An Exploratory Factor Analysis Approach on *'Kafeteria Sihat'* Patronisation

Abdul Rais Abdul Rahman[1], Chemah Tamby Chik[1], Mohd Salehuddin Mohd Zahari[1], Ernawati[2]

[1]Faculty of Hotel & Tourism Management, Universiti Teknologi MARA Selangor, Puncak Alam Campus, Malaysia
[2]Fakultas Pariwisata dan Perhotelan, Universitas Negeri Padang, Indonesia

Abstract

In order to combat the continuously high prevalence of non-communicable diseases (NCD), government health agencies throughout the world have implemented intervention programmes such as the healthy cafeteria programmes at hospital to cultivate healthy eating practice. In Malaysia, this programme is known as '*Kafeteria Sihat'*. This study aims to validate a newly developed questionnaire to measure food quality, service elements, staff competency, certification, perceived value, eating behaviour, satisfaction and post purchase behaviour in the context of *'Kafeteria Sihat'* and identify the underlining factors in each of the dimensions and constructs. Eleven public hospitals in Selangor and Putrajaya, Malaysia were visited for survey purpose. Data were analysed through frequency test, internal reliability and an exploratory factor analysis (EFA) as part of the goodness of measure. Each variable recorded acceptable Cronbach alpha and fulfil the minimum requirements for the EFA thus all variables were retained. A total of 49 items were retained and 8 items were removed due to low loading factors. Validation of the questionnaire will enable a more rigorous analysis mainly to evaluate possible inter-relationship amongst each variable.

Keywords: Healthy Cafeteria, 'Kafeteria Sihat' Attributes, Perceived Value, Eating Behaviour, Satisfaction, Post Purchase Behaviour, Factor Analysis

Introduction

Unhealthy eating practices has long been associated of being the catalyst for the continuously rising prevalence of non-communicable diseases (NCD) such as obesity, diabetes, and hypertension globally (Azizan, Sapawi, & Kuan, 2016; Burgoine, Forouhi, Griffin, Wareham, & Monsivais, 2014; Harel, Goldberg, Harel, Cram, & Bell, 2015; Ministry of Health, 2010). Scholars often contended that those who constantly consume meals away from home were more susceptible to NCDs (Cram, Nallamothu, Fendrick, & Saint, 2002; Sahud, Binns, Meadow, & Tanz, 2006; Tarro et al., 2017; Wu & Sturm, 2014). The World Health Organization (2015) reported that in 2014, the global statistics showed more than 1.9 billion adults, above the age of 18 years old, were overweight. Out of the 1.9 billion adults, over 600 million were obese.

More alarming fact is that unhealthy food has also become an issue of concern in hospital cafeterias (Harel et al., 2015). Several hospitals in Australia, Canada and the US have been criticized for selling unhealthy food in which does not reflect the image of a healthcare institution that sells and promote healthy food (Bell et al., 2013; Cram et al., 2002; Dunfield, 2014; Freedhoff & Stevenson, 2008; Harel et al., 2015). There were also criticisms about some hospitals allowing fast-food franchises to operate inside the hospital premises (Anonymous, 2005; Auer, 2006; Sahud et al., 2006).

The implementation of the healthy cafeteria initiatives as intervention programmes is one of many steps taken by many world government health agencies to combat NCD. These programmes' main purposes is to cultivate healthy and safe eating practices amongst healthcare workers and public by offering a wide varieties of healthy staple foods, fresh fruits and low-calorie snacks as well as limiting the options for comfort foods (Bell et al., 2013; Dawson, Dwyer, Evers, & Sheeshka, 2006; Donohoe Mather & McGurk, 2014; Moran, Krepp, Johnson Curtis, & Lederer, 2016; Wojcicki, 2013).

Similarly, in Malaysia the prevalence of NCD continues to be high (Ministry of Health, 2010; Mustapha et al., 2014) as the prevalence of obesity, diabetes, high blood cholesterol and hypertension were within the range of 17.5% to 30%. Based on the Malaysian National Health and Morbidity Survey 2015 (Ministry of Health, 2015). More than 70% of deaths occurring at public hospitals are due to NCD thus shows this is a serious problem despite the government spending billions towards healthcare yet fatality rates are still at an alarming rate (Ministry of Health, 2016a, 2016b) . As an effort to encourage the growth of healthy theme foodservices which in turn will cultivate healthy eating practices amongst the public and potentially reducing the rate of NCD, the Ministry of Health of Malaysia launched its own version of the healthy cafeteria program known as '*Kafeteria Sihat*' (Ministry of Health, 2016a). The overall aim of this initiative is to improve the food quality and promote healthy eating practices at cafeteria premises beginning with the public hospitals throughout Malaysia.

The concept of a '*Kafeteria Sihat*' is a 'One -Stop Centre' that govern attributes of nutritious, clean and safe food, healthy services and staffs as well as operational certification. In this sense, food served does not contain excessive amount of salt, sugar, oil, colouring, artificial flavouring with approved convenient ingredients (Ministry of Health, 2016a). The conducive service environment is emphasized to educate and promote healthy eating practice through participative and hands-on approach.

The association between foodservice attributes including food quality (Chang, Suki, & Nalini, 2014; Soriano, 2002; Sulek & Hensley, 2004), service elements (Edwards & Meiselman, 2005; MacLaurin & MacLaurin, 2000), staff competency (Adam, Adongo, & Dayour, 2014; Clemes, Gan, & Sriwongrat, 2013) and certification (Ha & Jang, 2010; Haghighi, Dorosti, Rahnama, & Hoseinpour, 2012; Kim, Lee, & Yoo, 2006) towards customers' decision to eat, satisfaction as well as repurchasing intention has been extensively investigate in the commercial foodservice setting. Perceived value has been found to play a moderating role between foodservice attributes especially food and service qualities against satisfaction and repurchasing intention (Caruana, Money, & Berthon, 2000; Ryu & Han, 2010). Meanwhile, satisfaction is often

function as an antecedent or a mediator to post-purchase behaviour (Han & Ryu, 2009; Jones & Suh, 2000; Kandampully & Suhartanto, 2000; Oliver, 1999; Sun & Kim, 2013; Tian-Cole, Crompton, & Willson, 2002).

Past studies looking at the healthy hospital cafeteria only measured up to the level of satisfaction from the respondents base on food and service elements present at the cafeteria(Bell et al., 2013; Dawson et al., 2006; Kimathi, Gregoire, Dowling, & Stone, 2009; Lee & Park, 2015; Patsch, Smith, Liebert, Behrens, & Charles, 2016), influence of eating behaviour (Haugaard, Stancu, Brockhoff, Thorsdottir, & Lähteenmäki, 2016a, 2016b) as well as customer's nutrition knowledge and perception (Azizan et al., 2016).

This study aims to validate a newly developed questionnaire that is tailored towards measuring food quality, service elements, staff competency, certification, perceived value, eating behaviour, satisfaction and post-purchase behaviour and identify the underlining factors in each of the dimensions and constructs. Items relating to each variable were both self-developed and adapted from past research particularly in the commercial foodservice to suit the current study. As these items have never been measured in the context of *'Kafeteria Sihat'*, it is necessary to conduct a validity and reliability test as part of the goodness of measure.

Academically and practically, it is hoped that the development of a new validated tool will enable potential replication or adaptation for future academic studies relating to *'Kafeteria Sihat'* or healthy cafeteria in general at government offices, universities, private sector as well as government link companies either locally or abroad.

Literature Review
The Rational of Having 'Kafeteria Sihat' Initiative in Public Hospitals
It is reported in the Malaysian National Health and Morbidity Survey 2015 that the prevalence of obesity has reached 17.7% which equates to approximately 3.3 million; Type 2 diabetes at 17.5% which equates to approximately 3.5 million; high blood cholesterol at 47.7% which equates to 9.6 million; and hypertension at 30%, which equates to 6.1 million adult Malaysians (Ministry of Health, 2015).

As an effort to diversify the foodservice market for healthy food premises and encourage healthy food consumption which could potentially reduce the high prevalence of NCD, the Malaysian Ministry of Health launched its own version of the healthy cafeteria programme known as '*Kafeteria Sihat'* in 2012(Ministry of Health, 2015, 2016a). This initiative is one of the lifestyles intervention programs for that community, and part of the first National Strategic Plan for Non-Communicable Diseases under the 12th National Key Economic Area launched by the Prime Minister of Malaysia in 2009 (Ministry of Health, 2010, 2016a). Later on, the '*Kafeteria Sihat*' was integrated into the third National Plan of Action For Nutrition Malaysia NPANM (Ministry of Health, 2016b). From a total of 4 indicators in NPANM III, the '*Kafeteria Sihat*' has been integrated into the ecosystem under the second indicator: Promoting Healthy Eating and Active Living and fourth indicator Preventing and Controlling Obesity and Other Diet-related Non-Communicable Diseases (NCD).

'*Kafeteria Sihat*' is defined as a premise that serves and sells food and beverages which are healthy, clean, safe and complies with good hygienic practices (Ministry of Health, 2016a). It also serves as a medium to promote healthy eating practices, encourage the cooperation between the Ministry of Health and cafeteria operators in promoting healthy food that are safe for consumption as well as training and educating cafeteria operators on healthy food preparation techniques. Generally, a '*Kafeteria Sihat*' would provide healthy food and beverage choices on the menu, being compliance with food quality and safety standards established by the Ministry of Health.

The Relationship Between Perceived Value, Eating Behaviour, Satisfaction and Post-Purchase Behaviour in the Foodservice Setting

There are numerous factors known to significantly influence customers' decision to eat, satisfaction and repurchasing intention which often include food quality (Chang et al., 2014; Soriano, 2002; Sulek & Hensley, 2004), service elements (Edwards & Meiselman, 2005; MacLaurin & MacLaurin, 2000), staff competency (Adam et al., 2014; Clemes et al., 2013) and certification (Ha & Jang, 2010; Haghighi et al., 2012; Kim et al., 2006).

Scholars advocated that perceived value would often play a moderating role between foodservice attributes especially food and service qualities against satisfaction and repurchasing intention (Caruana et al., 2000; Ryu & Han, 2010) and in a few cases plays a mediating role (Patterson & Spreng, 1997). The relationship between perceived value, satisfaction, and behavioural intentions have been theoretically and empirically justified (Gill, Byslma, & Ouschan, 2007). The theoretical justification for the relationship can be observed in Ajzen and Fishbein (1980) attitude/behaviour framework, which suggests that cognition leads to affect, which in turn derives behavioural outcomes.

Eating behaviour characteristics was found to have the potential in predicting meal satisfaction at worksite cafeterias (Haugaard et al., 2016a). Higher disinhibition and lower hunger scores resulted in high satisfaction ratings for food quality and food variety. Furthermore, customers with higher disinhibition would prefer a wide variety of food to choose from compared to those with high restraint score who are less concern about the amount of dish offer and would prefer fewer food offerings(Haugaard et al., 2016b).

A vast number of scholars would often advocate that satisfaction is an antecedent to post-purchase behaviour (Han & Ryu, 2009; Jones & Suh, 2000; Kandampully & Suhartanto, 2000; Oliver, 1999; Sun & Kim, 2013; Tian-Cole et al., 2002). It is particularly believed to have a significant influence on post-purchase behaviour (Anderson & Sullivan, 1993; Cronin & Taylor, 1992; Keaveney, 1995; Oliver, 1980; Oliver & Swan, 1989) in which positive satisfaction of services or products will encourage re-purchase as well as positive word-of-mouth effects (Han & Ryu, 2009; Jones & Suh, 2000; Kandampully & Suhartanto, 2000; Oliver, 1999; Sun & Kim, 2013; Tian-Cole et al., 2002). Meanwhile, negative satisfaction would lead to customer complaints (Oliver, 1980), rejecting the product or service outright thus customers would less likely repurchase at that restaurant nor would they recommend to others (Adebanjo, 2001; Susskind, 2002; Pratten;2004 Iglesias and Guillén;2004).

Conceptual Framework

Having identified the variables upon reviewing the relevant literatures, the variable of interest (dependent) in this study is customers post-purchase behaviour and the predictor variable (independent) are the four '*Kafeteria Sihat*' attributes consisting of Food Quality, Service Elements, Staff Competency and Certification (Abdul Rais, Chik, & Zahari, 2018). Meanwhile, perceived value functions as the moderating variable while eating behaviour and satisfaction functions as the mediating variables. The proposed framework is illustrated in **Figure 1**.
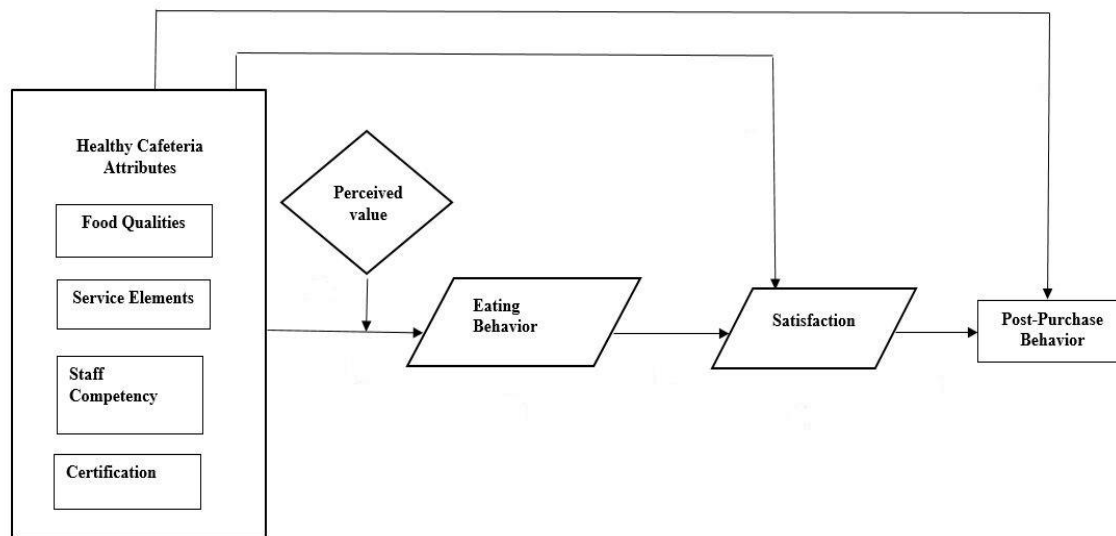
Questionnaire Structure

Data were collected using questionnaires which is divided into six major sections. Each section contained questions and items addressing each construct. These items were self-developed as well as adapted from past study relating to healthy cafeteria (Azizan et al., 2016; Dawson, 2003; Kimathi, 2008), eating behaviour (Cappelleri et al., 2009; Tholin, Rasmussen, Tynelius, & Karlsson, 2005) and restaurant related studies (Ryu & Han, 2010; Ryu, Han, & Jang, 2010; Ryu, Han, & Kim, 2008). Some modification made to the item structure in order to suit the context of the current research. Section A comprises of respondent's demographic profile such as age, gender, education level, frequency of visiting hospital and occupation. Section B comprises of items relating to the independent variables which focus on 4 attributes of '*Kafeteria Sihat*'. Section C consists of items to measure the perceived value as the sole moderating variable. Section D comprises of items to evaluate customers' eating behaviour as the first mediating variable while section D measure customer satisfaction as the second mediating variable. Meanwhile items in section F measures the customers' post purchase behaviour as the dependent variable. Five-point Likert scale is used in measuring items in all construct from section B to F ranging from 1= strongly disagree to 5= strongly agree.

Data Collection

Eleven *'Kafeteria Sihat'* premises at the public hospitals in Selangor and Putrajaya, Malaysia were visited for survey purposes from November 2017 to early January 2018. A total of 600 randomly selected patrons consisting of visitors and hospital workers were chosen to answer the set of questionnaires. However, 30 were omitted due to incomplete response.

Therefore, the number of completed response was 570. Patrons were approach during breakfast, lunch and dinner period after they completed their meal. Both verbal and written explanation about the research was given. Those who agree to participate were invited to fill a consent form before beginning the survey. Upon completing the survey, the participants given token of appreciation.

Statistical Analysis

Data from the questionnaires were analysed in IBM SPSS Statistics 24.0 using frequency test, reliability test through Cronbach alpha, and an exploratory factory analysis (EFA). All items were analysed for internal reliability to ensure each dimension recorded a minimum threshold Cronbach alpha value of at least .60 as suggested by scholars (Cohen, Manion, & Morrison, 2013; Creswell, 2009; Hair, Black, Babin, Anderson, & Tatham, 2006; Hair, Celsi, Ortinau, & Bush, 2008; Huck, Cormier, & Bounds Jr, 1974; Nunnally, 1978). As each item in the construct of this study either newly developed or adapted and have never been validated in the '*Kafeteria Sihat*' context, it is necessary to undergo an Exploratory Factor Analysis (EFA) as part of goodness of measure (Hair, Black, Babin, Anderson, & Tatham, 2010; Sekaran & Bougie, 2016). The factor analysis is also essential in understanding the underlying structure in the data matrix, identifying the most parsimonious set of variables and shrink a large number of items to a much smaller set of underlying factors that summarized the essential information contained in the variables (Hair et al., 2006). Six assumptions are needed to be considered upon undertaking an Exploratory Factor Analysis (Blaikie, 2003; Hair et al., 2010; Neill, 2008) which are; a). Eigenvalues more than 1; b). Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy values must exceed .50; c). Minimum requirement of factor loading is .60 based on .05 or 95% significance level; d). Bartlett's test of spherite is at least significant at .05; e). Communalities of items must be greater than .50; and f). Anti-image correlation of items is greater than .50.

Results and Discussion

Respondent Profile

The *'Kafeteria Sihat'* respondent profile is compiled in Table 1 consisting of 6 demographic categories which are customer category, age groups, gender, ethnicity, education background and occupation. Base on the information obtained, it can be summarized that: hospital staff are outweighing the visitors dining at the hospital *'Kafeteria Sihat'*; majority of the respondents dining at *'Kafeteria Sihat'* are in among the working-class age; larger proportion of female respondents dining at *'Kafeteria Sihat'* compared to male would suggest that females are more health cautious when it comes to choosing food for consumption; proportion of staff in the hospital clearly indicate Malay ethnicity far outnumber ethnicity; those who patron at *'Kafeteria Sihat'* would at least have a tertiary qualification.

Table 1
 Respondent Profile

	Frequency (*n*)	Percentage (%)
Customer category		
Visitor	182	31.9%
Hospital Staff	388	68.1%

Age groups		
Under 20 years old	16	2.8%
20 to 25 years old	216	37.9%
26 to 35 years old	204	35.8%
36 to 45 years old	70	13.7%
46 to 55 years old	40	7%
Above 56 years old	16	2.8%
Gender		
Male	202	35.4%
Female	368	64.6%
Ethnicity		
Malay	446	78.2%
Chinese	72	12.6%
Indian	44	7.7%
Bumiputera Sabah and Sarawak	8	1.4%
Education Background		
Secondary school	108	18.9%
Certificate	22	3.9%
Diploma	136	23.9%,
Bachelor's degree	288	50.5%
Masters/PhD	16	2.8%
Occupation		
Government servant	318	55.8%
Private sector	60	10.5%
Self-employed	5	8.8 %
Students	142	24.9%

Consumption Pattern of 'Kafeteria Sihat' Customers

Customers' consumption pattern at *'Kafeteria Sihat'* are compiled in Table 2. These patterns comprise of factors including the availability of alternative food premise nearby, frequency of visit to the hospital amongst visitors, frequency of dining at '*Kafeteria Sihat'* amongst staff, and meal periods at *'Kafeteria Sihat'*. Through the information obtained, it can be summarized that: most hospitals in this study indeed have alternative eateries available nearby other than *'Kafeteria Sihat'*; majority visitor in this study would have experience coming to the hospital at least 5 times; hospital staff would have the tendency to eat at the *'Kafeteria Sihat'* at least once a week; staff who patronized more than 6 times are likely working in different work shifts throughout the week; the popular time for patrons to dine at *'Kafeteria Sihat'* is during the morning and afternoon as compared to the evening and night; smaller volume of customers at night is the rationale for *'Kafeteria Sihat'* not extending their business beyond 9 pm.

Table 2
Consumption Pattern of 'Kafeteria Sihat' Customers

	Frequency (*n*)	Percentage (%)
Availability of nearby eateries other than 'Kafeteria Sihat'	398	69.8
Yes	172	30.2
No		
Frequency of visits to the hospital (*n*=182)		
2-3 times	38	20.4
4-5 times	38	20.4
5-6 times	22	11.8
more than 6 times	88	47.3
Frequency dining at 'Kafeteria Sihat' within a week amongst staff (*n*=388)		
1-5 times	304	78.4
6-10 time	68	17.5
11 or more	16	4.1
Consumption period		
Breakfast	252	44.2
Lunch	460	80.7
Afternoon Tea	100	17.5
Dinner	50	8.8

Internal Reliability

The data obtained from the questionnaires were tested for reliability and validity. In order to examine the extent to which a variable or set of variables are consistent in what it is intended to measure (Hair et al., 2008). Cronbach alpha coefficients was calculated on 51 likert scale items in the questionnaires from 570 subjects based on 8-research dimensions which comprises of food quality, service elements, staff competency, certification, perceived value, eating behaviour, satisfaction. Table 3 below shows the output of the reliability test.

Table 3
Alpha Coefficient of internal reliability for each section of the questionnaire

Section	Dimension	Alpha score	Number of Variables	Number of Case
B1	Food Quality	.881	7	570
B2	Service Elements	.824	6	570
B3	Staff Competency	.859	7	570
B4	Certification	.963	7	570
C	Perceived Value	.929	7	570
D	Eating Behaviour	.851	7	570
E	Satisfaction	.942	8	570

F	Post Purchase Behaviour	.901	8	570

Every dimension recorded Cronbach alpha scores between .851 to .963 which is well above the minimum threshold of .60 as suggested by various scholars (Cohen et al., 2013; Creswell, 2009; Hair et al., 2006; Hair et al., 2008; Huck et al., 1974; Nunnally, 1978) thus shows a very good strength of association (Hair et al., 2008) hence is deemed suitable for empirical analysis.

Factor analyses for Independent, Dependent, Moderating and Mediating Variables

The exploratory principal component factor analysis with varimax rotation was employed to 57 items in the independent, moderating, mediating, and the dependent variables in this study that are; i). food quality, service elements, staff competency and certification are the independent variables, ii). Perceived Value as moderating variable, iii) Eating Behaviour and satisfaction as the mediating variables iv) Post Purchased Behaviour as the dependent variable. Full result of the exploratory factor analysis is compiled in Table 4.

All 5 variables recorded a Kaiser-Meyer-Olkin (KMO) value above .90 ('*Kafeteria Sihat*' attributes=.937; Perceived Value=.916; Eating Behaviour=.940; Satisfaction=.938; Post Purchase Behaviour=.920) which far exceed the minimal value of .50 (Blaikie, 2003; Hair et al., 2008; Neill, 2008). The 4 dimensions representing '*Kafeteria Sihat*' attributes showed acceptable eigenvalue (certification=12.911, food quality=2.095, service elements=1.593, staff competency=1.315) similar to Perceived Value (4.932), Eating Behaviour (5.646), Satisfaction (5.706), and Post-Purchase Behaviour (4.967). Bartlett's Test of Sphericity for 'Kafeteria Sihat' attributes (Approx. Chi-Square= 12635.248, $p<.001$), Perceived Value (Approx. Chi-Square = 30494.440, $p<.001$), Eating Behaviour (Approx. Chi-Square=4294.807, $p<.001$), Satisfaction (Approx. Chi-Square = 3692.298, $p<.001$) and Post Purchase Behaviour (Approx. Chi-Square=2949.686, $p<.001$) were significant indicating the significance of the correlation matrix and thus factor analysis undertaken was appropriate.

All four dimension in *'Kafeteria Sihat'* attributes explained 66.3% of total variance, which is an acceptable range (Tabachnick & Fidell, 1996). The other 4 variables also recorded an acceptable range for total variance (Perceived Value=70.4%, Eating Behaviour=80.6%, Satisfaction=71.3%, Post Purchase Behaviour=62.1%). Seven items from *'Kafeteria Sihat'* were removed due to loading factor below .60. These items were related to: 'freshness of ingredients at *'Kafeteria Sihat'* (food quality); 'role of calorie labels in facilitating appropriate food consumption'(food quality);'cutleries and trays in good condition'(service elements); 'tables and chairs are in good condition' (service elements); 'staff wearing apron during work' (staff competency); 'staff covering head throughout operation' (staff competency); 'staff handle food using appropriate utensil'(staff competency). Only one item relating to 'customers not wanting to visit *'Kafeteria Sihat'* again' from Post Purchase Behaviour.

Table 4

Factor analyses for Independent, Dependent, Moderating and Mediating Variables

Variable	Factors and Items Included	Factor Loading
'Kafeteria Sihat Attributes (Independent)	*Certification*	
	I am confident about having my meal at 'Kafeteria Sihat' upon seeing the certification on display.	.799
	I believe that the 'Kafeteria Sihat' certification ensures me that the food are made from wholesome ingredients.	.784
	I believe that the 'Kafeteria Sihat' certification ensures me that the food prepared have high nutritional value.	.779
	I have trust towards the 'Kafeteria Sihat' because the certification is from a creditable organization (Ministry of Health).	.777
	I believe that the 'Kafeteria Sihat' certification ensures me that the food served is safe for consumption.	.771
	I believe 'Kafeteria Sihat' certification ensures me that the food served are at the highest quality.	.766
	I believe 'Kafeteria Sihat' certification ensures me that good service is being provided.	.757
	% variance explained = 22.054, Eigenvalue = 12.911	
	Food Quality	
	I believe food served at the 'Kafeteria Sihat' taste good.	.712
	I believe that Food at 'Kafeteria Sihat' are portioned in appropriate quantity.	.703
	I believe food served at 'Kafeteria Sihat' are presented in a pleasant appearance.	.694
	I believe that 'Kafeteria Sihat' serves adequate selection of healthy food choices.	.688
	I believe that food at 'Kafeteria Sihat' are served at the right temperature.	.603
	% variance explained = 17.735, Eigenvalue = 2.095	

Table 4

Factor analyses for Independent, Dependent, Moderating and Mediating Variables (Cont.)

Variable	Factors and Items Included	Factor Loading
	Service Elements	
	Providing a weighing scale and a height scale at 'Kafeteria Sihat' is a good effort to help customer monitor their ideal Body Mass Index.	.721
	Health posters and pamphlet on display near the counters and wall inside the 'Kafeteria Sihat' are helpful for me in making healthy food selection.	.718
	Health posters and pamphlet on display are near the counters and wall inside the 'Kafeteria Sihat' helpful for me in making balanced food selection.	.675
	Having a separate counter for seasoning (salt & pepper) and condiments at 'Kafeteria Sihat' enables me to control the amount inside my food.	.601
	% variance explained = 13.906, Eigenvalue = 1.593	
	Staff Competency	
	I don't not have to que too long when selecting the food and making payment.	.834
	I don't not have to que too long when making payment.	.802
	Drinks are prepared in a far efficient manner compared nearby food premises.	.756
	Food are prepared in a far efficient manner compared to nearby food premises.	.680
	% variance explained = 12.653, Eigenvalue = 1.315	
	Total Variance explained= 66.347%, KMO= .937 , Bartlett's Test of Sphericity= 12635.248*	
Perceived Value (Moderating)	*Perceived Value*	
	The service offered at 'Kafeteria Sihat' was worth the money.	.919
	The dining experience at 'Kafeteria Sihat' was worth the money.	
	The food quality at 'Kafeteria Sihat' is worth the value.	.885
	The staff are competent in serving customers in an efficient manner.	.866
		.807
	'Kafeteria Sihat' offers good value for the price.	
	The overall value of dining at 'Kafeteria Sihat' was high.	.798
	Having 'Kafeteria Sihat' certification from the Ministry of Health increases the value of dining there.	.795
		.795
	Total Variance explained=70.455%, Eigenvalue = 4.932, KMO=.916, Bartlett's Test of Sphericity= 3491.708*	
Eating Behavior (Mediating)	*Eating Behavior*	
	To control my weight, I choose to eat at 'Kafeteria Sihat'.	.916
	I dine at 'Kafeteria Sihat' whenever I am at the hospital.	.913
	I dine at 'Kafeteria Sihat' to develop healthy eating practices.	.912
	Despite having the option of another food premise nearby, I still prefer to dine at 'Kafeteria Sihat'.	.911
	I dine at 'Kafeteria Sihat' because my associates invited me to join them.	.907

Table 4

Factor analyses for Independent, Dependent, Moderating and Mediating Variables (Cont.)

Variable	Factors and Items Included	Factor Loading
Eating Behavior (Mediating)	*Eating Behaviour*	
	Despite having the option of another food premise nearby, I still dine at 'Kafeteria Sihat' because the food is healthier.	.891
		.835

	Health posters on the display encourages me to dine at 'Kafeteria Sihat'.	

Total Variance explained=80.655%, Eigenvalue = 5.646, KMO=.940, Bartlett's Test of Sphericity= 4294.807***

Satisfaction (Mediating)	*Satisfaction*	
	I am satisfied and really enjoyed myself at the 'Kafeteria Sihat'.	.890
	I am satisfied with food quality at 'Kafeteria Sihat'.	.862
	I am satisfied with service provided at 'Kafeteria Sihat'.	.860
	The overall feeling I got from 'Kafeteria Sihat' was satisfied.	.844
	I am satisfied knowing that the cafeteria has been given certification by the Ministry of Health Malaysia.	.841
	I was pleased to dine in at the 'Kafeteria Sihat'.	.837
	I am satisfied with the level of competency shown by the staff.	.826
	The overall feeling I got from 'Kafeteria Sihat' put me in a good mood.	.794

Total Variance explained=71.329%, Eigenvalue = 5.706, KMO=.938, Bartlett's Test of Sphericity= 3692.298***

Post Purchase Behavior (Dependent)	*Post Purchase Behavior*	
	I would recommend 'Kafeteria Sihat' to my associates.	.886
	I would like to revisit 'Kafeteria Sihat' again when I come back to the hospital.	.867
	I will talk about my good experience dining at 'Kafeteria Sihat' to my associates.	.861
	I would more frequently dine at 'Kafeteria Sihat' when I am at the hospital.	.838
	I will practice healthy eating habits that I learn at 'Kafeteria Sihat' when I eat elsewhere.	.820
	I would consider visiting another 'Kafeteria Sihat' if I visit another public hospital.	.811
	I would consider visiting another healthy cafeteria similar to the 'Kafeteria Sihat' concept elsewhere.	.751

Total Variance explained=62.090%, Eigenvalue = 4.967, KMO=.920, Bartlett's Test of Sphericity= 2949.686***

Implication & Conclusion

This study makes significant contributions to knowledge in relation to the better understanding of factors influencing customer's purchasing decision when visiting *'Kafeteria Sihat'* through a newly developed questionnaire. Result based on Cronbach Alpha scores and the Exploratory Factor Analysis (EFA) indicates that the questionnaire has shown acceptable reliability and validity thus, the data is fit for further analysis. From 57 items, the number was reduced to 49 after the exclusion of 8 items due to low loading factor scores. By administering descriptive statistics, it would enable a broad overview of the level of acceptance based on means scores in each construct. Furthermore, the confirmatory factor analysis (CFA) could be administered to test the adequacy of the proposed measurement model. Following this, a Structural Equation Modelling (CB-SEM) technique can measure the inter-relationship between each proposed dimensions and constructs along a structural path.

Acknowledgement

has been approved by the Medical Research and Ethics Committee under the Ministry of Health Malaysia with the approval number **NMRR 17-1569-37181 (IIR)** and is supported by the Department of Nutrition, Ministry of Health with the letter number **KKM 600. 31/2/3 Jld 2 (18).** The authors would also like to thank **Universiti Malaysia Terengganu** for providing full scholarship for this study.

Corresponding Author

Abdul Rais Abdul Rahman, Faculty of Hotel & Tourism Management, Universiti Teknologi MARA, Puncak Alam Campus, Selangor, Malaysia.
Email: rais_rahman85@hotmail.com

References

Abdul Rais, A. R., Chik, C. T., & Zahari, M. S. M. (2018). Do 'Kafeteria Sihat' Attributes influence Customers' Post Purchase Behaviour? *Journal of Tourism, Hospitality & Culinary Arts, 10*(1), 27-41.

Adam, I., Adongo, C. A., & Dayour, F. (2014). International Tourists' Satisfaction with Ghanaian Upscale Restaurant Services and Revisit Intentions. *Journal of Quality Assurance in Hospitality & Tourism, 16*(2), 181-201.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, New Jersey Prenctice-Hall.

Anderson, E. W., & Sullivan, M. W. (1993). The Antecedents and Consequences of Customer Satisfaction for Firms. *Marketing Science, 12*(2), 125-143.

Anonymous. (2005). Cleveland Clinic, McDonald's dispute creates questions for hospitals. *Health Care Strategic Management, 23*(1), 16.

Auer, H. (2006). Fast food franchises redefine 'hospital food'. *McClatchy - Tribune Business News*. Retrieved 1 March 2017, from http://search.proquest.com.ezaccess.library.uitm.edu.my /docview/463309119?accountid=42518

Azizan, A. A., Sapawi, D. K. A., & Kuan, C. Y. (2016). Nutrition Knowleddge And Customers Perception Towards Kafeteria SihatI Program In Kota KinabaluI Public Healthcare Foodservice. *Journal for Sustainable Tourism Development, 5*(1), 1-12.

Bell, C., Pond, N., Davies, L., Francis, J. L., Campbell, E., & Wiggers, J. (2013). Healthier choices in an Australian health service: a pre-post audit of an intervention to improve the nutritional value of foods and drinks in vending machines and food outlets. *BMC Health Services Research, 13*(492), 1-7.

Blaikie, N. (2003). *Analyzing quantitative data: From description to explanation*. London: Sage.

Burgoine, T., Forouhi, N. G., Griffin, S. J., Wareham, N. J., & Monsivais, P. (2014). Associations between exposure to takeaway food outlets, takeaway food consumption, and body weight in Cambridgeshire, UK: population based, cross sectional study. *BMJ : British Medical Journal, 348*, 1-10.

Cappelleri, J. C., Bushmakin, A. G., Gerber, R. A., Leidy, N. K., Sexton, C. C., Lowe, M. R., & Karlsson, J. (2009). Psychometric analysis of the Three-Factor Eating Questionnaire-R21: results from a large diverse sample of obese and non-obese participants. *International Journal of Obesity, 33*(6), 611-620.

Caruana, A., Money, A. H., & Berthon, P. R. (2000). Service quality and satisfaction – the moderating role of value. *European Journal of Marketing, 34*(11/12), 1338-1353.

Chang, M. L. D., Suki, N. M., & Nalini, A. (2014). A structural approach on students' satisfaction level with university cafeteria. *Asian Social Science, 10*(18), 202-209.

Clemes, M. D., Gan, C., & Sriwongrat, C. (2013). Consumers' Choice Factors of an Upscale Ethnic Restaurant. *Journal of Food Products Marketing, 19*(5), 413-438.

Cohen, L., Manion, L., & Morrison, K. (2013). *Research methods in education*. New York: Routledge.

Cram, P., Nallamothu, B. K., Fendrick, A. M., & Saint, S. (2002). Fast food franchises in hospitals. *JAMA, 287*(22), 2945-2946.

Creswell, J. W. (2009). *Mapping the field of mixed methods research*. Los Angeles, CA: SAGE Publications

Cronin, J. J., & Taylor, S. A. (1992). Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing, 56*(3), 55.

Dawson, J. (2003). *A Formulative Evaluation Of The Eat Smart! Workplace Cafeteria Program At St. Peter's Hospital.* (Master of Science), The University of Guelph.

Dawson, J., Dwyer, J. J., Evers, S., & Sheeshka, J. (2006). Eat smart! Workplace cafeteria program evaluation of the nutrition component. *Canadian Journal of Dietetic Practice and Research, 67*(2), 85-90.

Donohoe Mather, C. M., & McGurk, M. D. (2014). Insights in public health: Promoting healthy snack and beverage choices in Hawai'i worksites: the Choose Healthy Now! pilot project. *Hawai'i journal of medicine & public health : a journal of Asia Pacific Medicine & Public Health, 73*(11), 365-370.

Dunfield, A. (2014). Why Hospitals Can Survive and Thrive Without Fast Food. Retrieved 28 April 2017, from www.cdha.nshealth.ca/.../why-hospitals-can-survive-and-thrive-without-fast-food.pdf

Edwards, J. S. A., & Meiselman, H. L. (2005). The influence of positive and negative cues on restaurant food choice and food acceptance. *International Journal of Contemporary Hospitality Management, 17*(4), 332-344.

Freedhoff, Y., & Stevenson, R. (2008). Frying up hospital cafeteria food. *Canadian Medical Association Journal, 179*(3), 213-214.

Gill, D., Byslma, B., & Ouschan, R. (2007). Customer perceived value in a cellar door visit: the impact on behavioural intentions. *International Journal of Wine Business Research, 19*(4), 257-275.

Ha, J., & Jang, S. (2010). Effects of service quality and food quality: The moderating role of atmospherics in an ethnic restaurant segment. *International Journal of Hospitality Management, 29*(3), 520-529.

Haghighi, M., Dorosti, A., Rahnama, A., & Hoseinpour, A. (2012). Evaluation of factors affecting customer loyalty in the restaurant industry. *African Journal of Business Management, 6*(14).

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*. Ney Jersey: Prentice Hall

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis*. Eanglewood Hill: Prentice Hall

Hair, J. F., Celsi, M. W., Ortinau, D. J., & Bush, R. P. (2008). *Essentials of marketing research*: McGraw-Hill/Higher Education.

Han, H., & Ryu, K. (2009). The Roles of the Physical Environment, Price Perception, and Customer Satisfaction in Determining Customer Loyalty in the Restaurant Industry. *Journal of Hospitality & Tourism Research, 33*(4), 487-510.

Harel, Z., Goldberg, H., Harel, S., Cram, P., & Bell, C. M. (2015). The prevalence and characteristics of fast food outlets in Ontario hospitals. *Public Health, 129*(9), 1294-1296.

Haugaard, P., Stancu, C. M., Brockhoff, P. B., Thorsdottir, I., & Lähteenmäki, L. (2016a). Determinants of meal satisfaction in a workplace environment. *Appetite, 105*, 195-203.

Haugaard, P., Stancu, C. M., Brockhoff, P. B., Thorsdottir, I., & Lähteenmäki, L. (2016b). Objective measures of meal variety lacking association with consumers' perception of variety with self-selected buffet meals at work. *Food Quality and Preference, 51*, 123-129.

Huck, S. W., Cormier, W. H., & Bounds Jr, W. G. (1974). *T tests, one-way analysis of variance, and multiple comparison procedures*. New York: Harper Collins.

Jones, M. A., & Suh, J. (2000). Transaction-specific satisfaction and overall satisfaction: an empirical analysis. *Journal of Services Marketing, 14*(2), 147-159.

Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: the role of customer satisfaction and image. *International Journal of Contemporary Hospitality Management, 12*(6), 346-351.

Keaveney, S. M. (1995). Customer switching behavior in service industries: An exploratory study. *Journal of Marketing, 59*(2), 71-82.

Kim, W. G., Lee, Y. K., & Yoo, Y. J. (2006). Predictors of Relationship Quality and Relationship Outcomes in Luxury Restaurants. *Journal of Hospitality & Tourism Research, 30*(2), 143-169.

Kimathi, A. N. (2008). *Customer satisfaction with and gross profit of a worksite cafeteria healthful options food station.* (Masters), Rush University, Ann Arbor. Retrieved from http://search.proquest.com/docview/304331421?accountid=14645   ProQuest Dissertations & Theses Global database.

Kimathi, A. N., Gregoire, M. B., Dowling, R. A., & Stone, M. K. (2009). A Healthful Options Food Station Can Improve Satisfaction and Generate Gross Profit in a Worksite Cafeteria. *Journal of the American Dietetic Association, 109*(1), 914-917.

Lee, J., & Park, S. (2015). Consumer attitudes, barriers, and meal satisfaction associated with sodium-reduced meal intake at worksite cafeterias. *Nutrition Research Practice, 9*(6), 644-649.

MacLaurin, D. J., & MacLaurin, T. L. (2000). Customer perceptions of Singapore's theme restaurants. *The Cornell Hotel and Restaurant Administration Quarterly, 41*(3), 75-76.

Ministry of Health. (2010). *National Strategic Plan For Non-Communicable Disease NSPNCD*: Ministry of Health Malaysia.

Ministry of Health. (2015). *National Health & Mobility Survey 2015 Volume 2*. Putrajaya: Insitute of Public Health.

Ministry of Health. (2016a). *Garis Panduan Kafeteria Sihat* (2nd Edition ed.): Ministry of Health Malaysia.

Ministry of Health. (2016b). *National Plan of Action for Nutrition of Malaysia III 2016-2025*. Putrajaya: National Coordinating Committee on Food and Nutrition (NCCFN).

Moran, A., Krepp, E. M., Johnson Curtis, C., & Lederer, A. (2016). An Intervention to Increase Availability of Healthy Foods and Beverages in New York City Hospitals: The Healthy Hospital Food Initiative, 2010-2014. *Prev Chronic Dis, 13*(1), 1-7.

Mustapha, F. I., Omar, Z. A., Mihat, O., Md Noh, K., Hassan, N., Abu Bakar, R., Abd Manan, A., Ismail, F., Jabbar, N. A., Muhamad, Y., Rahman, L. A., Majid, F. A., Shahrir, S. N., Ahmad, E., Davey, T., & Allotey, P. (2014). Addressing non-communicable diseases in Malaysia: an integrative process of systems and community. *BMC Public Health, 14*(2), 1-6.

Neill, J. (2008). Writing up a factor analysis. *Retrieved September, 7*, 2008.

Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 460-469.

Oliver, R. L. (1999). Value as excellence in the consumption experience. *Consumer value: A framework for analysis and research*, 43-62.

Oliver, R. L., & Swan, J. E. (1989). Equity and disconfirmation perceptions as influences on merchant and product satisfaction. *Journal of Consumer Research, 16*(3), 372-383.

Patsch, A. J., Smith, J. H., Liebert, M. L., Behrens, T. K., & Charles, T. (2016). Improving Healthy Eating and the Bottom Line: Impact of a Price Incentive Program in 2 Hospital Cafeterias. *Am J Health Promot, 30*(6), 425-432.

Patterson, P. G., & Spreng, R. A. (1997). Modelling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: an empirical examination. *International Journal of Service Industry Management, 8*(5), 414-434.

Ryu, K., & Han, H. (2010). Influence Of The Quality Of Food, Service, and Physical Environment On Customer Satisfaction and Behavioral Intention In Quick-Casual Restaurants:Moderating Role Of Perceived Price. *Journal of Hospitality & Tourism Research, 34*(3), 310-329.

Ryu, K., Han, H., & Jang, S. (2010). Relationships among hedonic and utilitarian values, satisfaction and behavioral intentions in the fast-casual restaurant industry. *International Journal of Contemporary Hospitality Management, 22*(3), 416-432.

Ryu, K., Han, H., & Kim, T. H. (2008). The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions. *International Journal of Hospitality Management, 27*(3), 459-469.

Sahud, H. B., Binns, H. J., Meadow, W. L., & Tanz, R. R. (2006). Marketing fast food: impact of fast food restaurants in children's hospitals. *Pediatrics, 118*(6), 2290-2297.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*: John Wiley & Sons.

Soriano, D. R. (2002). Customers' expectations factors in restaurants. *International Journal of Quality & Reliability Management, 19*(8/9), 1055-1067.

Sulek, J. M., & Hensley, R. L. (2004). The Relative Importance of Food, Atmosphere, and Fairness of Wait: The Case of a Full service Restaurant. *Cornell Hotel and Restaurant Administration Quarterly, 45*(3), 235-247.

Sun, K.-A., & Kim, D.-Y. (2013). Does customer satisfaction increase firm performance? An application of American Customer Satisfaction Index (ACSI). *International Journal of Hospitality Management, 35*, 68-77.

Tabachnick, B., & Fidell, L. (1996). *Using Multivariate Statistics 3rd Edtion*. Boston: Allyn & Bacon.

Tarro, L., Aceves-Martins, M., Tinena, Y., Parisi, J. L., Blasi, X., Giralt, M., Llauradó, E., & Sola, R. (2017). Restaurant-based intervention to facilitate healthy eating choices and the identification of allergenic foods at a family-oriented resort and a campground. *BMC Public Health, 17*(1), 393.

Tholin, S., Rasmussen, F., Tynelius, P., & Karlsson, J. (2005). Genetic and environmental influences on eating behavior: the Swedish Young Male Twins Study. *The American journal of clinical nutrition, 81*(3), 564-569.

Tian-Cole, S., Crompton, J. L., & Willson, V. L. (2002). An empirical investigation of the relationships between service quality, satisfaction and behavioral intentions among visitors to a wildlife refuge. *Journal of Leisure research, 34*(1), 1-24.

Wojcicki, J. M. (2013). Healthy hospital food initiatives in the United States: time to ban sugar sweetened beverages to reduce childhood obesity. *Acta Paediatr, 102*(6), 560-561.

World Health Organization. (2015). Obesity and overweight. Retrieved 28 April 2017, from http://www.who.int/mediacentre/factsheets/fs311/en/

Wu, H. W., & Sturm, R. (2014). Changes in the energy and sodium content of main entrees in US chain restaurants from 2010 to 2011. *Journal of the American Dietetic Association, 114*(2), 209-219.