and Indians (1.9%). The other 8.4% comprised various ethnicities, including Iranians, Filipinos, Ibans,

Indonesians, and Melanau. As to the respondents' ages, 64.5% were between 21 to 34 years old, which was the highest proportion in this study. This was followed by those aged between 35 to 44 years old (15.9%), and the lowest proportion was those aged 55 years and above (1.9%). Most of the respondents possessed a graduate degree (30.8%). However, there is no apparent difference between the number of respondents with postgraduate degree (22.4%), secondary level education (23.4%), and diploma level education (19.6%). Only 3.7 % of the customers marked primary as their level of education. Students make up the majority of this study (42.1%), with the lowest being a retiree (0.9%), and others (0.9%) who worked as factory workers, hoteliers, and salesgirls. Meanwhile, most of the respondents earned a monthly income of less than RM1,000 (38.3%), and respondents who earned more than RM7,000 monthly made up only 6.5% of the respondents. A majority of the respondents were students from nearby boarding schools, universities, and colleges. Of the respondents, 68.2% dined out once a week, and only 2.8% dined out at least five times per week. The demographic profile of the respondents is shown in Table 1.

Table 1. Demographic profile of respondents

Demographic profile	Frequency, <i>n</i> =107	Percentage (%) 100
Gender		
Male	39	36
Female	68	64
Ethnic group		
Malay	90	84.1
Chinese	6	5.6
Indian	2	1.9
Others	9	8.4
Age		
Under 21 years old	13	12.1
21–34	69	64.5
35–44	17	15.9
45–54	6	5.6
55 years and above	2	1.9
Education		
Primary	4	3.7
Secondary	25	23.4
Diploma	21	19.6
Graduate degree	33	30.8
Postgraduate degree	24	22.4
Occupation		
Student	45	42.1
Housewife	26	24.3

Table 1 (con't)

Demographic profile	Frequency, <i>n</i> =107	Percentage (%) 100
Professional	24	22.4
Self-employed	10	9.3
Retiree	1	0.9
Others	1	0.9
Monthly income		
< RM 1000	40	37.4
RM1000 to 2999	15	14.0
RM3000–4999	4	3.7
RM5000–6999	7	6.5
RM7000 and above	41	38.3
Dine-out frequency		
Fewer than 1 time per week.	6	5.6
1 time per week	73	68.2
2 times per week	14	13.1
3 times per week	7	6.5
4 times per week	4	3.7
5 or more times per week	3	2.8

Measurement Model

Figure 2 shows the research model developed for this study. The model shows that there is a relationship between nutritional information, portion size, and purchase decision. Each of the items for those constructs was further analysed. The results for the model are summarised in Tables 2, 3 and 4. The study’s reflective model was assessed based on three criteria: reliability of construct, convergent validity, and discriminant validity. The construct’s reliability was evaluated using composite reliability (CR), as shown in Table 2 (Roldán & Sánchez- Franco, 2012). As can be seen, the CR of all the constructs is acceptable in that it surpasses the threshold value of 0.7 (Nunnally & Bernstein, 1994). This demonstrates that there is strong internal consistency in the measures used to operationalise this construct. Likewise, all constructs show strong convergent validity. For each construct ranging from 0.543 to 0.626, the average variance extracted (AVE) values were higher than the threshold value of 0.50, suggesting that the tests could explain more than 50 percent of the variance construct.

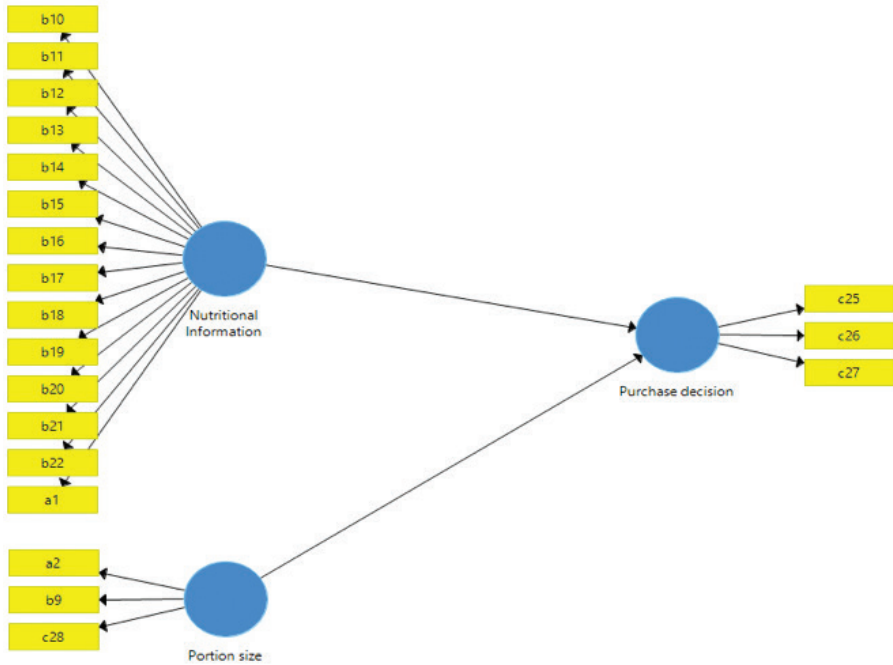


Figure 2. Research model of the study

Table 2. Measurement model

Constructs	Items	Loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Nutritional Information (NI)	a1	0.351	0.946	0.956	0.626
	b10	0.820			
	b11	0.840			
	b12	0.848			
	b13	0.883			
	b14	0.868			
	b15	0.825			

The Fornell-Larcker criterion was used to evaluate the discriminant validity (Henseler, Ringle, & Sarstedt, 2015). As seen in Table 3, the square roots of AVE are greater than the off-diagonal elements in the corresponding row and column (Fornell & Larcker, 1981).

Table 3. Fornell-Larcker criterion

Items	Nutritional information	Portion size	Purchase decision
Nutritional information	0.791		
Portion size	0.459	0.737	
Purchase decision	0.438	0.674	0.765

Structural Model

Next, the hypotheses that were developed needed to be tested. The collinearity was also examined, and the result revealed that the variance inflation factor (VIF) values were acceptable, which was 1.265, that is, below 3.3 as set by Diamantopoulos & Siguaw (2006). The VIF result is shown in Table 4. Therefore, there was no multicollinearity in this study. After the bootstrap was run, the path coefficients’ result was obtained, as shown in Table 4. A relationship between nutritional information and purchase decision was observed ($\beta = 0.164, p < 0.033$). The relationship between portion size and purchase decision was also established ($\beta = 0.599, p < 0.00$). Overall, nutritional information and portion size explained 47% of the variance of the purchase decision. As shown in Table 4, the effect size f^2 was evaluated to assess nutritional information substantive effect on the purchasing decision portion size. Per the rule of thumb set by Cohen (1988), the effect size values were: 0.02 (small), 0.15 (medium), and 0.35 (large). This study revealed that nutritional information has a small effect on purchase decision (0.041), but portion size was found to have a large effect on purchase decision (0.541). The blindfolding procedure was performed with an omission distance of seven to determine the predictive relevance of this study. The results revealed that the Q2 (0.237) value was larger than 0, indicating that this model has medium predictive relevance based on Hair, Hult, Ringle, and Sarstedt (2017)’s rule of thumb. The value 0.02 was considered small, 0.15 considered medium, and 0.35 considered large.

Table 4. Hypothesis testing

Hypothesis	Std. Beta	Std. Error	t-value	p-value	f^2	VIF	LL	UL
H1 Nutritional information > Purchase decision	0.164	0.077	2.134	0.033	0.041	1.265	0.022	0.320
H2 Portion size > Purchase decision	0.599	0.070	8.557	0.000	0.541	1.265	0.410	0.707

t-value > 1.96 = significant, p-value < 0.05 = significant

Discussion

To reiterate, the objectives of this study are to investigate how restaurant customers use the nutritional information and portion size on restaurant menus in making their meal purchase decisions. The Structural Equation Modelling (SEM) path analysis results showed significant results for testing hypotheses. In reference to H1, the results indicate that there is a significant positive relationship between nutritional information on a restaurant menu and customer purchase decisions. In reference to H2, the results also indicate a significant positive relationship between portion size in a restaurant's menu and customer purchase decisions.

Previous research has found that menu labelling, such as nutritional information (Nguyen-Anh et al., 2020; Basak et al., 2019; Rahamat, 2019) and portion size (Peters & Remaud, 2020; Haws & Liu, 2016; English et al., 2015), has a substantial effect on consumers' purchase decisions. Accordingly, this study discovered that the nutritional information and portion size provided in a full-service restaurant's menu affect customers' judgement at the "evaluating alternatives" stage in the decision-making process as outlined by Bettman, et al. (1991). If this information is absent, consumers will strive to estimate the food's nutritional content (König et al., 2019).

Niven et al. (2019) stated that menu labelling encouraged customers to make healthier food selections while dining out. The authors added that holistic information on the restaurant menu (i.e., energy, saturated fat, total fat, total salt, total sugar, protein, fruits, vegetables, and fiber content) is crucial. Even the calorie count in terms of kilojoule (kJ) labelling significantly assists customers to make healthy food choices (Niven et al., 2019), thus aligning with the SDG's Goal 3 of achieving good health and well-being for all. Governments all over the world, whether in Western, European, or Asian countries, are actively promoting a healthy lifestyle to prevent obesity and other chronic diseases such as cardiovascular diseases, cancer, and diabetes. Therefore, it is suggested that this information should be displayed on restaurant menus as one method of intervention to help customers make healthier food choices (Nguyen-Anh et al., 2020; Lo, King, & Mackenzie, 2017; Samoggia et al., 2020). The Malaysian Government plans to enforce menu labelling by 2025 (Rahamat, 2019). In line with the move, this study postulates that Malaysians need such information before the legislation is implemented as it will defeat the purpose if the public ignores the legislation upon implementation. Thus, to improve the quality of life and be healthy, more parties need to aspire and take steps to achieve the SDG Goal 3.

Following from this study, it is suggested that more research be conducted to discover the preferable menu labelling to be displayed on restaurant menus to help customers make healthier food choices. Furthermore, other researchers can replicate this study by enlarging the sample size. It is also suggested that qualitative research be conducted to gauge menu labelling and customer purchasing behaviour. Further

study should be undertaken to precisely discover the other types of nutritional information and portion size that need to be included in a restaurant menu, and how to best present the information (e.g., in pictorial form, such as logo, figure/percentage, colour coding), or any other related information. All this information is pertinent to meet customer demand and boost restaurant sales. At the same time, public health issues related to overweight and obesity can be tackled as this information can become a tool for consumers to make healthier food choices and attain a better quality of life.

Conclusion

Overall, the results of this study show a significant positive relationship between nutritional information as well as portion size on the restaurant menu, and customers' purchase decisions. At the same time, this study has also established these relationships in the Malaysian context. In light of Goal 3 of the Sustainable Development Goals (SDG) that aspires to good health and well-being for all, the findings of this study provide evidence that customers rate it as necessary for nutritional information to be made available on restaurant menus. Such information helps them make healthier food choices in relation to packed food and extends to the restaurant setting. In addition, customers reported that it is crucial to include information about portion size on restaurant menus. Thus, it is highly recommended that a combination of nutritional information and portion size be made available on restaurant menus.

The implications of this study contribute to the existing body of knowledge and enhances society by enabling consumers to make healthy food choices. The information from studies such as this, when put into practice, complements the Government's effort and that of the relevant authorities to combat public health issues such as preventing obesity and other diseases arising from low nutritional intake. This kind of information is crucial and can be used to reduce the prevalence of global health risks like obesity, cardiovascular diseases, diabetes, and other related chronic diseases to achieve Goal 3 of the SDG.

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