Identifying the Customers' Acceptance Levels towards Healthy Cakes at Hypermarkets in Klang Valley, Malaysia

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Abstract

With the rising of chronic diseases worldwide, healthy food is becoming an option. Consumers are becoming more selective and food ingredients are one of the concern. Food producers need to cater the demand by providing healthier foods. With regard to the current issue, a study was conducted to identify customer acceptance towards healthy cakes. A set of questionnaire was given to the customers at five different locations of the well-known hypermarket in the Klang Valley area, Malaysia. The analysis was done using SPSS version 12.0 statistical software. Significant relationship was found for both affective and cognitive aspects in determining the customer acceptance of healthy cakes. Functional aspect of the food has been shown to be the most influential contributor in determining customer's acceptance towards healthy cakes. Thus, we could conclude that healthy foods may have potentials to be explored further and would have greater demands by the public.

Keywords: Healthy cakes, Customer acceptance, Affective aspects, Cognitive aspects, Functional foods, Malaysia

1. Introduction

Cakes are an example of desserts that are widely consumed worldwide. Cakes are normally rich in sugar and also fats. Several studies have shown that cakes may contribute to breast cancer (Tavani et al., 2006; Franceschi et al., 1997). Other than sugar, trans-fat in cakes also may contribute to the development of other chronic diseases such as heart disease, high blood pressure and obesity (Ascherio et al., 1997). Consumers nowadays are concerned of their health status. Health-promoting aspects of foods have been one of the factors that can influence consumer's food choices (Asp, 1999; Rozin et al., 1999; Torjusen et al., 2001). They are more interested in nutritious, healthy and convenient foods (Sloan, 2003). The foods taken are expected to improve state of health and well being. The most common term to reflect such function is known as "functional food" (Ashwell, 2002). Dimensions such as healthiness, taste, pleasure, security and familiarity are several terms to describe consumers' attitudes towards functional foods (Urala & Lahteenmaki, 2004; Urala et al., 2003; Poulsen, 1999). However, other than knowledge and socio-demographic factors, price and lack of information may hinder consumers to purchase functional foods (Verbeke, 2005). Affective aspects of the foods also have been reported to affect consumer's food choices (Gibson, 2007; Sitjema et al., 2007). In order to fully exploit market opportunities, therefore, it is important to understand the determinants of consumer's acceptance of healthy foods (Grunert et al., 2000; Weststrate et al., 2002; Van Kleef et al., 2002) with regards to affective and cognitive aspects.

The research has two major objectives. The first objective of this study is to investigate customer's acceptance towards healthy cakes in the Klang Valley, Malaysia. The second objective is to identify the determinants that may influence the marketability of the healthy cakes in the Klang Valley.

2. Methodology

One known hypermarket with many outlets throughout Malaysia and has the intention to market healthy products has been identified as a location for sampling. Ten outlets of the respective hypermarket were identified in the Klang Valley area. However, due to time constraints, only five outlets with the most number of populations were targeted as the selected area of study. Disproportionate stratified random sampling was then adopted in this study. A total of 200 respondents were gathered from all the selected outlets.

A questionnaire which was adopted from Sijtsema et al. (2007) was used as an instrument to gain information for this study. The questionnaire consists of 29 questions that are comprised of demographic information, variables of affective aspect (sensory aspect, emotional aspect, social aspect and symbolic), cognitive aspect (physiological consequences, functional aspect and extrinsic aspect) and customer acceptance. A five-point Likert scale ranging from "totally disagree" to "totally agree" was used to measure the responses for all the sections studied, except for the demographic section.

The data gathered were then subjected to analysis using statistical package for social sciences (SPSS) Version 12. Other than descriptive statistics, independent t-test and one way analysis of variance (ANOVA) were used for analyses. Independent t-test was opted for comparison of means and multiple regressions to examine the determinants of healthy cakes acceptance among the customer. One-way ANOVA) with Tukey post hoc test was also used to compare the mean scores for ages of respondents to all the variables measured.

3. Results and discussion

The Cronbach's alpha value for the questionnaire designed was 0.921 thus indicating that the questionnaire was highly acceptable and reliable. The value for each aspect was in the range of 0.82 to 0.96 except for emotional and extrinsic aspects of the food. The emotional and extrinsic aspects have a lower Cronbach's alpha value that is 0.57 and 0.651, respectively.

3.1 Characteristics of respondents

The characteristics of the respondents were presented in Table 1. More than half of the respondents were female (54%). In general, it seems like female are mainly responsible for food purchases in the Klang Valley. With respect to age, the respondents were mostly from the 20 – 35 years old (54.5%) and relatively more married (51%) completed the survey compared to single respondents. Majority of the respondents have at least high school certificates: 5.5 per cent have SRP/PMR, 31 per cent have SPM/STPM, 36 per cent have their diploma, and 26.5 per cent have a degree qualification. Only one per cent of the respondents did not obtain the certificates. Majority of the respondents worked at the private sectors (34%), and earned an income more than RM2000.

3.2 Descriptive statistics

Table 2 presents the mean scores, standard deviations and correlations of the components included in determining the healthy cakes acceptance among the customers of the selected hypermarket. All mean scores are presented on a five-point scale (1 to 5) and are positively scaled. All the items measured are significantly correlated to one another except for the correlation between the extrinsic and symbolic aspects of foods. The r-values obtained for all the correlations were approximately in the low and moderate ranged. The extrinsic aspect was found not to significantly correlate to the symbolic factor. The extrinsic aspect of the foods was the least to be considered by the customer when they purchased the healthy cakes (r = 0.203) and also when it was further correlated to other aspects. The findings thus indicate that both the affective and cognitive aspects of foods are interrelated. The consumers would consider all aspects including convenience, naturalness, health benefits and prices, before making any decision prior to purchasing foods (Sijtsema et al., 2007; Gibson, 2007; Von Alvensleben, 2001).

Functional aspect of the healthy cakes has the strongest r-value (r = 0.802) compared to other affective and cognitive aspects. At 95% confidence interval, the value has a significant (p < 0.05) and strong relationship with the customer acceptance level. Functional aspect of the foods is therefore known as one of the most influential contributor (r = 0.802) in determining the healthy cakes demand. The health aspects of foods have been reported to affect consumers' foods selection (Lennernas et al., 1997; Torjusen et al., 2001; Sloan, 2003). Other than healthiness, dimensions such as taste, pleasure, security and familiarity also were found to describe consumer's attitudes towards functional foods (Urala & Lahteenmaki, 2004; Urala et al., 2003; Poulsen, 1999). The functional properties of food may contribute to the trend in the food industries (Rozin et al., 1999; Asp, 1999)

although price and lack of information could be the potential barriers (Verbeke, 2005; Bareham, 1995). Consumers who have trust in the food industry are more likely to buy functional foods compared to those who do not have trust in the food industries (Siegrist et al, 2008).

The same findings were obtained for the affective aspects. All the affective aspects measured were significantly related and have moderate to low r values. The r-values for each of the affective aspects were 0.372 for the sensory aspect, 0.281 for the emotional aspect, 0.333 for the social aspect, and 0.378 for the symbolic aspect. The emotional aspect was shown to be the least to be considered by the customers with regards to the affective aspects. The findings in this study as in accordance with Gibson's study (2007) where affective aspects such as mood and emotions, can influence food choices for a variety of reasons. Emotion and sensory aspects are difficult to measure due to lack of tangible product to judge (Sijtsema et al., 2007). Sensory is normally used by consumers as indicators of quality and acceptance (Mcilveen & Buchanan, 2001). A change in sensory capabilities therefore can influence one's food preference or selection (Schiffman et al., 1997). However, if this sensory aspect is proactively used and strategized well, it may help to develop products with maximum acceptance levels and repeated purchases (Mcilveen & Armstrong, 1996).

Independent sample t-test also showed that gender was not significantly affected the customer acceptance of the healthy cakes ($t(198) = -1.225$, $p > 0.05$). Surprisingly this finding was not in accordance with a study done by Wardle and her colleagues (2004). Wardle et al. (2004) reported that women are more concerned of the health. They are more likely to dieting and have stronger belief in healthy eating. Wu and his colleagues (2009) also concluded that gender differences often differ in knowledge and beliefs that are related to healthy life, and therefore considerations should be given for the differences when it comes to health beliefs, health behaviours, and health promotion. However, the sensory ($t(198) = -5.183$, $p < 0.05$) and social ($t(198) = -4.745$, $p < 0.05$) aspects of the foods were shown to be significantly affected by gender. According Verbeke (2006), females are more ready to compromise on taste for health compared to males. However, in this study, the healthy cakes acceptance was found not to be significantly influenced by gender ($t(200) = -1.352$, $p > 0.05$). In terms of the cognitive aspects, the physiological ($t(198) = -3.134$, $p < 0.05$) and extrinsic ($t(198) = -2.251$, $p < 0.05$) aspects of foods were also found to significantly influence by the gender of the consumers. Convenience, which is part of an extrinsic aspect, has been reported to greatly influence female customers' satisfaction (Rodgers & Harris, 2003).

Other than gender, age groups also were significantly affecting the customer acceptance of the healthy cakes ($F(3) = 4.356$, $p < 0.05$). There were few studies that have related age to food consumption and selection (Bareham, 1995; Solomon, 1996; McNeal & Yeh, 2003). Age has been identified as one of the main focus in determining the food choices (Verbeke, 2004; Verbeke, 2006). In this study, the Post Hoc Tests analysis revealed that three different age groups: age group below 20 years (mean difference= -0.545, p=0.002), 20 years to 35 years (mean difference= -0.344, p=0.030) and 46 years and above have a significant value with mean difference=0.545, p=0.002) were significantly affecting the healthy cakes demand. Age group of 36 to 45 years old however, was found not to significantly affecting the demand for the healthy cakes. One of the aspects that may influence healthy cakes acceptance is a sensory aspect. The sensory aspect of food is also much related to ageing process (Schiffman et al., 1979). This is because as peoples are getting older, the senses may degenerate. A decline in sensory capability is seen to affect the physiological aspect of foods (Caroline, 2000) which later may influence the food choices (Shepherd and Farleigh, 1986). The functional aspect of food may become the strongest positive determinant of willingness to compromise on taste among elderly, however, the level of willingness to compromise on taste may decrease over time (Verbeke, 2006).

3.3 Determinants of Customer Acceptance towards Healthy Cakes

The acceptance and intention of a consumer to purchase foods are linked to consumption and the purchase process (Schutz, 1999). Multiple regression analysis was opted in order to identify the determinants of customer's acceptance towards healthy cakes. A model is later regressed with the determinants which comprise of the affective and cognitive aspects. From seven aspects showed in Table 6 below, only functional aspect was shown to be a significant determinant in influencing the customer's acceptance towards healthy cakes. Thus, these findings can be used by the healthy cakes producers to fully exploit market opportunities (Grunert et al., 2000; Weststrate et al, 2002; Van Kleef et al., 2002) and at the same time, helping the consumers fulfilling their health consciousness. By providing foods with greater healthiness, the manufacturers should expect greater acceptance by the customers who have positive attitudes towards the healthiness of food consumed (Roininen et al., 1999). In this study, this expectation could be indicated by the coefficient of variance value obtained. The resulting coefficient of variance ($R^2 = 0.652$) indicates that 65% of the variance in customer acceptance of healthy food was explained by the affective and cognitive factors.

The resulting coefficient estimates found for each aspect could then be used to develop a hypothesized model. Figure 1 represents the hypothesized model in understanding the determinants of customer acceptance towards healthy cakes.

4. Conclusion

In conclusion, the suggested theoretical framework is acceptable since there are significant relationship between the independent variables and dependent variable. Both affective and cognitive aspects are closely correlated to one another. These two aspects were shown to significantly affecting customer's acceptance towards healthy cakes. The food manufacturers should look into both aspects when measuring perception of consumers towards certain food products. Based on the findings in this study and also as reported elsewhere, food manufacturers should give special attention to the functional aspect of food. It has shown that the functional aspect has the strongest r-value and significantly related to customer's acceptance level. Malaysian consumers in Klang Valley area are more concerned of their health and therefore they would opt for the functional aspects of the foods during purchasing of foods. Other than the functional aspect of foods, consideration also should be given to the affective aspects of the food. Although the r-value of each affective aspect was low, the relationship between the affective aspects and the acceptance level was significant. Gender was shown to significantly affecting the sensory, social, physiological and extrinsic aspects of food despite their acceptance towards healthy cakes. Other than gender, the sensory aspect has been shown to affect the acceptance of healthy cakes amongst elderly.

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Table 1. Demographic Profiles of the Respondents

Variable	Categories	Frequency	Percentage (%)
Gender	Male	92	46.0
	Female	108	54.0
Ages	Below 20 yrs	26	13.0
	20-35 yrs	109	54.5
	36-45 yrs	44	22.0
	46 yrs above	21	10.5
Education	SRP/PMR	11	5.5
	SPM/STPM	62	31.0
	Diploma	72	36.0
	Degree	53	26.5
	Others	2	1.0
Occupation	Government sector	36	18.0
	Private sector	68	34.0
	Self employ	35	17.5
	Pensioner	11	5.5
	Student	50	25.0
Income	RM500-RM999	1	.5
	RM1000-RM1999	28	14.0
	RM2000-RM2999	62	31.0
	RM3000 above	48	24.0
	Others	61	30.5
Race	Malay	123	61.5
	Indian	27	13.5
	Chinese	50	25.0
Status	Single	93	46.5
	Married	102	51.0
	Widower	2	1.0
	Widow	3	1.5
	Total	200	100.0

Table 2. Means, standard deviations (SD) (all on five-point scales) and correlations for the measured constructs

	Mean	SD	1	2	3	4	5	6	7
1. ustomer acceptance	3.70	0.531							
2. ensory	3.71	0.514	0.372*						
3. motional	3.50	0.447	0.281*	0.513*					
4. ocial	3.36	0.451	0.333*	0.521*	0.505*				
5. ymbolic	3.45	0.479	0.378*	0.438*	0.436*	0.560*			
6. hysiological	3.90	0.580	0.394*	0.543*	0.299*	0.367*	0.380*		
7. unctional	3.63	0.519	0.802*	0.473*	0.366*	0.416*	0.421*	0.541*	
8. xtrinsic	4.31	0.670	0.203*	0.321*	0.213*	0.175*	0.133	0.447*	0.324*

Notes: * $p < 0.05$, $n = 200$

Table 3. Multiple regression predicting determinant for healthy cakes acceptance at the selected hypermarket, for the total sample ($n = 200$)

	B	β	t	p (F)	R^2
Constant	.821		3.448	.001	
Affective aspect					
Sensory aspect	.017	.017	.285	.776	.652
Emotional aspect	-0.30	-.026	-.478	.633	
Social aspect	-0.22	-.019	-.329	.742	
Symbolic	.080	.072	1.318	.189	
Cognitive aspect					
Physiological consequences	-.049	-.054	-.922	.358	
Functional aspect	.845	.825	15.142	.000*	
Extrinsic aspect	-.037	-.047	-.964	.336	

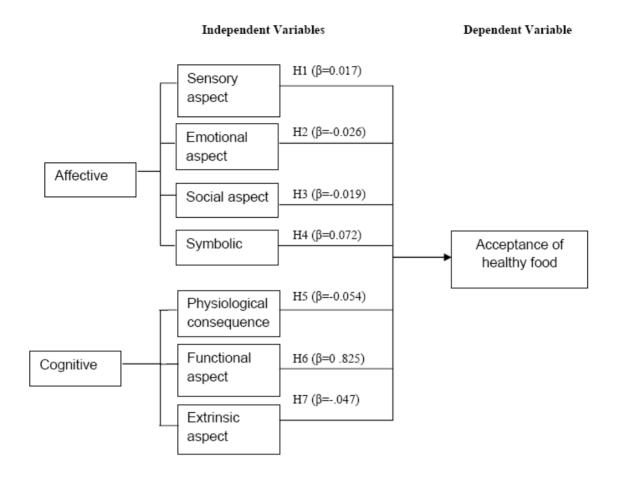Notes: * $p<0.05$, $n = 200$

Figure 1. Hypothesized model constructed based on Multiple Regression Analysis in identifying determinants for customer's acceptance towards healthy cakes