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Customer Perception on Nutritional Information in Restaurant Menu

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Abstract

As more customers are educated therefore they are picky about daily food intake. The customer are demanding for more information to be displayed not only for the package food and to date they are looking at nutritional information to be included in the menu. Consequently, this study sought to investigate customer perception towards providing the nutritional information in full service restaurants menu and how it contributes to their purchase decisions. These findings produced significant indicators not only to the existing restaurant operators but also to those individuals or companies who intent to venture into foodservice businesses.

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Keywords: Nutritional menu; full service restaurant; restaurant customer; customer perception

1. Introduction

Most nutritionists expressed too much, imbalance or substantive nutrition intake not only lead to obesity but also contribute to chronic diseases and lessen the longevity (Gopalan, 1992; MOH, 2006). Large numbers of the world populations are reported of suffering heart diseases, hypertension, and diabetes because of obesity (Schofield & Mullainathan, 2008) and six of the ten leading causes of death

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are caused by nutrition related components intakes (Dennison, Dennison & Frank, 1994). Owing to these reasons, more and more people are health conscious and concerned about the types of food they consumed. They are apprehensive not only about the appearance of the products but also the nutritional information for packaged food sold at retail outlets.

The nutritional information or labelling has long been a mandatory requirement for food manufacturers and retailers (King, 2006; Ophardt, 2003). Most legislation is mandating the disclosure of nutrient information of the food products. Nutritional information is factually crucially important to the food processing industry as it provides a means for consumers on the nutritional properties of the products. Almost all countries in this world emphasize that the nutrient contents in foods like, calorie, protein, carbohydrate, fat, sugar and others must be regulated by laboratories accredited (McVety, Ware & Lévesque 2001). In the restaurant industry, food and product information on restaurant menus are normally related to quantity, quality, price, brand names, product identification, points of origin, merchandising terms, visual presentation and food preparation (Thomas & Mills, 2008a). Restaurant operators put a lot of effort to display food preparation or methods of cooking like deep fried, smoked, prepared from scratch, roasted, steamed on menus to give customers a general idea and provide an estimate of time on how long food will be served and would be presented and according to Drydale & Galipue (2008) a customer will look into it before making a purchase decision. Nevertheless, basic information disclosure has a relatively given minor impact on product perceptions and evaluations, unless nutritional information is available to help a customer better understand the contents of food they consumed (Consumer Affairs, 2008). Furthermore, in these present days customers are believed to be demanding beyond those practices and nutritional information, particularly one of the important ones to be included in the menu. Customers expect restaurateurs to provide information on the calorie, sugar, protein, carbohydrates and fat content on the menu (Thomas & Mills, 2006) and the provision of nutritional information on restaurant menus has been gaining popularity and the number of customers who are concerned about this issue has also increased (Thomas & Mills, 2008b).

The importance of nutritional information in the restaurant menu begins to catch attention among academic scholars' from the customer perception to intention and actual purchase behaviour (Basset et al., 2007). According to Hwang & Lorenzen (2008) providing nutritional information on restaurant menus would aid customers in making healthier choices and they were in fact willing to pay more for food that they perceive to be healthier. Burton and Creyer (2004) claimed that customers had more positive attitudes towards items with higher purchase intentions when the most favourable nutritional information was presented on restaurant menus and having a slight negative influence on purchase intentions when unfavourable nutrition information was presented. Yamamoto et al (2005) discovered that the provision of nutritional information on the menu resulted in the selection of meals with lower calorie and fat content from two out of the three restaurant menus on average and a significant number of customers changed their meal orders. Adams & Ferrett (1997) investigated customer perception towards the actual nutritional status of sandwiches and revealed that sandwiches which were below the standard nutrient requirement for energy were not so popular. A similar result was obtained by Cranage, Conklin & Lambert (2004) whereby the lower fat and lower calorie entrées were often chosen by the customers than the high fat and calorie content entrées when nutritional information was displayed for entrée items in a restaurant menu.

In examining the use of nutritional and ingredient information by college freshmen at the point of sale in campus dining facilities, Conklin, Lambert & Cranage (2005) found that females were more likely than males to use the nutrition information labels to make food choices. Females used nutrition information to identify and select lower fat, lower calorie foods, while males used the information to select foods with higher levels of protein. The University of California's Center for Weight and Health calculated that, on an annual basis, nutritional information could reduce the average adult fast-food patron's yearly intake by 9,300 calories, preventing the equivalent of 2.7 pounds of weight gained per person per year and if a customer sees the nutrition information it could prevent around 40 million pounds of weight gain annually for the entire state of California (University of California, 2009). From the restaurateur

perspectives, Kozup, Creyer & Burton (2003), demonstrated that some of restaurateurs also have very little knowledge on nutritional content however will to use the menu the laboratories and nutritionists assistance

All in all, most of the research studies concluded that providing nutritional information on the menu may help customers makes healthier eating choices. Nevertheless, most of the available studies were undertaken in the developed countries with non -looking at Malaysian restaurant contextually setting. With this gap, the present study empirically investigates Malaysian customer perception on the importance of providing the nutritional information in full service restaurants menu and how it contributes to their purchase decisions. This study sought to examine the general perception of Malaysian customer toward nutritional information in the restaurant menu. In addition to compare and contrast the perception based on customer gender as well as to assess what are the most important nutrients to be included in the menu?

2. Methodology

A self reported experience through a questionnaire survey was opted in this study. The populations were among customers who had experience dining at full service restaurants. These restaurants were chosen as they are one of the fastest growing types of restaurants in Malaysia and to have received customers that are concerned about the types of food offer in the menu (Euromonitor, 2008). Shah Alam city was used as contextual setting for data collection. However, despite a large number of full service restaurant customers in this city area, only eights restaurants were given permission for the researchers of undertaking the survey in their premises with the rest refused as they do not entertain any solicitation other than business.

The survey questionnaire was divided into three major sections. Each section contained questions addressing the variables suit to the research objectives. Section A comprised five questions using nominal scale and focused on respondent demographic profile. Fifteen items were used in section B to assess the general perception of Malaysian restaurant customers toward providing nutritional information in the restaurant menu. Respondents were required to translate their view on a five type Likert scale ranging from 1 with “totally disagree” to 5 “totally agree”. Eight items in section C used to measure the importance nutrients to be included in the restaurant menu using scale ranging from 1 with “No Important at all “ and 5 “Very Importance”.

The survey was undertaken on four weekends including Friday and customers were approached after they had lunch at the respective full service restaurants. The information on the anonymity and confidentiality was provided through the information sheet attached to the questionnaire. This information sheet provided the details about the researcher, the aim of the study and the purpose of the survey to be conducted. With absent of obvious problems, a total of 160 usable questionnaires were obtained.

3. Results and Discussions

3.1. Characteristics of the Sample

55.0 % (n=88) of the respondents were female compared to 45.0 % (n = 72) male. 47 % (n= 76) were between 26 to 40 years old, followed by 33.8 % (n = 54) who were between 41 to 50 years of age as opposed 18.8% (n= 30) were under 25 years. The highest proportion of the respondents were Malays accounted for 54.4 % (n = 87) as opposed to 25.0 % (n = 40) Chinese, 17.5 % (n = 28) Indian and the smallest proportion (3.1 %, n= 5) were others. Sample also showed that 46.3 % (n= 74) of the respondents were government servants, 27.5 % (n= 44) were among the private employees, 16.9 % (n=27) students of higher institutions and 9.4 % (n= 15) were self employed. The frequency of visits by

customer to the restaurants is also shown that 47.5 % (n= 76) dined twice a month, followed by 28.1 % (n= 45) around three times a month, 15% (n= 24) dined once a month and 9.4 % (n=15) dine four times in a month.

3.1.1. Customer Perceptions

The descriptive statistic looking at the mean score was applied in examining the respondents' perception towards nutritional information. The respondents' scores are presented in Table 1.

Table 1. Showing the mean scores on the perception of restaurant customers towards nutritional information

Item No.	Items	n	Mean (M)	S.D
1.	Providing nutritional information in the menu is important for me	160	3.82	1.174
2.	I believed nutritional information help me determine the nutrition intake when I dine at restaurant.	160	4.24	.830
3.	I am interested in looking for nutritional information of menu items in a restaurant.	160	3.93	1.088
4.	I intent to pay attention to nutritional information while choosing a menu item in a restaurant.	160	3.77	1.047
5.	I could not care less whether the restaurant having nutritional information or not.	160	2.42	1.262
6.	I am quite knowledgeable about nutritional information	160	3.68	.975
7.	I feel confident about my ability to comprehend nutritional information on the menu.	160	3.59	1.190
8.	I am confident in using nutritional information	160	3.82	1.031
9.	I will always be looking for nutritional information of menu items in a restaurant in future.	160	3.97	.985
10.	I would like to see additional nutritional information about menu items in a restaurant in the future	160	3.95	1.089
11.	I would not buy the product without high nutritional information in the future.	160	3.84	1.186
12.	Restaurant should accurately tell nutritional information in the menu	160	4.03	.928
13.	I believe nutritional information should not be misleading.	160	3.95	1.014
14.	Percentages on nutritional information could be sufficient to provide how much of a given ingredients a food product contain.	160	3.76	1.000
15.	I believe it is quite costly for restaurateur to include nutritional information in the menu.	160	4.67	1.032

It is observed that majority of the customers perceived providing nutritional information in the restaurant menu is important (M= 3.82) as it can help them in determine the nutrition intake (M= 4.24). They were in agreement that interested in looking (M= 3.93) and intent to pay attention to it when choosing a menu item. These strong feelings perhaps best explained through their disagreement to the item "I could not care less whether the restaurant having nutritional information or not" with the mean score (M=2.42). It is also interesting to note that majority of restaurant customers in this study clearly expressed themselves of being knowledgeable about nutritional information (M= 3.68), having ability to comprehend nutritional information on the menu (M=3.59) and confident in using nutritional information (3.82). This is evident when they were in agreement to all these items. With these notions it was not surprising that they will always be looking for nutritional information of menu items in a restaurant in future (M= 3.97), would like to see additional nutritional information on the menu items (M= 3.95) and would not buy the products without nutritional information in the future (M=3.84). In addition, majority

of the customers believed that restaurants should accurately tell nutritional information in the menu ($M=4.03$), not misleading them ($M=3.95$) and providing percentages on nutritional information could be sufficient ($M=3.76$). Despite these, customers totally agree that it is quite costly for restaurateur to include nutritional information in the menu. ($M= 4.67$).

These findings indicate that customers generally having high expectations on providing nutritional information in the full service restaurant menu. This contention is in line with other researchers' findings (Thomas and Mills, 2008) that nutritional information on restaurant menu has been gaining popularity in world today as customers are getting knowledgeable, practice a better lifestyle and more health conscious particularly on eating out food.

3.1.2. Comparison Perception Based on Gender

It was envisaged that when gender was used in the instrument, there would be a greater likelihood of the female to be more concerned on nutritional information than the males' counterpart. Given this, the Independent t- test procedure was utilized to identify if there were any statistically significant differences between those responses. Table 2 reports the results from this analysis.

Out of fifteen items, ten showed statistically significant differences between females and males customers. Female customers have given greater level of agreement ($M= 4.19$, $p = .000$) than male ($M=3.44$) on the important of providing nutritional information in the full service restaurant menu and believe it will help them in determine the nutrition intake ($M= 4.52$, $p= .000$ compared to $M= 3.95$ for male). Similarly, female customers agree that they were interested in looking for nutritional information of the menu items ($M= 4.19$, $p= .002$ as opposed to $M= 3.65$ for male) and intent to pay attention on it while choosing a menu item in a restaurant ($M= 4.05$, $p= .000$ compared to $M= 3.46$ for male). With such feelings, female customers were also reported themselves as somewhat more agreeing that they were quite knowledgeable about nutritional information ($M= 3.61$, $p= .037$) than the male customers ($M= 3.03$), confident about their ability to comprehend nutritional information on the menu ($M= 3.53$, $p= .009$ compared to 3.04 for male) and in fact they were more confident in using nutritional information ($M= 3.56$, $p=.011$ as opposed to $M=3.18$ for male). Female customers' strong feelings were further supported by their somewhat higher agreement that they will always be looking for nutritional information of menu items in the future ($M= 4.14$, $p= .000$ compared to $p= 3.58$ for male), would like to see additional nutritional information ($M=4.19$, $p= .000$ compared to $p= 3.27$) and would not buy the product without nutritional information in the future ($M= 4.07$, $p=.011$ compared to $M=3.09$ for male). Together these points might suggest that female is slightly more concerned than the males' counterpart on certain elements related to nutritional information in the full service restaurants.

Table 2. Showing mean scores for items reported by male and female respondents with standard deviation, t-test results and levels of significance

No.	Items	Gender	Mean (M)	S.D	t-value	Sig 2-tail
1.	Providing nutritional information in the menu is important for me	M	3.44	1.325	-4.234	.000
		F	4.19	.868	-4.202	
2.	I believed nutritional information help me determine the nutrition intake when I dine at restaurant.	M	3.95	.938	-4.593	.000
		F	4.52	.594	-4.556	
3.	I am interested in looking for nutritional information of menu items in a restaurant.	M	3.65	1.247	-3.165	.002
		F	4.19	.838	-3.142	
4.	I intent to pay attention to nutritional information while choosing a menu item in a restaurant.	M	3.46	1.203	-3.680	.000
		F	4.05	.773	-3.651	
5.	I could not care less whether the restaurant having nutritional information or not.	M	2.60	.902	2.453	.055
		F	2.56	.863	2.451	
6.	I am quite knowledgeable about nutritional information	M	3.03	1.019	-1.842	.037
		F	3.61	.917	-1.838	
7.	I feel confident about my ability to comprehend nutritional information on the menu.	M	3.04	1.200	-2.652	.009
		F	3.53	1.141	-2.650	
8.	I am confident in using nutritional information	M	3.18	1.125	-1.702	.011
		F	3.56	.923	-1.696	
9.	I will always be looking for nutritional information of menu items in a restaurant in future.	M	3.58	1.063	-3.724	.000
		F	4.14	.818	-3.705	
10.	I would like to see additional nutritional information about menu items in a restaurant in the future	M	3.27	1.028	-4.005	.000
		F	4.19	.922	-3.997	
11.	I would not buy the product without nutritional information in the future.	M	3.09	1.164	-2.580	.011
		F	4.07	1.172	-2.581	
12.	Restaurant should accurately tell nutritional information in the menu	M	4.06	1.159	-2.245	.056
		F	4.09	.594	-2.221	
13.	I believe nutritional information should not be misleading.	M	4.04	1.066	-.247	.805
		F	4.06	.968	-.247	
14.	Percentages on nutritional information could be sufficient to provide how much of a given ingredients a food product contain.	M	4.01	.818	-3.712	.154
		F	4.04	.837	-3.713	
15.	I believe it is quite costly for restaurateur to include nutritional information in the menu.	M	3.76	.956	-1.547	.124
		F	3.78	.775	-1.541	

Despite slightly difference on certain aspects, both gender customers however sharing similar levels of agreement on the other items used in the instrument. This can be seen from the magnitude of the mean scores which also showing no statistically significant differences. Both male and female customers in agreement that full service restaurant should accurately tell nutritional information in the menu (M= 4.09 for female and M=4.06 for male, $p = .056$), should not be misleading the nutritional information (M= 4.06 for female and M= 4.04 for male, $p = .805$) and could be sufficient of providing percentages of food

product contain ($M=4.04$ for female and $M= 4.01$, $p= .154$ for male). To express their concerned both genders rejected the idea that they do not care less whether the restaurant having nutritional information or not. The rated mean score might explain their level of disagreement ($M= 2.56$ for female and $M= 2.60$, $p= .055$ for male). Analysis also revealed that male and females strongly believed and sharing the same views that quite costly for restaurateur to include nutritional information in the menu ($M= 3.78$ for female and $M= 3.76$ for males, $p = .124$). In sum, these results fits quite well with the idea that both male and female despite realising a slight burden for restaurateurs to place nutritional information in the menu but still demand and attentive about it.

3.1.3. The Importance Nutrients

Table 3 demonstrates the mean score and the standard deviation for each item given by customers. As can be seen, calories ($M= 4.29$), protein ($M=4.29$), fat $M= 4.22$) and dietary fibre ($M= 4.17$) appeared to be the most four important nutrients perceived by customers to be included in the menu. Majority of customers however just ascribed slightly important to nutrients like carbohydrates ($M= 3.38$), cholesterol ($M=3.30$), salt ($M=3.20$) and sugar ($M=3.36$). This finding indicates that customers generally have high expectations on the availability of at least four common nutrients if that would be possible to be included in the menu. In other words, customers probably get use to these nutrients which were normally highlighted in packaged, canned food and beverage products.

Table 3. Showing the mean scores on the important nutrients to be included in restaurant menu

Item No.	Items	n	Mean	S.D
1.	Calories	160	4.29	.756
2.	Protein	160	4.29	.772
3.	Fat	160	4.22	1.246
4.	Dietary fibre	160	4.17	.818
5.	Carbohydrates	160	3.38	1.253
6.	Cholesterol	160	3.30	1.228
7.	Salt	160	3.20	1.109
8.	Sugar	160	3.36	1.167

4. Implication and Conclusion

Results of this study demonstrate that there is an awaking of nutritional awareness among the Malaysian restaurant customers. Majority of restaurant customers positively perceived the important of providing nutritional information in the full service restaurant menu. Although, presently many of the Malaysian restaurant customers are believed not having such experience in the full service restaurant, providing nutritional information on restaurant menu is more likely to be accepted by them in year to come and it availability will directly influence their future purchase decision. Result also revealed that the common highlighted nutrients in food retail products like calories, protein, fat and dietary fibre are the minimum customers desire information in the restaurant menu. As with other studies, female customers were found to be slightly concerned than males customers on certain elements related to nutritional information. This is not surprising as female by nature are slightly picky than male's customers with regard to food and they are also consider by many scholars as a gatekeeper role in providing the meal and meal solution for the families.

The above scenario highlights several important points which warrant discussion. The changing in customer attitudes through educational knowledge has led to the increased in healthier eating including the restaurant food and others foodservice operation. As nutritional information on the packaged, canned food and beverage products have been used for quite sometimes; full service and other types of restaurant operators sooner or later will be facing a tremendous pressure from the customers or probably government in providing that information in the menu. This is evident when some of the established and world recognised fast restaurants in the globe including Malaysia even only on selected nutrients have started to make nutritional information available in their menu board owing to accusation of providing unhealthy food. The full service restaurant in Malaysia therefore should start to equip themselves with nutritional knowledge as they most likely to be one of the targeting types of restaurants after the fast food despite some might argue that restaurant is not about health but all about profit.

As a conclusion, it is hoped that the recommendations and information flow from this study will facilitate restaurant operators with valuable information on the future customer concern because managing customers' needs is becoming an important and critical area as the world economy progressively turns to a service orientation. Finally, investigation on the willingness, constraints and obstacles on providing the nutritional information from Malaysian full service restaurant operators perspectives need to be further explored.

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References

- Adams, A., & Ferrett, V. (1997). Customers' perception of actual nutritional status of their lunch-time sandwiches. *British Food Journal*, 99 (103), 71-375.
- Basset, M.T., Dumanosky, T., Huang, C., Silver, L.D., Young, C., Nonas, C., Matte, T.D., Chideya, S., & Frieden, T.R., (2007). Purchasing behaviour and calorie information at fast food chain in New York city, *American Journal of Public Health*, 98 (8), 1457-1459.
- Burton, S, and Creyer, E.H. (2004). What consumers don't know can hurt them: consumer evaluations and disease risk perceptions of restaurant menu items. *Journal of Consumer Affairs*, 38 (1), 121-145.
- Conklin, M.T., Cranage, D.A., & Lambert, C.U. (2005). Nutrition information at point of selection affects food chosen by high school students. *Journal of Child Nutrition & Management*, 20 (2), 97-108.
- Consumer Affairs. (2009). Many consumers misread nutrition panels. Retrieved from http://www.consumeraffairs.com/news04/2009/06/nutrition_panel.html.
- Cranage, D.A., Conklin, M.T., & Lambert, C.U. (2004). Effect of nutrition information in perceptions of food quality, consumption behavior and purchase intentions. *Journal of Foodservice Business Research*, 7, 43-61.
- Dennison, D., Dennison, K.F., & Frank, G. C. (1994). The DINE System: Improving food choices of the public. *Journal of Nutrition Education*, 26(2), 87-92.
- Drydale, J.A., & Galipue, J.A., (2008). Profitable menu planning. (4th edition). New Jersey: Pearson.
- Euromonitor. (2008). Consumer foodservice in Malaysia. Global Market Information Database, February.
- Gopalan, C. (1992). *Undernutrition: measurement an implication*. (In) Osmani S.R, (ed) Nutrition and poverty. New York: Oxford University Press: 17– 48.
- Hwang, J., & Lorenzen, C. L. (2008). Effective nutrition labeling of restaurant menu and pricing of healthy menu. *Journal of Foodservice*, 19(5), 270-276.
- King, M. (2006). Role of biology lipids. Retrieved from <http://web.indstate.edu/thcme/mwking/lipids.html>.

- Kozup, K.C., Creyer, E. H., & Burton, S. (2003). Making healthful food choices: the influence of health claims and nutrition information on consumers' evaluations of packaged food products and restaurant menu items. *Journal of Marketing*, 67, 19-34.
- McVety, P.J., Ware, B. J., & Lévesque, C., (2001). *Fundamentals of menu planning*. (2nd edition) . Canada: John Wiley & Son.
- Ministry of Health. (2006). National plan of action for nutrition of Malaysia 2006-2015. National Coordinating Committee on Food and Nutrition.
- Ophardt, C. E. (2003). Overview of Lipid Function. Retrieved from <http://www.elmhurst.edu/~chm/vchembook/620fattyacid.html>.
- Scofield, H., & Mullainathan, S. (2008). The psychology of nutrition messages. *Advances in Health Economics and Health Services Research*, 19, 145-172.
- Thomas, L., & Mills, J. E. (2006). Consumer Knowledge and Expectations of Restaurant. *Journal of Foodservice*, 17 (1), 6-22.
- Thomas, L., & Mills, J. E. (2008a). Assessing customer expectations of information provided on restaurant menus. *Journal of Hospitality & Tourism Research*, 32 (1), 62-88.
- Thomas, L., & Mills, J. E. (2008b). Assessing customer expectations of information provided on restaurant menus. *Journal of Hospitality & Tourism Research*, 32 (1), 62-88.
- University of California, Berkeley and California Center for Public Health Advocacy. Center for Weight and Health. Potential impact of menu labeling of fast foods in California. Retrieved from <http://www.publichealthadvocacy.org/menulabeling.html>.
- Yamamoto J.A., Yamamoto J.B., Yamamoto B.E., et al.(2005). Adolescent fast and restaurant ordering behaviour with and without calorie and fat content menu information. *Journal of Adolescent Health*, 37(5), 297–402.