

The Effect of Product and Promotion on Consumption Patterns with Mediation Effect of Healthy Lifestyle

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Abstract: The consumption of unhealthy food has been linked to the risk of many diseases such as non-communicable diseases and obesity. Thus, this study aimed to examine the effects of product, 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. Research design used a quantitative approach where the questionnaire was formulated for primary data collection. The variables were measured using 23 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 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 product 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 product, and promotion with consumption patterns. As Malaysian consumers exhibit serious concern towards healthy food consumption patterns, it is recommended that the managers focus their strategies on promotion, and product more significance on healthy lifestyle in their healthy food consumption patterns. The study discusses the implications to various stakeholders, its limitation, and recommendations for future studies.

Key-Words: - Consumption patterns, Product, Promotion, Consumer healthy lifestyle.

Received: March 31, 2021. Revised: May 4, 2021. Accepted: May 10, 2021. Published: May 14, 2021.

1 Introduction

Consumption patterns refer to the behaviour of individuals and households when they decide to consume and purchase a product using their available resources [1] [33]. Consumption pattern in Islamic context is to use, eat or drink halal food/drinks or the amount that is used for the amount that is bought and used [2].

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. NCDs have continuously become

the main health problem in Malaysia[3]. NCDs are the most prevalent, unpreventable and expensive to cure diseases; yet the situation has not improved [4].

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 [5]. Unhealthy eating habits have resulted in cases of obesity and non-communicable diseases (NCDs) [6] [7]. The incidence of NCDs is also increasing among younger people [8].

Due to the worrying number of people with NCDs, including obesity, in Malaysia, there is certainly a great deal of interest to investigate consumer behavior 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 [9]. The unhealthy lifestyle is associated with a poor diet [10]. 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 [11].

Promotion is regarded as an important factor that could influence healthy food consumption patterns. Accordingly, promotion comprises sales force, packaging, advertising, public relations, and any other signal that the firm provides about itself and its products [12].

Since knowing consumer characteristics are extremely important in many marketing applications [13]. Product consideration did not influence consumer consumption of healthy food [14]. Malaysian customers also put a minimum effort in reading the labels; over 10, there are 4 Malaysians adults reported reading labels. Furthermore, some developing countries, including Malaysia, do not provide enough quantity of fruits and vegetables for consumption [15]. The consumption of fruit is still low among Malaysian people. Hence, the low reading of labelling reduces the interest of consumption towards healthy food products [16]. Based on the argument above of low consumption of healthy food products are noted by less fruit and vegetables consumption and low reading of healthy food products labels.

2 Problem Formulation

A lack of aggressive promotion for healthy food consumption is cited as a barrier to successful healthy food consumption. Marketing promotions of unhealthy foods made these foods trendy, eye-catching. However, the packaging of healthy food is not appealing and dull [17].

Moreover, advertisements for fruit and vegetables of healthy food are an important marketing strategy to promote the consumption of healthy food among Malaysian consumers [16]. 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 [18].

Malaysian consumer adults are still at risk of insufficient fruit and vegetable intake as well as plain water [3]. Indeed, healthy food products such as fruits and vegetables are less consumed among Malaysian consumer specifically in the north, which resulted in poor consumption patterns of healthy food products. Specifically, one of the main reason that lead to this disease is the pattern consumption of unhealthy food. It also shown that Malaysian used to choose fast food as compared to healthy food and there is showing that just a small number of Malaysian who is implemented the healthy food consumptions [19]. Hence, the various types of products gives users the option to select a product that meets their needs and tastes [20].

3 Problem Solution

The current study established a conceptual model for understanding and the factors that motivate and drive behavioural change, which will help understand the social and psychological influence on consumer behaviour, particularly in the healthy food context.

Practically speaking, the findings benefit policymakers (government), manufacturers and marketers in the healthy food industry to formulate relevant strategies to promote healthy lifestyle and consumption patterns of healthy food among Malaysian consumers, such as via continuous campaign and marketing communication strategies.

4 Literature review

4.1 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. 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 diseases. People with an advanced level in the economics of higher level of well-being are considered to have a healthier lifestyle than those who consume less healthy food [21].

The previous empirical studies that investigated the direct relationship between consumer healthy lifestyle and consumption patterns [2] [22] [23] [24]. Overall, the findings showed a significant positive. For instance, a positive significant relationship identified between healthy dietary lifestyle and consumption patterns on fruit and vegetables [22]. Healthy dietary lifestyle noted a positive significant relationship between towards consumption patterns on functional food [24]. Similarly, research identified a positive significant relationship between healthy dietary lifestyle and consumption patterns on organic food consumers [20]. Lifestyle and personal values factors activated the consumption pattern that demonstrated significant effect of lifestyle on consumption patterns [2]. In brief, many studies showed significant relationships between healthy lifestyle and consumption patterns. Therefore, the present study formulated the following hypothesis.

H1: Consumer healthy lifestyle has positive relationship with consumption patterns of healthy food.

4.2 Product and Consumer Healthy Lifestyle

Past studies that demonstrated a significant relationship between product and consumer healthy lifestyle [23] [25] [26] [27] [28]. For instance, the influence of fear, food safety concern and attitude factors on healthy lifestyle. They found that fear and food safety concern and attitude have a positive significant impact on healthy lifestyle [27]. Additionally, external feature that refers to the product factor that demonstrated no positive effect with increasing lifestyle towards healthy behavior [28]. However, unhealthy cluster products showed a

non-significant relationship on healthy lifestyle. Interestingly, the association between lifestyle and a whole range of products, which helps marketers explain why specific segments are used or not using specific brands [25]. Thus, from the above discussion, the following hypothesis was established:

H2: Product has a significant positive relationship with consumer healthy lifestyle.

4.3 Product and Consumption Patterns

Product is “a physical object that is sold and has a palpable characteristic. It has a complex set of benefits that can be used to meet customer needs characterized by quality, brand, design, durability, packaging, comfort, etc” [12]. Past studies reported product has a significant relationship with consumption patterns [12] [29] [30] [31] [32] [33].

An empirical study on organic food products demonstrated a positive significant relationship with consumption patterns [31]. Similarly, organic food products found a significant relationship towards consumption patterns [12]. Another important consideration for product factor, the brand and packaging have been shown a positive effect on consumption patterns [29]. Based on healthy food ingredients, taste, easy to cook are referred to the product found no effect of ingredients on consumption patterns. Similar study found that taste, and easy cook noted a positive significant relationship towards consumption patterns [30]. In the product factor context appealing food, healthy food, perishable and satisfied hunger of food did not affect consumption patterns among Malaysian consumers [32]. Considering the above, the researcher assumes the following hypothesis:

H3: Product has a significant positive relationship with consumption patterns of healthy food.

4.5 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 [34] [35] [36]. 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 [34]. 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 [35]. For example, a conceptual research model noted relationship has positive effect of health communication towards healthy lifestyle consumers in American Latin [36]. Thus, based on the above discussion, the researcher postulated the following hypothesis:

H4: Consumers' healthy lifestyle has a positive relationship with promotion.

4.6 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 the past studies [12] [29] [37] [38] [39]. Promotion factor was noted to be significant towards consumer healthy lifestyle. Indeed, promotion is an essential key for market exchange sales promotion, personal selling, public relations, and direct marketing, which communicate the potential stakeholders [37]. 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 [12].

The research on promotion effect indicated that promotion had significant role influencing consumption patterns. 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 [38]. As one of the main reasons for promotion factors impact the purchase decision of healthy food products were found that accessibility to healthy food and cheaper products influenced the consumption patterns of healthy food [12]. The past studies that demonstrated the positive relationship between promotion and consumption pattern of healthy food. The research of [39] 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, that promotions have a significant positive impact to increase consumption patterns of certain healthy food products [29]. Based on the literature, the following hypotheses were developed as follows:

H5: Promotion has a significant positive relationship with the consumption patterns.

4.7 Consumer Healthy Lifestyle Mediates the Relationship between Product and Consumption Patterns of Healthy Food

A few studies that considered the mediation role of healthy lifestyle. Hence, the present study further explored lifestyle as mediator. Conceptual papers on the proposed mediation effect of healthy lifestyle on the relationship between the marketing mix components and consumption patterns have been written [23] [40] [41] [42] [43].

In the context of Muslim lifestyle effect on consumption of green product and halal consumption patterns. The mediating effect of Muslim lifestyle between green consumption products with trust towards halal consumption patterns perceived positive significant relationship [43]. Whereas the mediation of healthy lifestyle between green consumerism and risk perception towards halal consumption patterns perceived that healthy lifestyle mediated positively the relationships between health consciousness that referred to healthy food choice product, environmental attitudes, and consumer attitudes towards healthy foods (organic foods) among the Taiwanese consumers [23]. In another study [40] reported the mediation healthy lifestyle and consumption pattern and promotion which showed positive significant relationship.

Since there are few studies on the mediation of healthy lifestyle. The current study between product and consumption pattern with mediating of healthy lifestyle, was justified to be investigated empirically. Therefore, the more affordable healthy food distributed in the market would make people consume more fruits and vegetables.

Therefore, people will avoid consuming red meat and will choose to consume fruits and vegetables to get more nutrition's in their daily life. Most people will take into account about the product, whether it is

affordable or not. Thus, when they easily find affordable healthy food in the market, they would consume more healthy 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:

H6: Consumer healthy lifestyle mediates the relationship between product and consumption pattern of healthy food among Malaysian consumers.

4.8 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. [44] [23] [40] [41] [39] [45].

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 [41]. Likewise, conceptualized a model was proposed on lifestyle as mediator between the marketing efforts components towards decision-making process by referring to consumption patterns [45]. In addition, a conceptual model studied on intervening variable of consumer lifestyle assumed to influence the link between element of marketing mix such as promotion and consumption patterns [42].

For example, evidence reveals that a significant effect between element of marketing mix such as promotion towards consumption patterns with intervening of healthy lifestyle mediation [40]. Few past studies which investigated the mediation of healthy lifestyle in the link between promotion factor and consumption patterns. Based on the previous discussion, therefore, the hypothesis is suggested below.

H7: Consumer healthy lifestyle mediates the relationship between promotion and consumption pattern of healthy food.

5 Methodology

5.1 Description of Methodology

This section discusses the methodology used to investigate the relationship between product

promotion and consumption patterns with mediation of healthy lifestyle.

5.1.1 Sampling frame

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.

5.1.2 Sampling size

Data were collected using a systematic sampling approach self-administered survey. Participants were meant to be older 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 [46]. Thus, 500 questionnaires were distributed. In total, 357 respondents, yielding higher than 72 %, took the survey within a six-week period July up to September (2018). Respondents were invited to complete the survey setting.

5.1.3 Research Framework

Figure 1 below depicts the research framework of this study based on the discussion of variables in literature review section.

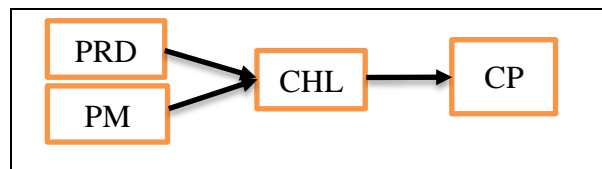


Fig. 1 Research framework

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 hypotheses are as follows:

H1: Consumer healthy lifestyle has positive relationship with consumption patterns of healthy food.

H2: Product has a significant positive relationship with consumer healthy lifestyle.

H3: Product has a significant positive relationship with consumption patterns of healthy food.

H4: Consumers' healthy lifestyle has a positive relationship with promotion.

H5: Promotion has a significant positive relationship with the consumption patterns.

H6: Consumer healthy lifestyle mediates the relationship between product and consumption pattern of healthy food among Malaysian consumers.

H7: Consumer healthy lifestyle mediates the relationship between promotion and consumption pattern of healthy food.

5.1.2 The Measurement of the Variable

The measurement of the variable consumption patterns on healthy general healthy food without any specification on different categories adapted from authors [47]. These authors also adapted the measurement from [1]. Meanwhile, the source of the consumer-consumption behavior measure for this study was based on a study of [1]. Items that measures consumer healthy lifestyle were adapted from [23]. Whereas the measurement items of promotion as independent variable were adapted from [12]. The product's items were adapted from [12]. Accordingly, all the variables items were using 5 Likert scale that ranges from "Strongly Disagree" (1) to "Strongly Agree" (5).

6 Findings

6.1 Demographic Profile

The demographic profile of the surveyed respondents is presented in Table 1. The total sample of this study was 357 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 Majority of the respondents passed the tertiary education. Table 1 also indicates that 36.7 % of the participants serves as senior lecturers. 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%. Around 20 % of the participant have less RM6000 monthly.

Table 1 Demographic Profile

Demographic Constructs	Frequency	Percentage
Gender		
Males	177	49.2
Females	183	50.8
Age (years)		

Demographic Constructs	Frequency	Percentage
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
Occupation		
Lecturer	107	29.7
Senior lecturer	132	36.7
Associate professor	84	23.3
Professor	18	5.0
Other position	19	5.3
Region		
Urban	251	69.7
Rural	109	30.3
Income		
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	20.8
Over RM 10001	41	11.4

6.2 Partial least Square (PLS) Structural Equation Modelling Approach

This study used PLS-SEM with Smart-PLS. PLS is a technique that is suitable for testing complex multivariate models that involve direct and indirect inferences about parameters being study with large samples. These arguments justify the reason for choosing the PLS technique in this study. The present research adopted a two-step process to assess the PLS-SEM path as recommended [49]. The two-step process comprises: (1) The assessment of a measurement model, and (2) The assessment of a structural model [49].

6.2 Measurement model

This study applies PLS-SEM using the software Smart PLS to assess the proposed relationships in the conceptual model under study. More specifically convergent validity was evaluated to examine factor loading, Cronbach Alpha Composite Reliability, Fornell-Larcker Criterion and HTMT.

Figure 1 represents this data analysis aims to investigate the extent to which exogenous (or independent) latent research constructs predict endogenous (or dependent) latent research constructs [48] [49].

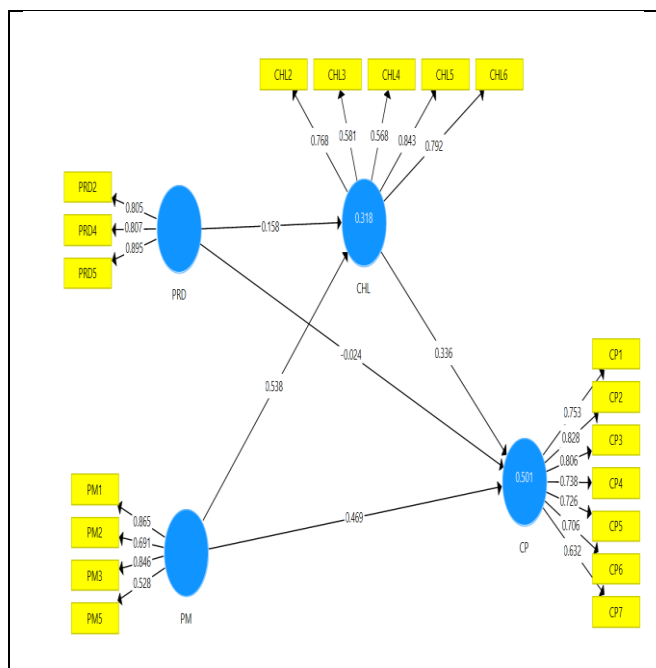


Fig. 2 Measurement Model

6.2.1 Reliability Test

Table 2 shows descriptive statistic and reliability of constructs (n=357). Normally, the rule of thumb is function for holding items with loadings between 0.40 and 0.70 [49]. The result revealed that out of 23 items, 4 items were deleted (CHL1, PR1, PR3, PM4) because the loadings below were below the threshold value of 0.40. Thus, in the whole model, only 19 items were retained as they had loadings between 0.528 and 0.895.

Table 2: Factor Loading

Construct	Items	Loading
Consumption patterns	CP1	0.753
	CP2	0.828
	CP3	0.806
	CP4	0.738
	CP5	0.726
	CP6	0.706
	CP7	0.632
Healthy lifestyle	CHL2	0.768
	CHL3	0.581
	CHL4	0.568
	CHL5	0.843
	CHL6	0.792
Product	PRD2	0.805
	PRD4	0.807
	PRD5	0.895
Promotion	PM1	0.865
	PM2	0.691
	PM3	0.846
	PM5	0.528

Table 3 shows all alpha values are above 0.7 as suggested by [50], illustrates the composite reliability

coefficients of the constructs. As shown, the composite reliability coefficient of each construct ranged from 0.896 to 0.828, with each exceeding the minimum acceptable level of 0.70, signifying satisfactory internal consistency reliability of the measures [51]. AVE values which ranged from 0.700 to 0.518, exceeding the recommended threshold value of 0.5 [48].

Table 3: Cronbach Alpha Composite Reliability and AVE

Construct	Ca	C R	(AVE)
CHL	0.769	0.840	0.518
CP	0.864	0.896	0.553
PM	0.719	0.828	0.555
PRD_	0.791	0.875	0.700

Noted: Consumer healthy lifestyle, CP: Consumption Patterns, PM: Promotion, PRD: Product

Table 4 reports Fornell-Larcker criterion and the examination of cross-loadings are the dominant approaches to evaluating discriminant validity.

Table 4: Fornell-Larcker Criterion

Const	CHL	CP	PM	PRD
CHL	0.720			
CP	0.586	0.744		
PM	0.542	0.651	0.745	
PRD	0.171	0.045	0.024	0.836

Noted: Consumer healthy lifestyle, CP: Consumption Patterns, PM: Promotion, PRD: Product

HTMT value above 0.90 Table 5 demonstrates the output of HTMT indicating discriminant validity is adequate [52].

Table 5: Heterotrait-Monotrait Ratio

	CHL	CP	PM	PRD_
CHL				
CP	0.658			
PM	0.676	0.818		
PRD	0.215	0.057	0.090	

Noted: Consumer healthy lifestyle, CP: Consumption Patterns, PM: Promotion, PRD: Product

6.3 Structural model

The structural model was proceeded after ensuring that the measurement model is reliable and valid. The structural model shown in Figure 03 through the bootstrapping of 500 samples repeated. to assess the significance of the path coefficients [49]. Samples and 357 cases.

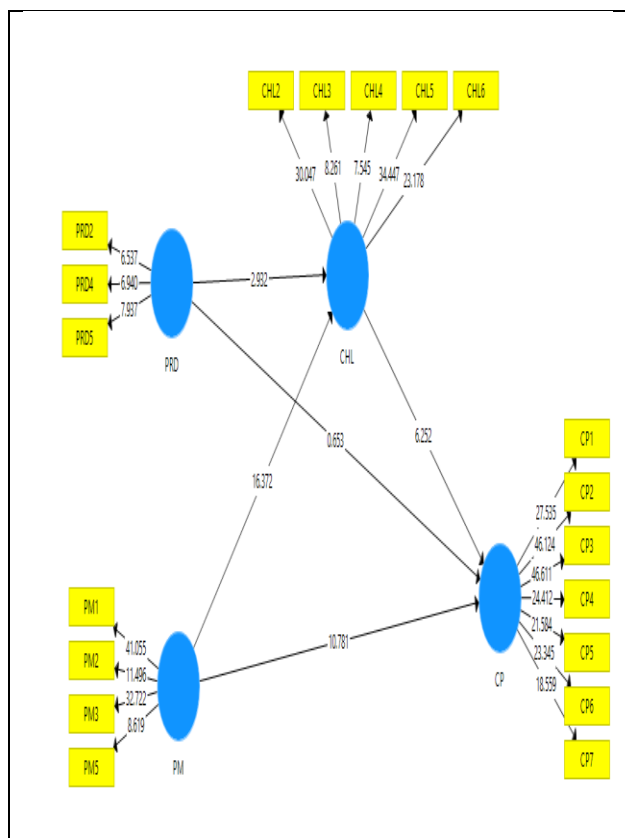


Fig. 3 structural model

Table 6 indicates the study establishes five direct relationships of direct Hypotheses Result of Structural Model (H1, H2, H3, H4) are supported. Meanwhile H5 found not supported.

Table 6: Direct Hypothesis

N	Hyp	Beta value	STDEV	T STDEV	P Values
H1	CHL -> CP	0.336	0.054	6.252	0.000
H2	PM -> CHL	0.538	0.033	16.372	0.000
H3	PM -> CP	0.469	0.044	10.781	0.000
H4	PRD-> CHL	0.158	0.054	2.932	0.002
H5	PRD -> CP	-0.024	0.037	0.653	0.257

Noted: Consumer healthy lifestyle, CP: Consumption Patterns, PM: Promotion, PRD: Product

The result of indirect relationships as tabulated in Table 7 which two hypotheses were developed and six of the hypotheses (H6, H7) resulted a significant relationship.

Table 7: Hypothesis Testing Result

N	Hyp	B v	STDEV	STDE V	P V
H6	PM -> CHL -> CP	0.18 1	0.032	5.684	0.00 0
H7	PRD_ -> CHL -> CP	0.05 3	0.020	2.623	0.00 4

Noted: Consumer healthy lifestyle, CP: Consumption Patterns, PM: Promotion, PRD: Product

7 Discussion

This study's result indicates that the product factor is not supported to the consumption patterns. These findings suggest that Malaysian consumers are likely to select other food items as substitute for healthy foods. The findings demonstrated that most 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 1 Additionally, most of the respondents are aged 31 above are more exposed to the NCD, that explains the healthy food product cannot predict their consumption patterns of healthy food in this study.

The finding demonstrations that consumers` healthy lifestyle is supported by consumption patterns. Consumer healthy lifestyle defined a as one's orientation toward overall health rather than toward a specific health issue. It means that there is awareness among Malaysian consumers that will increase the understanding of consumer behaviour, particularly concerning the consumption patterns of healthy food that is linked to their healthy lifestyle.

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 [34]. Moreover, promoting for quality and healthy food products is likely to urge Malaysian consumers to adopt a healthy style. This means that the consumers` of healthy food consumption can be determined by influence of promotion strategy on the consumers` are eager to adopt a healthy lifestyle by focusing on consumption of natural food and taking health care of their health. It brings deep understanding how consumers want to use their consumption. It is critical to understanding the role of advertising [50]. 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. Furthermore, traceability and food labelling techniques provide evidence for certain production methods to sustain healthy food consumption patterns [55].

Another reason 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 [34].

The significant relationship between promotion and consumption patterns 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 [29].

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 and lack of exercise and poor eating habits. Hence, healthy product considered as key factor for leading healthy lifestyle.

Whereas the non-significant relationship between product and consumption patterns that is supported by [54]. Due to the ingredient factor did not play a significant role in affecting the consumption of chicken meat products by Malaysian consumers. Because many competitors supply a massive number of unhealthy foods, Malaysian consumers may not notice the availability of healthy food in their region [30]. This is supported by the result of this study that found that young consumers tended to eat fast food by choosing the simplest menu to occupy their appetite and budget, rather than eating healthy food.

Healthy lifestyle linked between promotion as marketing factor towards the consumption patterns. More specifically, consumers` healthy lifestyle underlies the relationship between promotion and consumption patterns. This means that the consumers` positive consumption patterns of healthy food can be identified by promotion of good healthy food undertaking a healthy lifestyle such as by eating natural food and taking health care of their health.

Healthy lifestyle linked between product as marketing factor towards the consumption patterns. The findings suggested that the healthy lifestyle and consumption patterns of healthy food of Malaysian consumers. 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 through eating natural food and taking care of health [43]. Moreover, majority of population are 31years 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 product factor is considered an important predictor for healthy food consumption patterns within the adoption of healthy lifestyle.

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 product 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 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. 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. Additionally, there should be an innovation of product to promote the healthy food to the consumer [56]. Creating social responsibility according to business case through consumer behaviour may increase consideration towards healthy food consumption [57]. Moreover, effective communication through marketing strategic is significantly affect consumer behaviour and perception to healthy food consumption [58]. Others factors such the use of technology affected on consumer behaviour in general [59].

8. Conclusion

Overall this study, have found that product and promotion for healthy food consumption patterns that healthy lifestyle mediation are significantly important for marketing strategies such as product and promotion in terms of management of marketing and consumer preferences.

Acknowledgement

The authors would like to thank The Ministry of Higher Education (MOHE) for granting this research under the Fundamental Research Grant Scheme (FRGS) and Research Innovation Management Centre (RIMC) Universiti Utara Malaysia. This article is under FRGS grant research.

References:

- [1] Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing*, 26(2), 87–96. <http://doi.org/10.1108/07363760910940456>
- [2] 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*, 444-453.
- [3] Institute for Public Health (IPH) 2015. *National health and morbidity survey 2015 (NHMS 2015)*. Vol. II: Non-Communicable Diseases, Risk Factors & Other Health Problems; 2015.
- [4] Patil, S. Hasamnis, A.Su Yin, L. (2018, July). *Beating Malaysia's top preventable diseases*. The Start Online. Retrieved from: <https://www.thestar.com.my/opinion/letters/2018/07/05/beating-malaysias-top-preventable-diseases/#wYj2QHegRDdGxGAP.99>
- [5] Croll, J. K., Neumark-Sztainer, D., & Story, M. (2010). Healthy eating: what does it mean to adolescents? *Journal of Nutrition Education*, 33(4), 193–198. [https://doi.org/10.1016/S1499-4046\(06\)60031-6](https://doi.org/10.1016/S1499-4046(06)60031-6)
- [6] 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.
- [7] Pellegrini, M., Ponzio, V., Rosato, R., Scumaci, E., Goitre, I., Benso, A., & Bo, S. (2020). Changes in weight and nutritional habits in adults with obesity during the “lockdown” period caused by the COVID-19 virus emergency. *Nutrients*, 12(7), 2016
- [8] 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), 81.
- [9] Unit, E. I. (2017). Obesity in Malaysia: unhealthy eating is as harmful as smoking. *The Economist Intelligence Unit*, January 25. Retrieved from: <https://penanginstitute.org/publications/issues/1029-obesity-in-malaysia-unhealthy-eating-is-as-harmful-as-smoking/>
- [10] Kraft, F. B., & Goodell, P. W. (1993). Identifying the health conscious consumer. *Journal of Health Care Marketing*, 13, 18–25.
- [11] 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.
- [12] Indumathi, N., & Dawood, D. (2016). Impact of marketing mix on consumer buying behavior in Organic Product. *International Journal of Research in Finance and Marketing*, 6(10), 43–54.
- [13] Solomon, M., Bamossy, G., Askegaard, S., & K. Hogg, M. (2007). Consumer behaviour: a European perspective. *Pharmacy World & Science: PWS*, 29(1), 3–6. <http://doi.org/10.1007/s11096-005-3797-z>
- [14] Ambak, R., Tupang, L., Hasim, M. H., Salleh, N. C., Zulkafly, N., Salleh, R., & Naidu, B. M. (2018). Who do not read and understand food label in Malaysia? Findings from a population study. *Health Science Journal*, 12(1), 1-7.
- [15] Yang, W. Y., Burrows, T., MacDonald-Wicks, L., Williams, L. T., Collins, C. E., & Chee, W. S. S. (2015). Studying the Family Diet: An Investigation into Association between Diet, Lifestyle and Weight Status in Malaysian Families. *Malaysian Journal of Nutrition*, 21(2), 139-154.
- [16] Othman, K. I., Ab Karim, M. S., Karim, R., Adzhan, N. M., & Halim, N. A. (2013). Consumption pattern on fruits and vegetables among adults: a case of Malaysia. *Academic Journal of Interdisciplinary Studies*, 2(8), 424.
- [17] Chan, K., Tse, T., Tam, D., & Huang, A. (2016). Perception of healthy and unhealthy food among Chinese adolescents. *Young Consumers*, 17(1), 32–45. <http://doi.org/10.1108/YC-03-2015-00520>
- [18] Ali, N., & Abdullah, M. (2012a). The food consumption and eating behaviour of Malaysian urbanites issues and concerns. *Malaysian Journal of Society and Space*, 3(1), 44–53.
- [19] 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(20), 1-20.

- [20] Sulaiman, Y., Masri, M., Yusr, M. M., 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.
- [21] Goetzke, B., Nitzko, S., & Spiller, A. (2014). Consumption of organic and functional food. A matter of well-being and health? *Appetite*, 77, 94-103.
<https://doi.org/10.1016/j.appet.2014.02.012>
- [22] Andrews, H., Hill, T. D., & Cockerham, W. C. (2017). Educational attainment and dietary lifestyles. *Food Systems and Health: Emerald Publishing Limited*, 101-20.
<https://doi.org/10.1108/S1057-629020170000018005>
- [23] 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. *British food journal*, 111(2), 165-178.
- [24] 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.
- [25] Cosmas, S. C. (1982). Lifestyles and consumption patterns. *Journal of Consumer Research*, 8(4), 453-455.
- [26] Divine, R. L., & Lepisto, L. (2005). Analysis of the healthy lifestyle consumer. *Journal of Consumer Marketing*, 22(5), 275-283.
<https://doi.org/10.1108/07363760510611707>
- [27] Jose, H., & Koshy, M. P. (2018). Factors influencing young consumers of organic food products to lead a healthy lifestyle. *Indian Journal of Marketing*, 49(10), 7-19.
- [28] Jusoh, Z. M., & Ahmat, N. (2017). Willingness to pay for the consumption of green food product among households. *Malaysian Journal of Consumer and Family Economics*, December (20), 184-195.
- [29] 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.
- [30] 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).
- [31] Petrescu, A., Oncioiu, I., & Petrescu, M. (2017). Perception of organic food consumption in Romania. *Foods*, 6(6), 42.
- [32] Sharkawi, I., Mohamed, Z., & Rezai, G. (2014). Healthy eating: the preventive factors among Malaysians. *Journal of Economics, Business and Management*, 2(4), 257-261.
<https://doi.org/10.7763/JOEBM.2014.V2.135>
- [33] Sulaiman, Y., Jamil, N. A. M., Othman, A. R., & Musa, R. (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.
- [34] Cheah, Y. K., Moy, F. M., & Loh, D. A. (2015). Socio-demographic and lifestyle factors associated with nutrition label use among Malaysian adults. *British Food Journal*, 117(11), 2777-2787
- [35] 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.
- [36] Rojas-Rajs, S., & Soto, E. J. (2013). Health communication and healthy lifestyles: contributions towards reflection on collective health. *Interface-Comunicação, Saúde, Educação*, 17, 587-599.
- [37] Munusamy, J., & Wong, C. H. (2008). Relationship between marketing mix strategy and consumer motive: an empirical study in major Tesco stores. *UniTAR E-Journal*, 4(2), 41-56. Retrieved from <http://myais.fsktm.um.edu.my/8079/>
- [38] Hawkins, D. I., Best, R., & Coney, K. (2008). *Consumer behavior: implication for marketing strategy*, New York: Richard D. Irwin
- [39] 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), 206.

- [40] 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.
- [41] Hawkins, D. I., Mothersbaugh, D. L., & Best, R. J. (1998). *Consumer behavior: building marketing strategy 10/e*. McGraw-Hill.
- [42] Sulaiman, Y., Mat, N. K. N., & Ghani, N. H. A. (2014). Constructing a consumption model for Malaysian consumers. *Journal of Marketing Management*, 2(3), 49-60.
- [43] 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.
- [44] Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2006). *Consumer behavior* (10th ed.). Mason, OH: Thomson South-Western.
- [45] Sulaiman, Y., & Djermani, F. (2017). A conceptual model of healthy food consumption patterns among Malaysian consumers. *International Journal of Research in Business Studies and Management*, 4(10), 18-22.
- [46] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- [47] 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.
- [48] Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. Thousand Oaks: Sage.
- [49] Hair Jr, F. J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121.
- [50] Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- [51] Bagozzi, R. P. (1986). *Principles of marketing management*, Science Research Associates. Inc., Chicago.
- [52] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), 115-135
- [53] Kotler, P. and Keller, K. L. (2016). *Marketing management*. 15ed. New Jersey: Pearson Prentice Hall.
- [54] Arbuckle, J. (2015). *The effect of a fruit and vegetable program on diet quality and produce consumption*. (Unpublished master's thesis). University of Illinois state. 334. <https://ir.library.illinoisstate.edu/etd/33>
- [55] Kokkinakis, M. N., Tzatzarakis, M. N., Tsakiris, I., Vardavas, A. I., Vardavas, C. I., Stivaktakis, P., & Kokkinaki, A. (2020). Pesticide residue monitoring in the European Union Agricultural Sector via modern analytical techniques. A review on Organophosphates. *International Journal of Biology and Biomedical Engineering*, 14, 169-179. <https://doi.org/10.46300/91011.2020.14.23>
- [56] Sahban, Muhammad Amsal. 2019. The Transformational Leadership, Knowledge Management and Perceived Organizational Support in Predicting Innovation Capability. *Polish Journal of Management Studies* 20(1):372-81
- [57] 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.
- [58] 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, 734-743. <https://doi.org/10.37394/232015.2020.16.76>
- [59] Sulaiman, Y., & Jauhari, N. (2021). The factors influencing mobile banking usage among university staff. *WSEAS Transactions on Business and Economics*, 18, 179-189. <https://doi.org/10.37394/23207.2021.18.19>

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