

# EXPLORING THE MEDIATING ROLE OF CONSUMER HEALTHY LIFESTYLE BETWEEN THE LINKAGES OF PRICE, PROMOTION, AND CONSUMPTION PATTERNS

Farouk Djermani, Universiti Utara Malaysia

Houcine Meddour, Universiti Utara Malaysia

Abdul Halim Abdul Majid, Universiti Utara Malaysia

## ABSTRACT

*This study aimed to examine the effects of price, promotion on the consumption patterns of healthy food and healthy lifestyle as well as to examine the mediating effects of healthy lifestyle between the specified linkages. A quantitative research design approach was selected where the questionnaire was formulated for primary data collection. The variables were measured using 22 items sourced from past studies. All the items were assessed using the five-point Likert Scale. 500 questionnaires were distributed to academicians from four Universities (UUM, UniMap, UPSI, USM) by using the random sampling technique. 357 responses were returned, representing a 71.4% response rate. The analysis method used were the partial least square (PLS 3) regression and descriptive methods. The findings indicate that consumer healthy lifestyle; promotion are significant predictors of consumption patterns. Meanwhile price shows no significant relationship with consumption patterns. The results of the mediation effects of a healthy lifestyle show that healthy lifestyle is a significant mediator between price, and promotion with consumption patterns. As Malaysian consumers exhibit serious concern towards healthy food consumption patterns, it is recommended that marketing managers focus their strategies on promotion, rather than the pricing for a healthier lifestyle in consumption patterns. The study also discusses the implications to various stakeholders, its limitation and recommendations for future studies.*

**Keywords:** Consumption Patterns, Price, Promotion, Healthy Lifestyle.

## INTRODUCTION

Consumption patterns refer to the behaviour of individuals and households when they decide to consume and purchase a product using their available resources (Lee, 2009). Consumption pattern in Islamic context to the way of using, eating, or drinking halal food/drinks or the amount that is used for the amount that is bought and used (Mat et al., 2020; Mat et al., 2018).

The consumption of healthy food items is considered healthy based upon its nutritional value. A variety of components are considered when evaluating nutritional value. The need for a study on healthy food consumption patterns in Malaysia is imperative because of the unhealthy lifestyle of many Malaysian. Malaysia is beleaguered with numerous long-standing problems, such as obesity and non-communicable diseases (NCDs) related to an unhealthy lifestyle.

Institute for public health found that NCDs have continuously become the main health problem in Malaysia. NCDs are the most prevalent, unpreventable and expensive to cure diseases; yet the situation has not improved.

The changes in a healthy lifestyle, the great impact of the marketing mix, and lack of following healthy eating recommendations contribute to unhealthy consumption patterns (Croll et al., 2001). Unhealthy eating habits have resulted in cases of obesity and non-communicable diseases (NCDs) (Hyseni et al., 2017; Salleh et al., 2015). The incidence of NCDs is also increasing among younger people (Islam et al., 2014). Due to the worrying number of people with NCDs, including obesity, in Malaysia, there is certainly a great deal of interest to investigate consumer behaviour towards healthy foods, such as functional foods, as well as their beliefs and perceptions whether some healthy foods or their components can indeed help in maintaining healthy wellbeing and reducing the risk of NCDs (Hyseni et al., 2017). Unhealthy lifestyle is associated with a poor diet (Yen & Tan, 2012). Many Malaysians have a lower intake of fruit and vegetables, particularly among lower-income consumers, and the median for both types of products is less than two times per day (Yen & Tan, 2012).

Price is the amount of money one must pay to obtain the right to use the product or service (Indumathi, & Dawood, 2016). The consumer price index (CPI) showed a steady rise from 95.4 per cent in the year 2000 to 119.6 per cent in 2017. Consumers had to pay a higher price to buy consumer products. Price is a major barrier to healthy eating around the globe (Saleem et al., 2016). It is a fundamental factor influencing purchasing decisions for low-income groups (Kearney, 2010; Ward, 2012). Price factor influences the choice of healthy food product consumptions rather than quality food (Hossain & Lim, 2016; Yen et al., 2011). Accordingly, the change in dietary patterns of natural food consumption is unaffordable for most people.

Promotion is regarded as an important factor that could influence healthy food consumption patterns. Promotion comprises advertising, salesforce, public relations, packaging, and any other signal that the firm provides about itself and its products (Indumathi, & Dawood, 2016). A lack of aggressive promotion for healthy food consumption is cited as a barrier to successful healthy food consumption (Chan et al., 2016). Marketing promotions of unhealthy foods made these foods trendy, eye-catching. However, the packaging of healthy food is not appealing and dull (Chan et al., 2016). advertisements for fruit and vegetables of healthy food are an important marketing strategy to promote the consumption of healthy food among Malaysian consumers (Muhammad & Othman, 2013). Therefore, the big impact of food and beverage companies' promotional marketing on consumer preferences can negatively shape nutrition and health outcomes but may also be leveraged to improve nutrition (Ali & Abdullah, 2017). The purpose of this paper is to investigate the effect of price and promotion factors on healthy food consumption patterns with mediation effect healthy lifestyle.

## LITERATURE REVIEW

### Consumer Healthy Lifestyle and Consumption Patterns

The importance of healthy food has been accepted in the food industry and among consumers, as they become more health-conscious, and more interested in healthier lifestyles. Accordingly, the food industry has developed functional food products with positive nutritional benefits and organic food using the recent advances in science and technological methods to prevent weight gain, improve health, and reduce the risk of chronic disease (Goetzke et al.,

2014). People with an advanced level in the economics of higher level of well-being are considered to have a and healthier lifestyle than those who consume less healthy food. In Islamic context the impact of health-related lifestyle behaviours is shaping his behavioural consumption of consumer (Mat et al., 2018; Djermani & Sulaiman, 2017).

The past empirical studies that investigated the direct relationship between consumer healthy lifestyle and consumption patterns (Andrews et al., 2017; Chen, 2009; Chen, 2011). Overall, the findings showed a significant positive. For instance, a positive significant relationship between healthy dietary lifestyle and consumption patterns on fruit and vegetables found a positive significant relationship between healthy dietary lifestyle and consumption patterns on functional food (Chen, 2011). Similarly, A positive significant relationship between healthy dietary lifestyle and consumption patterns on organic food (Chen, 2009). Overall, since many studies showed a significant relationship between healthy lifestyle and consumption patterns. The present study formulated the following hypothesis.

*H<sub>1</sub>: Consumer healthy lifestyle has positive relationship with consumption patterns of healthy food.*

### **Price and Consumer Healthy Lifestyle**

The significant relationship between price and consumer healthy lifestyle (Akter & Basher, 2014; Andrews et al., 2017; Rakic & Rakic, 2015). For example, tested in his model education and household income as predictors of healthy dietary lifestyle among USA consumers. Remarkably education demonstrated a positive with significant relationship with healthy lifestyle (Andrews et al., 2017). However, the income that is regarded as price factor in this study illustrated non-supported relationship with dietary lifestyle. In addition, the practice of healthy lifestyle is increasing, as the people in Malaysia are willing to pay more by increase their consumption towards healthy food (green food). This study showed a positive significant relationship between willing to pay for green food and healthy lifestyle. a significant positive relationship between price and healthy lifestyle (Rakic & Rakic, 2015). food prices played a significant role in boosting well-being (Akter & Basher, 2014).

*H<sub>2</sub>: Price has a significant positive relationship with consumer healthy lifestyle.*

### **Price and Consumption Patterns**

price as the amount of money one must pay to obtain the right to use the product (Indumath & Dawood, 2016). For instance, the consumption of products like fruit and vegetables will be low if the price is relatively high, particularly for low-income families (Andrews et al., 2017). The past studies had investigated the effect of price on consumption patterns had a positive significant relationship (AhmAd et al., 2016; Andrews et al., 2017; Green et al., 2013). For instance, referred to price by income among USA adults that have a positive significant relationship on consumption patterns of fruit and vegetables (Andrews et al., 2017). The price relationship on healthy food consumption patterns found a positive significant relationship (Green et al., 2013).

Despite, the positive link reported, other studies did not find such a significant relationship between price and consumption patterns. the price had no significant relationship to the seafood consumption patterns (Ahmad et al., 2016). Considering the above, the researcher postulates the following hypotheses:

*H<sub>3</sub>: Price has a significant positive relationship with consumption patterns of healthy food.*

### **Promotion and Consumer Healthy Lifestyle**

The study found that promotion was positively and significantly linked with a healthy lifestyle. The finding concurs with past studies (Rakic & Rakic, 2015; Rojas-Rajs & Soto, 2013). The result suggests that the popularity of healthy food stores that offer free home delivery significantly impacts a healthy lifestyle.

Current nutritional advances focus less on treatments and more on the role of nutrients, plant nutrients and other food ingredients in promoting health and preventing cancer, and heart disease, among other health concerns. The importance of different channel communication (e.g., word of mouth communications of families and friends, word of mouth communications of consumers, communications of schools and universities, communications of government and non-profit organisations, media, advertising, sales promotion, public relations) influenced positively on healthy lifestyle among 400 of Serbian consumers (Rakic & Rakic, 2015). For example, conceptually the impact of health communication of healthy lifestyle in American Latin (Rojas-Rajs & Soto, 2013). Thus, based on the above discussion, the researcher postulated the following hypothesis:

*H<sub>4</sub>: Consumers' healthy lifestyle has a positive relationship with promotion.*

### **Promotion and Consumption Patterns**

Promotion includes issues such as advertising, personal selling, sales promotion, public relations, and direct marketing. Distribution channels are the most critical questions about how an organisation can optimize a connection between inner and outer channels (Indumathi & Dawood, 2016). Promotion is an essential key for market exchange sales promotion, personal selling, public relations and direct marketing, which communicate the potential stakeholders. The sub-variables under promotion factor using offer coupon to encourage. Using free home delivery to encourage, popularity of the organic store as a distinguished shop, using members' ideas and proposals, giving discounts to regular buyers (Indumathi & Dawood, 2016).

The research also indicated that promotion had significant role influencing consumption patterns, other than price reduction, coupons or refunds given by retailers, other sales promotional tools such as free sampling and buy-one-get-one-free or in-pack premium item were found to be inducing consumers to purchase more of the product. As one of the main reasons promotion factors impacts the purchase decision of healthy food products were found that accessibility to healthy food and cheaper products influenced the consumption patterns of healthy food (Indumathi & Dawood, 2016). The past studies that demonstrated the positive relationship between promotion and consumption pattern of healthy food (Indumathi, & Dawood, 2016; Irfan et al., 2014; Nguyen et al., 2015). The research Nguyen et al. 2015 also indicated that promotion has a positive significant role in influencing consumption patterns. This study confirmed the impact of the promotion on healthy food consumption patterns among the Amsterdam consumers. Promotion aims to increase consumption more frequently with great quantity. price promotions have a significant positive impact to increase consumption patterns of certain healthy food products (Irfan et al., 2014). Based on the literature, the following hypotheses were developed as follows:

*H<sub>5</sub>: Promotion has a significant positive relationship with the consumption patterns.*

### **Consumer Healthy Lifestyle Mediates the Relationship between Price and Consumption Patterns of Healthy Food**

Price is one of the important determinants of the consumption patterns. However, limited studies have investigated this relationship, as shown in the past studies (Blackwell et al., 2006; Sulaiman & Djermani, 2017; Sulaiman et al., 2020). Furthermore, most studies proposed lifestyle as mediating variable between price and consumption patterns are conceptual. a conceptual model that examines the mediating effect of consumer lifestyle in the link between price, and consumer value, consumer motive, consumer preferences and consumption patterns (Sulaiman et al., 2014b). The mediation effect of consumer lifestyle on the link between price and consumption patterns (Sulaiman, & Djermani, 2017). Likewise, proposed a conceptual model of the mediation effect of lifestyle on the relationship between marketing effort components (price) and decision-making process that is referring to consumption patterns (Blackwell et al., 2006). Because of the scarcity of studies on the role of healthy lifestyle in the mediating the link between price and consumption patterns, more research is needed.

The more affordable healthy food distributed in the market would make people consume more fruits and vegetables. Therefore, people will avoid to consume red meat and will choose to consume fruits and vegetables in order to get more nutrition's in their daily life. Most people will take into account about the price when they consume the product, whether it is affordable or not. Thus, when they easily find affordable healthy food in the market, they would consume healthier food that consist of fruits and vegetables or a low salt diet. This situation would make people always buy healthy food product regularly. The following hypothesis was formulated:

*H<sub>6</sub>: Consumer healthy lifestyle mediates the relationship between price and consumption pattern of healthy food among Malaysian consumers.*

### **Consumer Healthy Lifestyle Mediates the Relationship between Promotion and Consumption Patterns of Healthy Food**

The mediation effect of consumer healthy lifestyle on promotion and consumption patterns has been rarely discussed in past empirical research in healthy food. (Blackwell et al., 2006; Chen, 2009; Sulaiman et al., 2014b).

A conceptual model with mediating role of consumer lifestyle effecting the link between marketing mix components such as promotion towards the consumer decision process by referring to the consumption patterns. Likewise, a conceptually a model of the effect of lifestyle as mediator between the marketing efforts components such as promotion under external factors towards decision-making process by referring to consumption patterns (Blackwell et al., 2006). a conceptual model with intervening variable of consumer lifestyle in influence the link between promotion and consumption patterns. Few past studies which investigated the mediation of healthy lifestyle in the link between promotion and consumption patterns, due to this the present study aims to investigate the mediating effect empirically (Sulaiman et al., 2014b). When people always get a discount from healthy food stores, they would avoid consuming food product with additives and avoid consuming processed food. This situation would make them to consume healthy food on the regular basis. When people served by home delivery on the healthy food product and easily to find the healthy food in the food store, they will reduce consuming red

meat or processed food because of its scarcity in the market. This condition would change people behaviour and decide to consume products that have more nutrition. Therefore, the hypothesis is suggested below. Therefore, the hypothesis suggested the statement below.

**H<sub>7</sub>:** *Consumer healthy lifestyle mediates the relationship between promotion and consumption pattern of healthy food.*

## METHODOLOGY

### Research Framework

Figure 1 depicts the research framework of this study based on the discussion of variables in literature review section. Based on the adapted research framework, there are seven hypotheses that have been formulated and labelled as H1, H2, H3, H4, H5, H6 and H7. The seven hypothesis are stated below:

**H<sub>1</sub>:** *Consumer healthy lifestyle has positive relationship with consumption patterns of healthy food.*

**H<sub>2</sub>:** *Price has a significant positive relationship with consumer healthy lifestyle.*

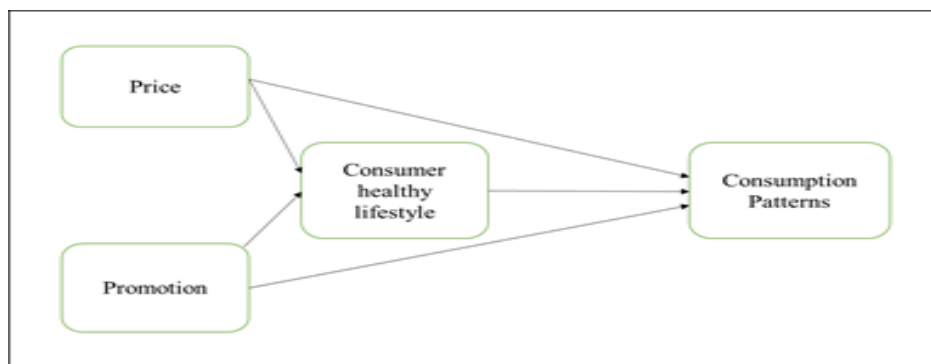
**H<sub>3</sub>:** *Price has a significant positive relationship with consumption patterns of healthy food.*

**H<sub>4</sub>:** *Consumers' healthy lifestyle has a positive relationship with promotion.*

**H<sub>5</sub>:** *Promotion has a significant positive relationship with the consumption patterns.*

**H<sub>6</sub>:** *Consumer healthy lifestyle mediates the relationship between price and consumption pattern of healthy food among Malaysian consumers.*

**H<sub>7</sub>:** *Consumer healthy lifestyle mediates the relationship between promotion and consumption pattern of healthy food.*



**FIGURE 1**  
**RESEARCH FRAMEWORK**

## Data Collection

In the current study, the questionnaire was distributed among the lecturers of higher education institutions of this study and includes Kedah, Perlis, Perak and Penang university lecturers, assistant professors, associate professors, and professors. Collection of data by using a systematic sampling technique of self-administered questionnaire. Respondents were aged more than 25 years and all academic staff. The total population number of academics in the northern part of Malaysia is 4940 the sample size 357 (Krejcie & Morgan, 1970). Thus, 500 questionnaires were distributed. In total, 357 respondents, yielding higher than 72 %. The survey took period of six-week period July up to September (2018), and questionnaire completed on the site.

## The Measurement of the Variable

The measurement of the variable consumption patterns on healthy general healthy food adapted (Lee, 2009). The measurement items of promotion as independent variable adapted (Indumathi, & Dawood, 2016). The price's items were adapted (Jayaraman et al., 2013). Accordingly, 5 Likert scale used for all the variables items, that ranges from "Strongly Disagree" (1) to "Strongly Agree" (5).

## ANALYSIS AND DISCUSSION

### Demographic Profile

Table 1 presented the demographic profile. The total sample of this study was 360 respondents. Respondent accounted for 49.2%, while females comprised 58.8%. The ages between 25 and 30 years old constituted 8.1% of the total respondents, 42% who are in the age range of 31 – 40 years old, while another 16.7% whose age are more than 51 years old. Most of the participants was married (75.3%) and Malay Muslim (81.7%). Majority of the respondents passed the tertiary education. Table 1 also indicated that 36.7 % of the participants serves as senior lecturers, while only 25.8% of them having more than 6 to 10 years of experience. In terms of their originality, the distribution between rural (30.0%) and urban (69.7%) was higher. Lastly, it was found that most of the participants earned more than RM 9,000 a month with 20.8%.

### Partial Least Square (PLS-SEM)

This study used PLS, Structural Equation Modelling (SEM). Importantly PLS-SEM gained more popularity in area Business and marketing. Literature has suggested PLS-SEM is an extensively acknowledged modelling practise since it is a nonparametric technique for testing research model (Fareed et al., 2016; Mohd Salleh et al., 2018). In addition, PLS-SEM is found to have good statistical power in handling single-item constructs. There are two steps of assessment of PLS. Assessment of measurement model and structural model.

## Measurement modal

Figure 2 is subjected to assess their construct reliability, convergent validity, and discriminant validity.

<b>Demographic Constructs</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Males	177	49.2
Females	183	50.8
<b>Age (years)</b>		
25-30 years old	29	8.1
31-40 years old	153	42.0
41- 50 years old	119	33.2
51 years old and above	59	16.7
<b>Occupation</b>		
Lecturer	107	29.7
Senior lecturer	132	36.7
Associate professor	84	23.3
Professor	18	5.0
Other position	19	5.3
<b>Region</b>		
Urban	251	69.7
Rural	109	30.3
<b>Income</b>		
Less than RM 5000	39	9.2
RM 5001- RM 6000	31	8.6
RM 6001- RM 7000	69	19.2
RM 7001- RM 8000	63	17.5
RM 8001-RM 9000	48	13.3
Rm 9001 -RM 10000	75	13.3
Over RM 10001	41	11.4

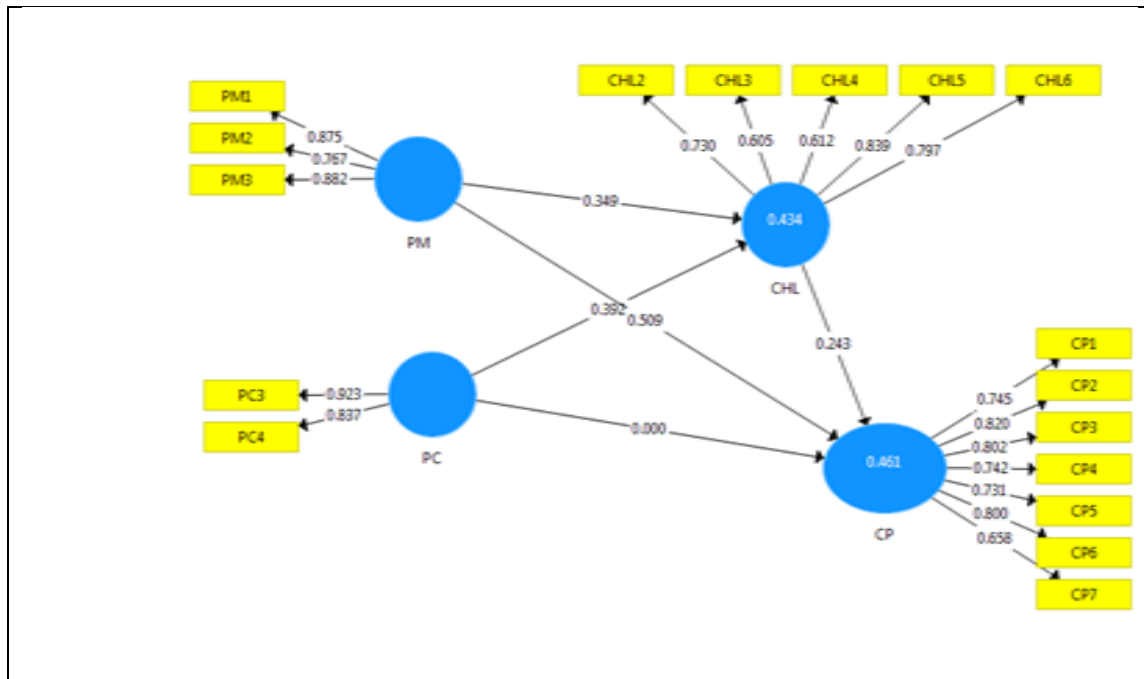
## Construct reliability and validity

As shown in Table 2, all the 22 items, and 19 items demonstrated acceptable loading factor that higher than 0.7, and 5 items were deleted due to a low loading (PM4 (0.104), PM5 (0.490), PC1 (1.121), PC2 (3.193), CHL1 (0.399)). In the measurement model most of items exhibited loadings ranging from 0.605 to 0.923. The Cronbach's alpha values presented for four constructs from 0.720 to 0.876 that exceeded the 0.5[56]. Likewise, all measurement the composite reliabilities were high, ranging from 0.843 to 0.904. Moreover, the recommended threshold value of 0.5. The average variance extracted (AVE) also represented a value higher than 0.5, and ranged from 0.522 to 0.776, which is above the overall, the results show that all the four constructs, namely promotion, price, consumer healthy lifestyle and consumption patterns has demonstrated good convergent validity.



### R square

The R<sup>2</sup> value 46.1 per cent variations of consumption patterns are explained by the model consumer healthy lifestyle, promotion, and price is shown in Table 3. The remaining 53.9 percent remains unexplained predictors, related to consumption patterns. A substantial model. If the R<sup>2</sup> value is above 0.26.



**FIGURE 2**  
**MEASUREMENT MODEL**

Items	Loading	CA	CR	(AVE)	Deleted item
CP1	0.745	0.876	0.904	0.576	
CP2	0.820				
CP3	0.802				
CP4	0.742				
CP5	0.731				
CP6	0.800				
CP7	0.658				
CHL2	0.730	0.769	0.843	0.522	CHL1
CHL3	0.605				
CHL4	0.612				
CHL5	0.838				
CHL6	0.797				
PC3	0.923	0.720	0.874	0.776	PC1
PC4	0.837				PC2
PM1	0.875	0.798	0.880	0.710	PM4
PM2	0.767				PM5
PM3	0.882				

Note; Consumption Patterns (CP), Consumer Healthy Lifestyle (CHL), Price (PC), Promotion (PM)

### Effect size

The assessment of the effect sizes ( $f^2$ ) according to Cohen (1988), values above 0.35, 0.15, and 0.02 are labelled as strong, moderate, and weak. Table 4 showed the results of  $f^2$  in this study that all relationships were at “weak effect” for the PC (0.000), and CHL (0.062) and, “moderate effect” levels for PM (0.279).

Construct	R Square	R Square Adjusted
CHL	0.434	0.431
CP	0.461	0.457

Construct	CHL	CP
CHL		0.062
CP		
PC	0.180	0.000
PM	0.142	0.279

Note; Consumption Patterns (CP), Consumer Healthy Lifestyle (CHL), Price (PC), Promotion (PM)

### Discriminant validity

Discriminant validity is to assess the correlation between the constructs, however an average variance shared between the construct should be greater than the variance (Noor et al., 2018), shared between the constructs and other constructs is shown in Table 5. Based on the Table 4 the square correlation of each construct is less than average variance extracted by the indicators measuring that construct indicating adequate discriminant validity is shown in Table 6.

Constructs	CHL	CP	PC	PM
CHL	0.723			
CP	0.537	0.759		
PC	0.595	0.441	0.881	
PM	0.576	0.649	0.581	0.843

Note; Consumption Patterns (CP), Consumer Healthy Lifestyle (CHL), Price (PC), Promotion (PM)

### Heterotrait-monotrait (HTMT)

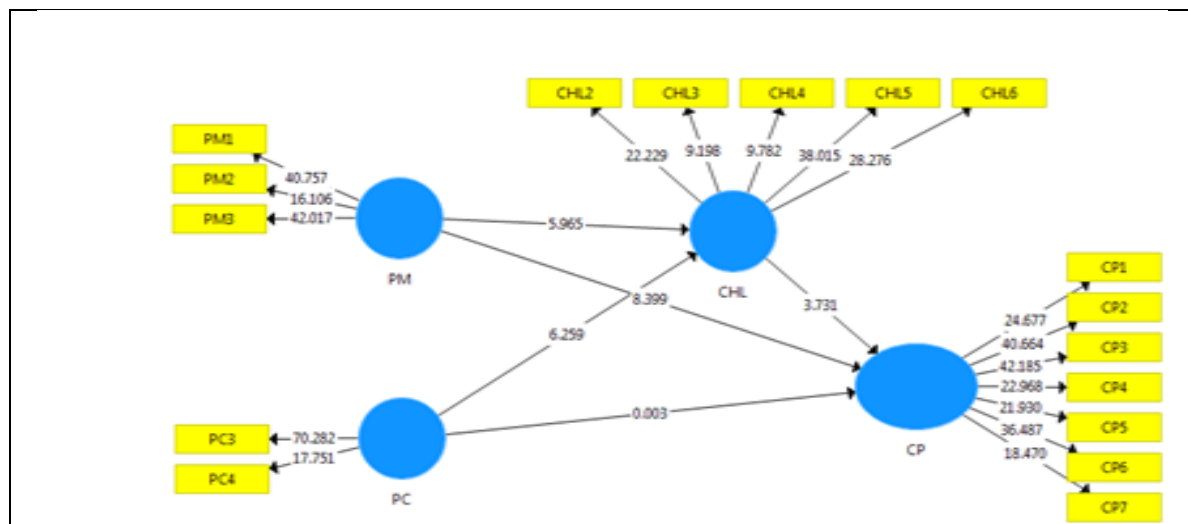
In this study HTMT value should be less than 0.85 for conceptually distinct constructs and less than 0.9 for conceptually similar constructs.

Constructs	CHL	CP	PC	PM
<b>CHL</b>				
<b>CP</b>	0.615			
<b>PC</b>	0.804	0.531		
<b>PM</b>	0.713	0.770	0.762	

Note; Consumption Patterns (CP), Consumer Healthy Lifestyle (CHL), Price (PC), Promotion (PM)

**Structural Model**

The results of the structural model were obtained by using the bootstrapping procedure with 500 times of resampling (Robins, 2014) presenting in Figure 3.



**FIGURE 3  
STRUCTURAL MODEL**

**Direct relationship**

Assessment of the hypothesis (path coefficients), by examining the standard error, T-statistics and confidence interval (Robins, 2014), as shown in Table 7 indicated that the four hypotheses (H1, H2, H4 and H5) were supported. Meanwhile, hypothesis H3 shows not supported.

H	Relationships	$\beta$ v	Std error	T Statistics	P V	Decision
<b>H1</b>	CHL -> CP	0.243	0.065	3.731	0.000	Supported
<b>H2</b>	PC -> CHL	0.392	0.063	6.259	0.000	Supported
<b>H3</b>	PC -> CP	0.000	0.063	0.003	0.998	Not supported
<b>H4</b>	PM -> CHL	0.349	0.058	5.965	0.000	Supported
<b>H5</b>	PM -> CP	0.509	0.061	8.399	0.000	Supported

Based on the analysis using Smart PLS 3, the results exposed that the consumption patterns are influenced to consume healthy lifestyle ( $b = 0.243$ ,  $t = 3.731$ ,  $p < 0.001$ ), and promotion ( $b = 0.509$ ,  $t = 8.399$ ,  $p < 0.001$ ). Whereas price shows no influence on consumption patterns ( $b=0.000$ ,  $t= 0.003$ .  $p >0.001$ ). Moreover, the results a significant effect of price on consumer healthy lifestyle ( $b = 0.392$ ,  $t = 6.259$ ,  $p < 0.001$ ), and promotion on consumer healthy lifestyle ( $b = 0.509$ ,  $t = 8.399$ ,  $p < 0.001$ ).

### Indirect relationship

Table 8 indicated the result of two indirect hypotheses, consumer lifestyle mediates between price and consumption patterns (H6) ( $b=0.095$ ,  $t=3.355$ ,  $p=0.001$ ). Consumer healthy lifestyle did mediate between promotion and consumption patterns (H7) ( $b= 0.085$ ,  $t=2.989$ ,  $p=0.003$ ) was supported.

<b>H</b>	<b>Relationships</b>	<b><math>\beta</math>v</b>	<b>Std Error</b>	<b>T Statistics</b>	<b>P V</b>	<b>Decision</b>
<b>H6</b>	PC -> CHL -> CP	0.095	0.029	3.255	0.001	Supported
<b>H7</b>	PM -> CHL -> CP	0.085	0.028	2.989	0.003	Supported

## DISCUSSION

This study's result indicates that the price factor is not supported to the consumption patterns. The result supports this study (Ahmad et al., 2016; Hossain & Lim, 2016). The findings suggest that Malaysian consumers are likely to select other food items as substitute for healthy foods. The findings demonstrated that the majority of the participants consumed home-made food.

The taste of healthy food could also be another reason why consumers were not attracted to consume healthy food (Hossain & Lim, 2016). Consumers take advantages of discounts on seafood prices to increase their purchases during the sales period. As a result, their total expenditures are not significantly affected (Ahmad et al., 2016). Additionally, the majority of the respondents are aged 31 above are more exposed to the NCD, that explains the price of healthy food product cannot predict their consumption patterns of healthy food in this study.

The present finding demonstrates the positive and significant influence of price on consumers' healthy lifestyle. a study in Ethiopia and found that price had a significant impact on health and well-being (Alem & Köhlin, 2014) . Prices for healthier food options also did not vary markedly in the different neighbourhoods studied, although larger stores consistently offered more favorable prices for healthier options as shown in previous studies (Krukowski et al., 2010). The result appears to suggest that Malaysian consumers are not constrained by the price of healthy food products to maintain their healthy lifestyle.

A willingness to purchase foods in order to be healthy is often combined with a willingness to pay premiums for purchasing healthy food products. The extent to which price affects acceptance will vary according to the type of healthy food, and the type of consumer lifestyle (Solomon et al., 2007). Malaysian consumers believe that home-made food is less costly than outside food, and home-made food tends to be healthier than outside food or fast food.

A significantly direct effect of price on consumption patterns has not been observed; however, in this study, its effect is demonstrated through the mediation of healthy lifestyle. The finding is consistent with past research (Blackwell et al., 2006; Sulaiman & Djermani, 2017; Sulaiman et al., 2014).

The findings suggested that the healthy lifestyle and consumption patterns of healthy food of Malaysian consumers are not constrained despite the higher price of quality and healthy food products (Djermani et al., 2021). This could be true since most of the population in this study are urban (70%), who are likely to have a shift in their dietary consumption and lifestyle. This means that the consumers' positive consumption patterns can be determined by price if they are enthusiastic about undertaking a healthy lifestyle, through eating natural food and taking care of health (Sulaiman et al., 2018). Moreover, majority of population are 31 years above, which means, this category of consumers is more concerned about their health. The majority were married which means are more taking care of their health. Therefore, the price factor is considered an important predictor for healthy food consumption patterns within the adoption of healthy lifestyle.

The present study shows that the promotion factor is supported in consumption patterns. This finding is similar to past research that has shown a positive relationship between promotion and consumption patterns of healthy food (Indumathi & Dawood, 2016).

The findings suggest that Food advertisements have a great effect on consumer's preferences, and it has been consistently have shown that food advertisements can increase purchase, and consumption of the brands' advertised (Irfan et al., 2014). Thus, this research study aims to enhance in the different numbers of the studies on healthy food to provide a model on consumption patterns that contribute on Malaysian consumers.

The study found that promotion was positively and significantly linked with a healthy lifestyle. The finding concurs with past studies (Cheah et al., 2015; Rakic & Rakic, 2015; Rojas-Rajs & Soto, 2013 ). The result suggests that the popularity of healthy food stores that offer free home delivery significantly influences a healthy lifestyle. Current nutritional advances focus less on treatments and more on the role of nutrients, plant nutrients and other food ingredients in promoting health and preventing cancer, and heart disease, among other health concerns (Cheah et al., 2015).

The findings of this study provide support for the mediating of consumer healthy lifestyle role. More specifically, consumers' healthy lifestyle underlies the relationship between promotion and consumption patterns. The result is consistent with past studies that found mediation of healthy lifestyle role (Blackwell et al., 2006; Sulaiman et al., 2014; Djermani et al., 2020).

Promotion leads to healthy lifestyle, which in turn leads to consumption patterns of healthy food. Because the lifestyle of the population is usually more hectic in urban than in rural areas. Promotion of quality and healthy food products is likely to encourage Malaysian consumers to adopt a healthy, and hence change their consumption pattern to support such a lifestyle (Sulaiman et al., 2021; Sulaiman et al., 2020). Overall, this means that the consumers' positive consumption patterns of healthy food can be determined by promotion if the consumers' are enthusiastic about undertaking a healthy lifestyle such as by eating natural food and taking health care of their health. Therefore, there should be an innovation of product to promote the healthy food to the consumer (Sahban, 2019)

In this regard, the study provides support for the application of the stimulus, organism and response and the SOR theory to healthy food consumption patterns in Malaysia. In other

words, the promotion and price acts as a stimulus that encourages Malaysian consumers to adopt a healthy lifestyle as a favourable state, which leads them to develop a different pattern of consumption of healthy food.

The effect of the price on consumer behaviour in general in marketing has shown that prices significantly influence the customers' consumption patterns and retailers' policies (Sulaiman, & Djermani., 2017 ; Wang et al., 2021). Moreover, it is an important factor in the purchasing decision, especially for products that are frequently purchased, and in turn, influences the choices of which store, product, and brand to patronize (Faith & Edwin, 2014; Sulaiman et al., 2020) ). Therefore, the Understanding how consumers arrive at their perceptions of prices is an important marketing priority discounts or special prices only to increase the desire of buyers to buy a product and products that get discount can change the minds of consumers (Sulaiman et al., 2017).

Promotion is key ingredient of marketing strategies factors. It brings deep understanding how consumers want to use their consumption. It is critical to understanding the role of advertising (Kotler & Keller, 2016). It is designed to stimulate to increase the consumption for products and providing information to the consumers about the uses and characteristics of products consumption (Martha et al., 2019).

## CONCLUSION

Consumer healthy lifestyle drives demand for various health products and services and has resulted in new business opportunities for a number of health-related industries, such as fitness clubs, health food and beverage, pharmaceutical, health care, insurance, and medical services. consumers' unhealthy habits and preference for sedentary lifestyle which are evident in the media reports of obesity (Muhammad & Othman, 2013), lack of exercise and poor eating habits among Malaysian (Yap & Othman, 2010). Additionally, the innovation towards consumer well-being behaviour enhances healthy food consumption (Asna & Kamaruddin, 2017). Accordingly creating social responsibility according to business case through consumer behaviour may increase consideration towards healthy food consumption (Yap & Othman, 2010). Accordingly creating social responsibility according to business case through consumer behaviour may increase consideration towards healthy food consumption(Asna & Kamaruddin, 2017; Sulaiman et al., 2017) . Overall, the effective prices lead to more price sensitive consumers towards purchasing health behaviour (Sulaiman et al., 2017). The research findings suggest that the feelings rewarded from the consumption of healthy foods could be capitalised to influence behavioural changes towards healthy food consumption for Malaysian consumers. Moreover, to cater the needs of different Malaysia communities, towards healthy diet behaviour should consider their healthy lifestyle by understanding, behaviour and values influence consumers' behaviour to towards healthy food consumption (Sulaiman et al., 2020). Therefore, to formulate effective marketing policies, marketers need to focus on the reward consumers will receive from eating healthy foods, such as lower cholesterol, blood pressure, and many other health benefits.

## REFERENCES

Ahmad, N.I., Wan Mahiyuddin, W.R., Tengku Mohamad, T.R., Ling, C.Y., Daud, S.F., Hussein, N.C., & Sulaiman, L.H. (2016). Fish consumption pattern among adults of different ethnics in Peninsular Malaysia. *Food & Nutrition Research*, 60(1), 32697.

- Akter, S., & Basher, S.A. (2014). The impacts of food price and income shocks on household food security and economic well-being: Evidence from rural Bangladesh. *Global Environmental Change*, 25, 150-162.
- Alem, Y., & Köhlin, G. (2014). The impact of food price inflation on subjective well-being: Evidence from urban Ethiopia. *Social Indicators Research*, 116(3), 853-868.
- Ali, N., & Abdullah, M.A. (2017). The food consumption and eating behaviour of Malaysian urbanites: Issues and concerns. *Geografia-Malaysian Journal of Society and Space*, 8(6).
- Andrews, H., Hill, T.D., & Cockerham, W.C. (2017). Educational attainment and dietary lifestyles. *Advances in Medical Sociology*, 18, 101-120.
- Asna, A., & Kamaruddin, R. (2017). Determinants of corporate social responsibility on companies experience. *Journal of Advanced Research in Business and Management Studies*, 7(1), 13-20.
- Blackwell, R.D., Miniard, P.W., & Engel, J.F. (2006). Consumer behavior, 10th edn, Thomson South-Western, Boston. Cochran, WG (1977). Sampling techniques. *New York: John Wiley & Sons. Comer and TA Wikle (2008), Worldwide diffusion of the cellular telephone,(1995-2005). The Professional Geographer*, 60(2), 252-269.
- Chan, K., Tse, T., Tam, D., & Huang, A. (2016). Perception of healthy and unhealthy food among Chinese adolescents. *Young Consumers*, 17(1), 32-45.
- Cheah, Y.K., Ming, M.F., & Loh, D.A. (2015). Socio-demographic and lifestyle factors associated with nutrition label use among Malaysian adults. *British Food Journal*, 117(11), 2777-2787.
- Chen, M.F. (2009). Attitude toward organic foods among Taiwanese as related to health consciousness, environmental attitudes, and the mediating effects of a healthy lifestyle. *Facilities*, 35(6), 925-945.
- Chen, M.F. (2011). The joint moderating effect of health consciousness and healthy lifestyle on consumers' willingness to use functional foods in Taiwan. *Appetite*, 57(1), 253-262.
- Croll, J.K., Neumark-Sztainer, D., & Story, M. (2001). Healthy eating: what does it mean to adolescents?. *Journal of Nutrition Education*, 33(4), 193-198.
- Djermani, F., Sulaiman, Y., Mat, N.K.N., & Sahban, M.A. (2020). Consumers' Healthy Lifestyle: Does It Matter For The Consumption Pattern Of Healthy Food?. *Jurnal Aplikasi Manajemen, Ekonomi dan Bisnis*, 5(1), 43-57.
- Djermani, F., Sulaiman, Y., & Ismail, M.Y.S. (2021). The Effect of Product and Promotion on Consumption Patterns with Mediation Effect of Healthy Lifestyle. *WSEAS Transactions on Environment and Development*, 17, 520-532.
- Djermani, F., & Sulaiman, Y. (2017). Place Effect on Health Food Consumption Patterns: Among Malaysian Consumers. *Journal of Business and Social Review in Emerging Economies*, 3(1), 33-38.
- Faith, D.O., & Edwin, A.M. (2014). A review of the effect of pricing strategies on the purchase of consumer goods. *International Journal of Research in Management, Science & Technology*, 2(2), 88-102.
- Fareed, M., Isa, M.F.M., & Noor, W.S.W.M. (2016). Human resource professionals' effectiveness, organizational culture and high performance work system link: evidence from Pakistan. *International Review of Management and Marketing*, 6(7S), 335-344.
- Goetzke, B., Nitzko, S., & Spiller, A. (2014). Consumption of organic and functional food. A matter of well-being and health?. *Appetite*, 77, 96-105.
- Green, R., Cornelsen, L., Dangour, A.D., Turner, R., Shankar, B., Mazzocchi, M., & Smith, R.D. (2013). The effect of rising food prices on food consumption: systematic review with meta-regression. *Bmj*, 346.
- Hossain, M.T.B., & Lim, P.X. (2016). Consumers' buying behavior towards organic foods: evidence from the emerging market. *Malaysian Management Review*, 51(2), 7-25.
- Hyseni, L., Atkinson, M., Bromley, H., Orton, L., Lloyd-Williams, F., McGill, R., & Capewell, S. (2017). The effects of policy actions to improve population dietary patterns and prevent diet-related non-communicable diseases: scoping review. *European Journal of Clinical Nutrition*, 71(6), 694-711.
- Indumathi, N., & Dawood, D. (2016). Impact of marketing mix on consumer buying behavior in organic. *International Journal of Research in Finance and Marketing*, 6(10), 43-54.
- Irfan, M., Sabir, R.I., Lodhi, R.N., & Mukhtar, A. (2014). Impact of Food Branding on Consumption Pattern of Children. *Social and Basic Sciences Research Reviews*, 1(2), 118-129.
- Islam, S.M.S., Purnat, T.D., Phuong, N.T.A., Mwingira, U., Schacht, K., & Fröschl, G. (2014). Non-Communicable Diseases (NCDs) in developing countries: a symposium report. *Globalization and Health*, 10(1), 1-8.
- Jayaraman, K., Munira, H., Dababrata, C., & Iranmanesh, M. (2013). The preference and consumption of chicken lovers with race as a moderator-An empirical study in Malaysia. *International Food Research Journal*, 20(1), 165-174.

- Kearney, J. (2010). Food consumption trends and drivers. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1554), 2793-2807.
- Kotler, P., & Keller K.L. (2016). Marketing management. In *Pearson*, 15.
- Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Krukowski, R.A., West, D.S., Harvey-Berino, J., & Prewitt, T.E. (2010). Neighborhood impact on healthy food availability and pricing in food stores. *Journal of Community Health*, 35(3), 315-320.
- Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing*, 26(2), 87-96.
- Martha, R.E., Evanita, S., & Patricia, D. (2019). The Influence of Promotion Mix towards Purchasing Decision of Indihome product in Telkom Region of Padang City. *Advances in Economics, Business and Management Research*, 64(2014), 686-690.
- Mat, N.K.N., Sulaiman, Y., Ghani, N.H.A., & Mohamad, M. (2018). Halal consumption pattern determinants: sequential mediating effects of muslim lifestyle, trust and risk perception. *The Journal of Social Sciences Research*, 6, 444-453.
- Mat, N.K.N., Sulaiman, Y., Abdghani, N.H., & Mohamad, M. (2020). Halal consumption determinants: The mediating role of risk perception and muslim lifestyle. *Malaysian Journal of Consumer and Family Economics*, 24, 63-78.
- Muhammad, N.H., & Othman, M. (2013). Investigating traditional food eating habits among urban and rural youths in Selangor, Malaysia. *International Journal of Social Policy and Society*, 10, 28-44.
- Nguyen, T.N., Phan, T.T.H., & Vu, P.A. (2015). The Impact of marketing mix elements on food buying behavior: A study of supermarket consumers in Vietnam. *International Journal of Business and Management*, 10(10).
- Noor, W.S.W.M., Fareed, M., & Isa, M.F.M. (2018). Examining cultural orientation and reward management practices in Malaysian private organizations. *Polish Journal of Management Studies*, 18(1), 218-240.
- Rakic, B.R., & Rakic, M.R. (2015). The influence of integrated marketing communications on the process of creating a healthy lifestyle. *Revista Romana de Bioetica*, 13(3), 1-15.
- Robins, J.A. (2014). Partial least squares revisited. *Long Range Planning*, 3(47), 131.
- Rojas-Rajs, S., & Soto, E.J. (2013). Comunicación para la salud y estilos de vida saludables: aportes para la reflexión desde la salud colectiva. *Interface-Comunicação, Saúde, Educação*, 17(46), 587-599.
- Sahban, M.A. (2019). The transformational leadership, knowledge management and perceived organizational support in predicting innovation capability. *Polish Journal of Management Studies*, 20(1), 372-381.
- Saleem, F., Hassali, M.A., Thanoon, O., Ahmad, A., & Khan, M.U. (2016). Cost assessment for healthy diet in the state of Penang, Malaysia. *Journal of Pharmacy Practice and Community Medicine*, 2(4), 130-136.
- Salleh, H.S., Noor, A.M., Mat, N.H.N., Yusof, Y., & Mohamed, W.N. (2015). Consumer-behavioural intention towards the consumption of functional food in Malaysia: Their profiles and behaviours. *International Business & Economics Research Journal (IBER)*, 14(4), 727-734.
- Mohd Salleh, S.S.M., Fareed, M., Yusoff, R.Z., & Saad, R. (2018). Internal and external top management team (TMT) networking for advancing firm innovativeness. *Polish Journal of Management Studies*, 18(1), 311-325.
- Solomon, M., Bamossy, G., Askegaard, S., & K. Hogg, M. (2007). Consumer behaviour: a European perspective. *Pharmacy World & Science: PWS*, 29(1), 3-6.
- Sulaiman, Y., Mat, N.K.N., & Ghani, N.H.A. (2014b). Constructing a Consumption Model for Malaysian Consumers. *Journal of Marketing Management (JMM)*, 2(3&4), 49-60.
- Sulaiman, Y., & Djermani F. (2017). A conceptual model of healthy food consumption pattern among Malaysian consumers. *International Journal of Research in Business Studies and Management*, 4(10), 18-22
- Sulaiman, Y., Bakar, N.N.A.A., Ismail, M.Y.S., Mat, N.K.N., & Musa, R. (2017). The Function of Marketing Mix and Consumer Preferences on Healthy Food Consumption among UUM Students. *International Journal of Economic Research*, 14(19), 103-122.
- Sulaiman, Y., Masri, M., Othman, M.M.Y., Ismail, M.Y.S., Mustafa, S.A., & Salim, N. (2017). The relationship between marketing mix and consumer preference in supplement product usage. *International Journal of Economic Research*, 14(19), 381-393.
- Sulaiman, Y., Nik Mat, N.K., Abd Ghani, N.H., & Arif, A. (2018). Understanding consumption pattern of rural and urban consumers in Malaysia. *International Journal of Engineering and Technology (UAE)*, 7(4), 238-246.



- Sulaiman, Y., Mat, N.K.N., & Ghani, N.H.A. (2018). The antecedents of halal consumption pattern: the mediating role of muslim lifestyle, risk perception and trust. *International Journal of Engineering & Technology*, 7(4.38), 1006-1011.
- Sulaiman, Y., Kan, W.P.E., & Salimon, M.B. (2020). Purchase intention towards organic food among undergraduate students. *WSEAS Transactions on Environment and Development*, 16, 2224-3496.
- Sulaiman, Y., Shamsudin, A.S., Kheng, Y.K., & Othman, A.R. (2020). Consumption pattern model for Malaysian consumers. *WSEAS Transactions on Environment and Development*, 16, 341–370.
- Sulaiman, Y., Nur Aina M.J., Othman A.b., & R. Musa. (2020). The influence of green marketing, syariah compliance, customer's environmental awareness and customer's satisfaction towards muslim consumer purchasing behaviour in Kedah. *WSEAS Transactions on Business and Economics*, 17: 195–204.
- Sulaiman, Y., Mohamad, Z.S., & Ismail, M.Y.S. (2021). Factors influencing food consumption among university students. *WSEAS Transactions on Business and Economics*, 18, 501–510.
- Wang, Q., Zhao, N., Wu, J., & Zhu, Q. (2021). Optimal pricing and inventory policies with reference price effect and loss-averse customers. *Omega*, 99, 102174.
- Ward, P.M. (2012). "A patrimony for the children": Low-income homeownership and housing (im) mobility in Latin American cities. *Annals of the Association of American Geographers*, 102(6), 1489-1510.
- Yap, S.F., & Othman, M.N. (2010). Marketing to healthy lifestyle consumers: an analysis of demographic and social cognitive factors. *Asia Pacific Management Review*, 15(4), 601–618.
- Yen, S.T., & Tan, A.K. (2012). Who are eating and not eating fruits and vegetables in Malaysia?. *International Journal of Public Health*, 57(6), 945-951.
- Yen, S.T., Tan, A.K., & Nayga Jr, R.M. (2011). Determinants of fruit and vegetable consumption in Malaysia: an ordinal system approach. *Australian Journal of Agricultural and Resource Economics*, 55(2), 239-256.