Eating with a Purpose: Development and Motivators for Consumption of Superfood

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Abstract

This research aimed to examine an integrated and modified Health Belief Model by encapsulating the factors influencing consumer likelihood to consume superfoods as adjusted to the Malaysian population. It was conducted in Peninsular Malaysia from May 2019 until October 2019 using a sample size of 1,000 individuals obtained via purposive sampling, whereby the data were analysed by using structural equation modelling. The result showed that consumer likelihood to consume superfoods was positively influenced by perceived benefits and perceived susceptibility, while negatively influenced by perceived barrier. The cue to action had a direct influence on perceived susceptibility, perceived seriousness, and perceived benefits. Surprisingly, the cue to action was not too influential on perceived barrier and likelihood to consume superfoods. Nevertheless, the proposed modified Health Belief Model fitted the data better than the original model. This implied that it is important to focus on the cue to action especially in the superfood-buying context as opposed to the original Health Belief Model which neglected the cue to action.

Keywords: Healthy lifestyle, functional food, nutritious, superfoods

1.0 Introduction

In today's fast-paced world, it is a challenging task for consumers to meet their needs for a balanced diet in ensuring the subsistence of excellent health and well-being (Antal, 2007). As stated by the Deputy Health Minister, Dr Lee Boon Chye, it was not a coincidence that heart-related diseases had continued to be the

leading cause of death among Malaysians over the past 13 years from 2005 to 2017 (The Star Online, 2019). The number of deaths due to heart disease almost doubled (i.e. increased by 54%) from 8776 deaths in 2007 compared to 13,503 deaths in 2017 (Jay, 2019). Besides, the commonly known factors such as diabetes, hypertension, obesity, harmful diet, and unhealthy lifestyle play a vital role in contributing to the increase of heart disease (The Star Online, 2019).

Lifestyle changes can be observed among consumers today, namely the positive change in health-related behaviours (Szakály *et al.*, 2019). This new behavioural trend has created novel challenges to the food industry practitioners due to consumer's growing interest in healthy well-being. Therefore, these practitioners have to keep up with the latest trends in facilitating consumer's healthy eating lifestyle. Concurrently, the marketers can consider the potential effects of functional ingredient addition into regular healthy food products as the consumers do not like to change their eating habits generally (Bech-Larsen and Grunert, 2003).

In line with this, Meyerding *et a*l. (2018) have found that three out of four segments of their respondents value bread containing superfood ingredients, namely consumers who are quality-oriented, health-conscious, and price-conscious. Hence, this provides a vast opportunity for food manufacturers and food retailers. These food items sought by consumers over the past few years are commonly known as 'superfoods' (Meyerding *et al.*, 2018). According to Wolfe (2009), superfoods are food that can strengthen the immune system and improve overall health as it contains high amounts of essential nutritional values, such as vitamin, mineral, collagen, antioxidants, etc. Besides, it promotes vitality and energy levels, regulates the cholesterol level and blood pressure, and prevents or fights against diseases (Ekesa, 2017). Examples of such food are pomegranate, broccoli, spirulina, hippophaes, corn, chia seeds, blueberries, green tea, maca plant, quinoa, acai berries, and goji berries (Lorent *et al.*, 2013).

Although the perceived health benefits are a strong motivator influencing consumer's intention to consume superfoods or functional foods (Vassallo *et al.*, 2009), it has yet to be scientifically proven that they are healthier than other alternative food sources (Groeniger *et al.*, 2017). Many arguments have emerged with regard to the attributes or benefits of consuming functional food or "superfood", whereby it has become a popular buzzword. This is seen especially on social media

sites or nutrition, health, and food dedication pages that serve as an advertisement or marketing tool to attract consumers (EUFIC, 2012). Similarly, some large food brands use the term "superfood" as a marketing hype to encourage their consumers to buy the products (Salmenhaara, 2016). No scientific evidence has proven that this type of "marketing strategy" is misleading thus far (EUFIC, 2012). Regardless, it has turned an ordinary food industry into a billion-dollar industry by transforming food that are once negatively seen as "low-class" or "unappealing" into "healthy", "powerful" and "desirable" products, thus bringing profitable sales to the companies (Lee, 2019).

On the contrary, Mike Gibney, a University College Dublin Professor of nutrition, has said that there are no such thing as a superfood; instead, it is just one of the marketing terms as there is no evidence that confirms whether any of these food is performing extremely good (King, 2014). In fact, the European Union has banned the use of "superfood" on any food product packaging or promotional communication to avoid misleading information to the consumers (Salmenhaara, 2016). Many studies that focus on the health properties and nutrient in superfoods have shown that it is difficult for consumers to apply the results of experimental studies to real diets and eating habits (EUFIC, 2012). This is due to the great disparity in the conditions of food consumed during lab experiment and those consumed in daily life. Therefore, relevant organisations need to determine the consumer's motivators to consume superfood in seeking the correct marketing strategy for marketing superfoods to potential customers. Hence, the aim of the current research is to examine the modified Health Belief Model on a Malaysian sample.

2.0 Literature Review

Functional food was conceptualised first in the 1980s. It refers to products containing healthy ingredients, modified foodstuff, fortified components, enriched elements, and enhanced commodities (Meyerding *et al.,* 2018). Enhanced commodities functional food is define as the food components has been naturally enhanced by using special growing conditions, genetic manipulation and new feed composition (Sawalha, 2014). Since then, numerous national authorities and scientific organisations have proposed various definitions for functional food. To date, it has exceeded one hundred definitions (Jasák, 2015). However, there is still no universally accepted definition (Hasler, 2002). In particular, Diplock *et al.* (1999)

have defined functional food as food that is beneficial to one or more targeted functions of the body parts; it is beyond the adequate nutritional effects as it either promotes better health quality and well-being and/or reduce the risks of diseases. Besides providing the basic essential nutritional benefits, functional food ingredients also play an important role in improving the overall health and reducing the risk of various acute and chronic diseases (Zion Market Research, 2019).

In recent years, a value change can be seen among the consumers in which they are increasingly attentive to the benefits of food quality over food quantity (Törőcsik, 2007). In this sense, functional food products are usually the preferred choice for consumers (Domínguez Díaz et al., 2020). It can be functional food items, whereby an ingredient or component has been added or removed by technological or biotechnological means or any combinations of these possibilities (Diplock et al., 1999). Collectively, it can be further segmented into plant, microbial, and animal forms (Zion Market Research, 2019). Thus, functional foods are preferred by consumers for their potential health gains (Annunziata and Vecchio, 2013).

There is no official definition for superfoods, wherein it is considered under the umbrella of functional food (Lunn, 2006). Superfoods, however, are described as food that has health-promoting and disease-preventing properties and an acceptable level of nutritional value (Lunn, 2006). It has been observed that countries that consume superfoods on a regular basis have lower rates of diseases compared to those that seldom do the same (Lunn, 2006). However, Weitkamp and Eidsvaag (2004), Nestle (2013), and Roberfroid (2002) have underlined the dramatic increase in sales and consumption of superfoods to be due to heavy marketing and promotion. They have been promoted across a wide range of media such as advertising, news report, and infotainment for their health-enhancing and nutritional value (MacGregor, Petersen, and Parker, 2018a). For example, from 2005 to 2007, blueberries sales doubled due to advertising claims that they were superfoods (Weitkamp and Eidsvaag, 2004).

Superfoods may appeal to three different market segments, namely the "worries well" (MacGregor et al., 2018), "healthism" (Warde, 1997), and "gastro-anomy" (Fischler's, 1988). The health anxiety experienced by the "worried well" denotes the individuals who seek to avoid, manage, or prevent their risks and optimise their health (MacGregor, Petersen and Parker, 2018b). This group of consumers tend to choose the right food that is considered as healthy food as they

are worried about the sugar, fat, and sodium content, along with regular exercise (MacGregor et al., 2018). Meanwhile, the healthism consumers have higher self-discipline and are capable of controlling their diet by taking personal action (Crawford, 1980). Lastly, the gastro-anomy consumers tend to look for experts to redefine their knowledge about food and consumption as they encounter a sense of confusion in the absence of unambiguous food rules and knowledge about food production (Fischler's, 1988; Schneider and Davis, 2010). However, the food industry, experts, and research scientists may offer contrasting guidance within the contemporary food market (MacGregor, Petersen and Parker, 2018a). According to Nielsen's Global Trust in Advertising report (Nielsen, 2012) that surveyed more than 28,000 Internet respondents in 56 countries, 92 per cent of consumers around the world said that they trusted the media, such as recommendations from friends and family, above all other forms of advertising, showing an increase of 18 per cent since 2007. Therefore, it can be contended that the cue to action performs crucial roles in this context by underlining persuasive techniques to encourage consumer intention for consuming superfood.

3.0 **Methodology**

3.1 Overview of the Proposed Research Model

Several past studies have reported on consumer behaviour towards superfood (e.g. Dolgopolova and Teuber, 2016; Dolgopolova and Teuber, 2017; Hellyer *et al.*, 2012; Lawless *et al.*, 2012; Øvrum *et al.*, 2012); however, most of them ignore the fact that perceived susceptibility, perceived barrier, perceived benefit, and perceived seriousness can be influenced by the cue to action. Therefore, the Health Belief Model (HBM) postulates five conceptually independent determining factors of the Malaysian likelihood to consume superfood, which include perceived susceptibility, perceived seriousness, the cue to action, perceived benefits, and perceived barrier. These factors are then used to examine how the motivators influence consumer likelihood to consume superfood. For instance, previous studies have adopted this model to predict individual intention and actual consumption of functional food in Palmerston North (Duljira, 2009). It is also employed in assessing the dieting and fasting behaviour of Australians (Lillian *et al.*, 2005) and iron-fortified soy sauce

consumption among women in Guizhou province, China (Sun *et al.*, 2006).

3.2   The cue to action

The cue to action is defined as one's perceived social pressure to partake in a certain behaviour (Ajzen and Fishbein, 1980). Consumers tend to engage in purchase intention if those whom they regard as important to them have positive attitudes and opinions towards a certain product (Teng and Wang, 2015). Therefore, family, relatives, friends, and professional and social groups play an important role in influencing consumer perception towards the benefits and barriers of products or services (Zhang and Zhou, 2019). Zhang and Zhou's (2019) research has further shown that family members such as mother and cousin influence consumer perception towards natural cosmetics by providing information regarding the benefits and disadvantages of synthetic and natural cosmetics. Furthermore, Tarkiainen and Sundqvist (2005) have highlighted the importance of the cue to action in predicting consumer repurchase intentions. For example, an external cue is often displayed through reminder messages from a dentist, observing a sick friend or family member, printed health warning labels on products, or communication with healthcare providers on health-related information (Janz and Becker, 1984). Therefore, the intensity of cues that are required to drive action is unique based on different individuals through their perceived susceptibility, seriousness, benefits, and barriers (Rosenstock, 1974). Consequently, the following hypotheses are proposed:

H_1.   Consumer's cue to action has a positive influence on consumer's perceived susceptibility on getting a disease or condition.

H_2.   Consumer's cue to action has a positive influence on consumer's perceived seriousness towards getting a disease or condition.

H_3.   Consumer's cue to action has a positive influence on consumer's perceived benefits towards superfood.

H_4.   Consumer's cue to action has a positive influence on consumer's perceived barrier towards superfood.

H[7]. Consumer's cue to action has a positive influence on consumer's likelihood to consume superfood as a preventive health action.

3.3 Perceived Benefits

Perceived benefits are used to measure consumer's perception of effectiveness for a healthy behaviour in reducing the risks, seriousness, and impact (Edberg, 2006). It is logical for consumers to adopt a healthy behaviour when they believe in the functional food's health and nutrition that will reduce the possibility of acquiring any disease or illness (Cox and Bastiaans, 2007; Doyon and Labrecque, 2008; Urala and Lähteenmäki, 2004; Verbeke, 2005). Perceived benefits are one of the most important psychological factors in influencing functional food consumption. This is due to consumers who are concerned about their health motivation and knowing of the advantages in consuming the products (Vassallo *et al.*, 2009; Santeramo *et al.*, 2018). Consequently, the following hypothesis is proposed:

H[5]. The perceived benefits of superfood will have a positive influence on consumer's likelihood to consume superfood for preventive health actions.

3.4 Perceived Barriers

Perceived barriers are used to measure a consumer's evaluation of the potentially negative aspects during the adoption of particular health behaviour (Janz and Becker, 1984). Cost-benefit analysis typically occurs when they know that the perceived barriers are more costly than the perceived benefits (Zare and Hosseinkhani, 2016). In other words, perceived barriers are the most substantial factor in deciding consumer behaviour change as they are more likely to purchase functional food if the perceived benefits outweigh the perceived barriers (Janz and Becker, 1984). The barriers that consumers are concerned with may influence their healthy lifestyle (Boluda and Capilla, 2017) such as dangerousness, pain level, cost, or side effects can deter them from adopting healthy actions. According to Stratton *et al.* (2015), a consumer who has food neophobia is less likely to consume functional food as they are worried about its adverse effect and cost. Consequently, the following hypothesis is proposed:

H_6.   The perceived barriers of consuming superfood will have a negative influence on consumer's likelihood to consume superfood for preventive health action.

3.5   Perceived Susceptibility

Perceived susceptibility refers to an individual's belief regarding the probability of getting a disease or health condition (Becker and Mainman, 1980). Following the research done by Golnaz *et al.* (2017), perceived susceptibility is known as a vital cause that influences Malaysian consumers' attitude and purchase intention towards functional food. The likelihood to consume superfood is thus influenced by their perceived susceptibility, such as health history and current physical health (Szakály *et al.,* 2019). A research done by Munene (2006) has further confirmed that these individuals are more willing to consume functional foods if any of their family members are affected by a chronic disease (Annunziata and Vecchio, 2011; Siró *et al.*, 2008; Verbeke, 2005). This would eventually lead to consumer's willingness to pay for a higher price in exchange of these food products (Asselin, 2005; Bower *et al.*, 2003). Perceived susceptibility thus motivates people to consume healthy food for preventing any health conditions (Chen *et al.*, 2007). Consequently, the following hypothesis is proposed:

H_8.   The perceived susceptibility of a consumer has a positive influence on consumer's likelihood to consume superfood as a preventive health action.

3.6   Perceived Seriousness

Perceived seriousness is an individual's belief about the significance of acquiring a particular illness or leaving the disease untreated. This includes its medical and clinical consequences such as death, disability, and pain and other potential social impairments like the negative effects on their job performance, domestic, and social life (Zare and Hosseinkhani, 2016). Perceived severity such as having a long-lasting effect, being bed-ridden for a prolonged time, incurring high medical expenses, and overall disruption to their career have successfully predicted the prominence of eating healthy food (Deshpande *et al.*, 2009). According to Xin and Seo (2019), health consciousness positively affects Korean people's intention to purchase

Korean functional foods. Consequently, the following hypothesis is proposed:

H9.   The perceived seriousness will have a positive influence on the consumer likelihood to consume superfood as a preventive health action.

Interestingly, the findings discussed are not all equally accurate for every type of superfood and each nation. This is attributable to people who come from all walks of life with different cultures, ethnicities, ethics, and lifestyles. Numerous research studies have indicated that consumer purchase behaviour and willingness to pay for functional foods are largely dependent on the product type (Ares and Gámbaro, 2007; Di Pasquale *et al.*, 2011; Hailu *et al.*, 2009; Siró *et al.*, 2008; Urala and Lähteenmäki, 2007). Although the likelihood to consume or purchase for superfoods in Malaysia has been examined by a few studies (Bitzios *et al.,* 2011; Di Pasquale *et al.,* 2011; Dolgopolova and Teuber, 2016; Dolgopolova and Teuber, 2017; Hellyer *et al.*, 2012; Hu *et al.*, 2011; Lawless *et al.*, 2012; Øvrum *et al.*, 2012), most ignore the fact that perceived susceptibility, perceived benefits, perceived barrier, and perceived seriousness can be influenced by the cue to action. Hence, the current study aims to evaluate the original Health Belief Model on a Malaysian sample and develop a more robust model.
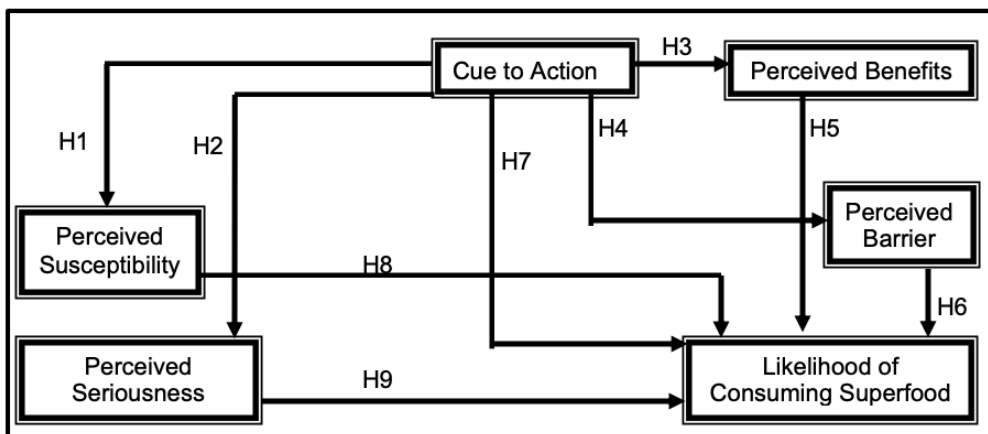

Figure 1 : Modified HBM framework with an application towards the likelihood of consuming superfood (Source: Stretcher and Rosenstock, 1997)

3.7 Development of Instruments

This research applied a quantitative approach, whereby a correlational research was employed in this study to determine the extent of the relationship between the cue to action and perceived benefits, perceived barrier, perceived susceptibility, perceived seriousness, and likelihood to consume superfood. A 55-item self-administrated questionnaire was developed by incorporating the six main constructs of HBM, with some modifications done to fit the scope of this study. Furthermore, a pre-test was conducted and 20 questionnaires were distributed to the consumers currently staying in Kuala Lumpur, Malaysia. Based on the recommendations obtained from the pre-test, the questions were fine-tuned predominantly with regard to the questionnaire length, content sequence, and any confusing questions. The final version of the questionnaire was then pilot-tested, whereby 200 questionnaires were distributed among Malaysian consumers to examine its internal consistency. The data was next used to validate the measurement by using Cronbach's Alpha, which measured the reliability of the items for each construct. The results for the final questionnaire showed that all the constructs' reliability (Cronbach's α coefficients) yielded a value exceeding the recommended value of 0.7 (Nunnally and Bernstein, 1994).

Next, the face validity was examined by two food marketing experts who reviewed the questionnaire and concluded that the instrument and items used could measure the characteristics of interest. Scoring was done based on a seven-point Likert scale, whereby the answers denoted 'strongly disagree', 'disagree', 'somewhat disagree', 'neither agree nor disagree', 'somewhat agree', 'agree', and 'strongly agree'. Meanwhile, the socio-demographic information of respondents such as gender, age, education, marital status, monthly income, and race were included at the end of the questionnaire as the seventh variable.

3.8 Data Collection

A total of 1,000 questionnaires was distributed to consumers who were staying in Peninsular Malaysia, spanning the states of Perlis, Kedah, Penang, Perak, Kelantan, Terengganu, Pahang, Johor, Malacca, Selangor, Kuala Lumpur, Putrajaya, and Negeri Sembilan. The data collection was done from May 2019 until October 2019 This research examined the consumer likelihood to consume superfood;

therefore, the respondents consisted of people across all walks of life. Furthermore, the study was conducted by using purposive sampling due to the lack of list and sampling frame for people in such criteria (Calder *et al.,* 1981; Seddon, 2014). Meanwhile, purposive sampling is a technique employed to locate all possible causes of a specific purpose as set by the researcher (Sekaran and Bougie, 2012). It was selected as the sampling method predetermined the respondents and ensured their suitability for the study, yielding a final sample size deemed as adequate (Tabachnick and Fidell, 2012; Krejcie and Morgan, 1970).

4.0 **Findings**

As this study proposed a modified and fully integrated model for the likelihood of consuming superfood, it contained five main constructs: the cue to action, perceived benefits, perceived barrier, perceived susceptibility, and perceived seriousness. Following the recommendation of Worthington and Whittaker (2006), exploratory factor analysis (EFA) was conducted by using a different sample size of 200 respondents to determine the structure of the variables and examine the correlation among variables in the specific data set (Field, 2013). This was followed by a confirmatory factor analysis (CFA) and structural equation modelling (SEM), which were done with a sample size of 1000 and by using AMOS to test the hypotheses of the existing theories. These analyses were performed to specify how each construct was measured, confirm the factor structure (Hair *et al.*, 2013), and specify how each of them were related to each other.

4.1 Descriptive Analysis

The demographic information (Table 1) showed the percentages of male and female respondents, which were 48% and 52%, respectively. A majority of them were Malay (45.2%), followed by Chinese (35%), Indian (15.9%), and others (3.9%) otherwise denoted as Indonesian, Arabic, or people of Kadazan, Dusun, Myanmar, Iran, and Iban backgrounds. The results showed that a majority of the respondents was single (58.1%), while 41.9% were married. With regard to the education level, 53.1% of them obtained at least a tertiary education, whereas only 3.9% merely received primary schooling. In terms of monthly income, 32.9% of the respondents earned RM3,500-

RM4,499 per month, while only a smaller percentage (1.7%) had a monthly income between RM6,500-RM7,499.

Table 1 : Summary of the demographic profile for respondents (n=1000)

Characteristic	Percentage	Characteristic	Percentage
Gender		Education level	
Male	48.0	Primary Education	3.9
Female	52.0	Secondary Education	25.5
Ethnic (Race)		Tertiary Education	53.1
Malay	45.2	Higher Tertiary Education	17.5
Chinese	35.0	Income Level	
Indian	15.9	RM 2,499 and below	26.0
Others	3.9	RM 2,500 – RM 3,499	26.3
Age		RM 3,500 – RM 4,499	32.9
Below 24	11.5	RM 4,500 – RM 5,499	6.5
25 – 34	29.6	RM 5,500 – RM 6,499	2.5
35 – 44	34.7	RM 6,500 – RM 7,499	1.7
45 – 54	20.0	RM 7,500 and above	4.1
55 – 64	3.6	Marital Status	
65 and above	0.6	Single	58.1
		Married	41.9

4.2   Exploratory Factor Analysis

When analysing the EFA, principal axis factoring was conducted on the 55 items with oblique rotation (Promax). Oblique rotation was chosen based on Costello and Osborne's (2005) study, whereby factor inter-correlations were considered as a common practice in social science studies. If the factors are uncorrelated, both orthogonal and oblique rotation will reflect the same result. This study followed the significant factor loading criteria as mentioned by Hair *et al.* (2010), which was based on the sample size. The appropriate significant factor loading was 0.40 by using a sample size of 200 for EFA. The results of the statistical assumptions for EFA are shown below:

- A sample size of 200 was sufficient to conduct an EFA (Tabachnick and Fidell, 2012);
- Bartlett's test of sphericity was significant at (p<0.001 (Field, 2013);

- Kaiser-Meyer-Olkin's (KMO) value was 0.886, which was excellent (Hutcheson and Sofroniou, 1999) and none of the items were deleted;
- Communality value for each item was all above 0.5 (Field, 2013);
- Total variance explained was 67.533 per cent, which was more than 50 per cent (Podsakoff and Organ, 1986); and
- Variance for the first factor was 20.226 per cent, which was less than 50 per cent (Podsakoff and Organ, 1986).

4.3   Measurement Model Assessment and Confirmatory Factor Analysis

4.3.1 Model Fit Indicators

Table 2 shows the indicators for the goodness-of-fit indices in the measurement model together with the respective acceptable levels. Hair *et al.* (2010) have recommended the use of at least one fitness index from each category of model fit in SEM. In general, a total of three fitness indexes was used, namely parsimonious fit, incremental fit, and absolute fit. The absolute fit indices showed that the RMSEA and SRMR coefficients were 0.067 and 0.064, respectively, thus indicating a good fit. Meanwhile, other indicators were also fit according to the values of GFI (0.939) and AGFI (0.913). Besides, the incremental fit indices indicated that all four tests were fit since the NFI and CFI obtained were 0.923 and 0.936, respectively, and followed by TLI (0.919) and IFI (0.936). Finally, the parsimony fit indices also revealed model fit since only the x^2/df value was not fit (5.462); meanwhile, the values of PGFI (0.6756) and PNFI (0.7031) were acceptable. Since at least one of the fitness indexes from each category met the requirement, thus it could be concluded that the model fit well. The χ^2 was particularly sensitive to a sample size above 200 (Byrne, 2010), whereby the sample size used in this study was 1000. Therefore, an evaluation of the measurement model's psychometric properties such as indicator reliability, discriminant validity, convergent validity, and construct reliability was done since its overall fit was acceptable.

Table 2 : Goodness-of-fit indices of the measurement model

Name of Category	Name of Index	Adequate of Model Fit	Cited	Result	Fit (yes/no)
Absolute Fit Measure	GFI	> 0.90	Jöreskog and Sörbom (1993)	0.939	Yes
	AGFI	> 0.90	Jöreskog and Sörbom (1993)	0.913	Yes
	RMSEA	< 0.08	Steiger (1990)	0.067	Yes
	SRMR	< 0.08	Hu and Bentler (1999)	0.064	Yes
Incremental Fit Measure	NFI	> 0.90	Bentler and G. Bonnet (1980)	0.923	Yes
	CFI	> 0.90	Byrne (2010)	0.936	Yes
	TLI	> 0.90	Tucker and Lewis (1973)	0.919	Yes
	IFI	> 0.90	Bollen (1990)	0.936	Yes
Parsimonious Fit Measure	Chisq/df	1.00-5.00	Kline (2010)	5.462	No
	PGFI	> 0.50	James et al. (1982)	0.656	Yes
	PNFI	> 0.50	Bentler and G. Bonnet (1980)	0.731	Yes

Notes: df, degree of freedom; CFI, comparative-fit-index; RMSEA, root mean square error of approximation; SRMR, standardised root mean square residual; GFI, goodness-of-fit; NFI, normed fit index; AGFI, adjusted goodness-of-fit index; IFI, the increment fit index; TLI, Tucker-Lewis coefficient index; PNFI, parsimony normed fit index. The indexes in italic are recommended since they are frequently reported in the literature (Awang, 2014)

4.3.2 Construct Reliability

The individual Cronbach's α coefficients for the six main latent variables ranged from 0.723 to 0.830 and were higher than the recommended level of 0.60 (Kannana and Tan, 2005; Nunnally and Bernstein, 1994). Furthermore, all composite reliability (CR) values ranged from 0.60 to 0.794 and were similarly above the recommended value of 0.6 (Fornell and David, 1981), indicating that the construct reliability was fulfilled. Therefore, the Cronbach's α and CR values obtained for all constructs were considered to show sufficient internal consistency (see Table 3).

4.3.3 Indicator Reliability

According to Hair *et al.* (2013), constructs with a high loading indicate that the associated indicators have much in common. Indicators with loadings below 0.40 have to be removed from the scale, while those ranging from 0.4 to 0.7 should be considered for elimination

only if removing them leads to an improved value for the CR or average variance extracted (AVE) (Hair *et al.*, 2011). For all items in this study, the loadings exceeded the recommended value of 0.5 (Hair *et al.*, 2010); they ranged between 0.623 to 0.856, whereby the items fulfilled the requirements without any elimination required.

Convergent validity is the extent to which a measure correlates positively with the alternative measures of the same construct, which will establish the convergent validity by using AVE (Hair *et al.*, 2013). The AVE with a value equal or higher than 0.50 indicates that the construct explains more than half of the variance for its indicators. In contrast, those with a value less than 0.50 indicate that more error remains in the items than the variance explained by the construct (Hair *et al.*, 2013). Table 3 shows the result of convergent validity obtained via AVE. Here, the AVE values for perceived susceptibility (0.592), perceived barrier (0.579), perceived seriousness (0.571), perceived benefit (0.606), cue to action (0.610), and likelihood of consuming superfood (0.636) suggested that the full model construct was fulfilled since they were higher than 0.50.

4.3.4 Assessment of Normality

Normality of the data was examined, wherein the data were distributed normally as the value of skewness was within the range of −1.0 and 1.0. Meanwhile, the value of kurtosis was between −2.0 and 2.0 (Pituch and Stevens, 2015) (Table 3).

Table 3 : Item loading, Cronbach's alpha, CR, and AVE for the full model

Item Code	Statement	Standardised Regression Weight (Factor loading)	Skew	Kurtosis	Cronbach Alpha	CR	AVE
Perceived Susceptibility					0.743	0.60	0.592
ps3	My physical health makes it more likely that I will face a medical condition.	0.756	-0.199	-0.871			
ps4	Health problems that run in my family can increase my chances of being diagnosed with a medical condition.	0.783	-0.328	-0.976			

Table 3 : Item loading, Cronbach's alpha, CR, and AVE for the full model - continue

Item Code	Statement	Standardised Regression Weight (Factor loading)	Skew	Kurtosis	Cronbach Alpha	CR	AVE
Perceived Barriers					0.723	0.677	0.579
pban6	The smell of superfood makes me feel sick.	0.840	-0.082	-1.047			
pban7	It is not convenient for me to purchase superfood.	0.676	-0.373	-0.694			
Perceived Seriousness					0.786	0.751	0.571
pseve2	I believe that if I am diagnosed with any medical condition, my whole life would change.	0.777	-0.305	-0976			
pseve3	I believe that if I am diagnosed with a medical condition, it would limit my daily activities.	0.848	-0.234	-0.972			
pseve4	I believe that if I am diagnosed with medical conditions such as osteoporosis and obesity, I am unable to live a normal life.	0.623	-0.219	-0.982			
Perceived Benefit					0.819	0.773	0.606
pbn2	Consuming superfood will improve my skin condition.	0.807	-0.351	-1.053			
pbn3	Consuming superfood is a convenient way of meeting the recommended daily intake of food.	0.787	-0.520	-0.586			
pbn4	I believe that I do not need to take any dietary supplements if I consume superfood.	0.740	-0.057	-1.090			

Table 3 : Item loading, Cronbach's alpha, CR, and AVE for the full model - continue

Item Code	Statement	Standardised Regression Weight (Factor loading)	Skew	Kurtosis	Cronbach Alpha	CR	AVE
The cue to action					0.822	0.776	0.610
snn3	According to my friends, it is very important for me to consume superfood.	0.762	-0.192	-1.037			
snn4	According to my family doctor, I should consume superfood.	0.810	-0.100	-0.938			
snn5	The media encouragements make me think that the best way for one to prevent sickness is to consume superfood.	0.753	-0.123	-1.075			
Likelihood					0.830	0.794	0.636
inn3	How likely is it in the next 3 months that you will consume superfood to have a balanced diet?	0.776	-0.405	-0.765			
inn4	If you had the opportunity, how likely is it that you would consider consuming superfood as a prevention for avoiding to get any medical condition?	0.856	-0.217	-0.815			
inn5	How likely is it that you will consider consuming superfood to improve your skin condition?	0.738	-0.145	-1.018			

4.3.5 Discriminant Validity

Discriminant validity was then analysed to determine which construct that was truly distinct from the other constructs by empirical standards. Establishing this attribute implies that a construct is unique and captures the phenomenon otherwise not represented by other constructs in the model (Hair *et al.*, 2013). Here, the discriminant validity of the measurement model was checked following Fornell and Larcker's (1981) criterion. As shown in Table 4, the correlations between the six main constructs ranged from 0.050 to 0.545 and were smaller than the square root of the AVE estimates, which were in the range of 0.756-0.797. This indicates that the constructs are strongly related to their respective indicators compared to other constructs of the model, thus suggesting a good discriminant validity (Hair *et al.*, 2013). Hence, the discriminant validity of the full model constructs was fulfilled since the correlation between the exogenous constructs was less than 0.85 (Awang, 2014).

Table 4 : Item loading, Cronbach's alpha, CR, and AVE for the full model

	PS	**PBAN**	**PSEVE**	**PBN**	**SNN**	**INN**
PS	1					
PBAN	0.050	1				
PSEVE	0.357	0.082	1			
PBN	0.277	-0.153	0.308	1		
SNN	0.263	-0.090	0.327	0.545	1	
INN	0.276	-0.196	0.277	0.628	0.506	1

Notes: PS, perceived susceptibility; PBAN, perceived barriers; PSEVE, perceived seriousness; PBN, perceived benefit, SNN, the cue to action; INN, likelihood

4.3.6 Structural Model Assessment

After the measurement model was validated, a representation of the structural model could be made by specifying the relationships among the constructs. The structural model generally shows the details of associations between the exogenous and endogenous variables (Hair *et al.*, 2010; Ho, 2006). Therefore, an assessment of the structural model results enables one to determine how well the empirical data support the theory and thus decide whether the theory is empirically confirmed (Hair *et al.*, 2013). Figure 2 shows the outcomes of the structural model as drawn on AMOS (version 21) graphics.
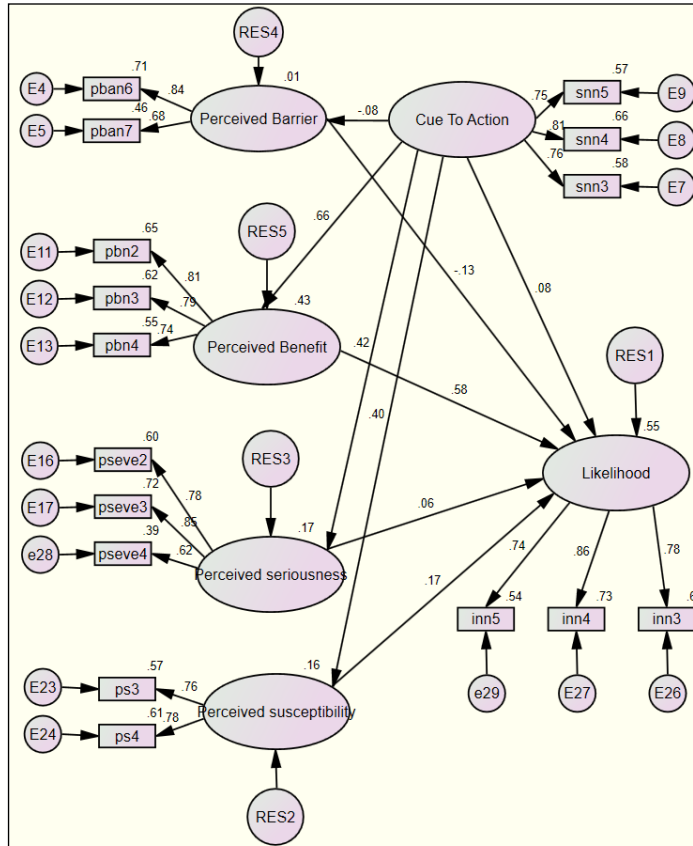
Figure 2 : Structural model of superfood research outcomes

The hypotheses of this study are tested using SEM as presented in Figure 2, while the structural model assessment shown in Table 5 indicates the hypotheses testing done. The analysis showed that all paths to the latent variables were significant at the level of 0.01, except for the path of the cue to action (for example: friends, media and family doctors) do not affect consumer perceived barrier (such as smell and inconvenient) towards superfood. The results also show that there is no relationship between cue to action and consumer likelihood to consume superfood as a preventive health action. A research done in New South Wales, Australia by Patch *et al.* (2005) has shown that normative beliefs are not the significant determinants of consumer's intention to consume omega-3 enriched novel food. Similarly, Ghazali *et al. (*2017) have revealed that the impact of subjective norm such as family, friends, and people who are important to the consumers is minimal on their repurchase behaviour. Surprisingly, the path of perceived seriousness (e.g. getting a health condition will limit one's

daily activities, changes of life, and unable to live a normal life) did not affect the consumer likelihood to consume superfood as a preventive health action. According to Park *et al. (*2011), perceived seriousness and vulnerability are not significant in predicting the consumers' behaviour towards superfood at Southwestern University, Texas.

As shown in Table 5, the cue to action for consumers poses a positive influence on the perceived benefits (β= 0.662, p= 0.01), perceived seriousness (β= 0.432, p= 0.01), and perceived susceptibility (β= 0.405, p= 0.01) towards superfood. In this study, the cue to action measured how social pressure on consumers could motivate the likelihood for them to consume superfood as a prevention of any health condition. From the results shown in Table 5, advice from friends, family, doctors, and media is able to influence, motivate, or force the consumers to consume superfood. Similarly, word of mouth from the public such as friends, doctors, and media increased their concern about health and food-related risks. They would tend to make decisions on food consumption, food storage, and food preparation from an ideal perspective for their health and safety. The result of this study is similar to the case of bananas. In the early 20th century sometime around World War I, banana was considered as one of the superfoods and used as part of the food marketing strategy. The United Fruit Company initiated an enthusiastic advertising campaign to promote its major import of banana, whereby pamphlets including Points About Bananas and the Food Value of Banana were published (United Fruit Company, 1917). With the power of media, the company started to advertise the practicality of including a banana in daily diet, whereby it was good to be consumed whether cooked or uncooked, cheap, nutritious, sealed by nature in a germ-proof package, and easily digested. However, to encourage people to eat more bananas, they started to advertise and suggested to add bananas in cereal for breakfast, salad for lunch, or fried with meat for dinner. Its popularity dramatically increased after being endorsed in medical journals, whereby physicians would publish their findings of a banana diet that was able to treat conditions like celiac disease and diabetes (Wilson and Gillespie, 1999). Furthermore, the announcement by the American Medical Association stated that including bananas in a child's diet would provide relief for celiac disease or cure. It had thus increased the fruit's popularity. The United Fruit Company took the opportunity to publish these health benefits in its promotional material and the popular press flaunted headlines about bananas, birthing the banana diet craze (United Fruit Company, 1917).

According to a Nielson's survey, consumers are willing to pay more for foods perceived as healthy and health claims on labels show the greatest sales (Nielson Global Health and Wellness Report, 2015).

In contrast, the main predictors influencing the consumer likelihood to consume superfood as a preventive health action were the perceived benefits (β= 0.546, p= 0.01) of superfood and perceived susceptibility (β= 0.159, p= 0.01) for being diagnosed with a medical condition. Here, the likelihood to consume superfood will increase as a preventive health action if the consumer believes that it is a convenient way of meeting the recommended daily intake of food, they would not need to take extra supplements, and would be able to improve their skin condition. Therefore, consumer's perceptions of health benefits are related to their motives for health issues (Rojas-Rivas *et al.*, 2019). The perceived benefit has been reported to be the strongest predictor for one's willingness to consume superfood (Urala and Lahteenmaki, 2007). This result was similar with the research done by Barcellos and Lionello (2011), whereby rewards of consuming superfood is the strongest factor for the intention and it is linked to the benefits of wellness and health provided. Furthermore, Kraus (2015) has found that the most important consequence thus motivating a consumer to consume superfood is the health effects of proper nutrition, resulting in their conscious-raising actions for promoting health. Besides, this study also found that consumers who suspected that they might be diagnosed with a health condition due to family history and current physical health were more likely to consume superfood for prevention purposes. Several studies have reported the same results in which consumers who are more interested in preserving their health condition or prevent a disease are more likely to consume superfood (Ares *et al.*, 2008, 2010).

The perceived barriers of consuming superfood in this study had a negative sign towards consumer likelihood (β= -0.147, p= 0.01). This means that consumers are more likely to consume superfood as a preventive health action if they think that there are fewer barriers for them to do so, such as its availability everywhere and acceptable smell. According to a research by Jacob (1999), in Denmark, consumer's belief such as convenience and positive health effect by consuming superfood influences their intention to purchase.

Next, the coefficient of determination, R^2, indicates the amount of variance in the dependent variables that are thus explained by the independent variables. Thus, a larger R^2 value increases the predictive

ability of the structural model, whereby the value should be sufficiently high for it to achieve a minimum level of explanatory power (Urbach and Ahlemann, 2010). According to Falk and Miller (1992), R^2 values should be equal to or greater than 0.10 for the variance explaining a particular endogenous construct to be deemed adequate. Besides, Cohen (1988) has suggested that R^2 value of 0.26 is substantial; however, Hair *et al.* (2013) have recommended that it has to be larger than 0.75 to be deemed substantial with an acceptable power above 0.25. Figure 2 shows the results of R^2 obtained from the structural model. They indicated that the cue to action, perceived barrier, perceived benefit, perceived seriousness, and perceived susceptibility were able to explain 55 per cent of the variance for the likelihood to consume superfood.

Table 5 : Structural path analysis result

			β	S.E.	C.R. (t-value)	Decision
H_1	The cue to action	→ Perceived susceptibility	0.405	0.044	9.262***	Supported
H_2	The cue to action	→ Perceived seriousness	0.432	0.041	10.462***	Supported
H_3	The cue to action	→ Perceived benefits	0.662	0.042	15.685***	Supported
H_4	The cue to action	→ Perceived barrier	-0.067	0.034	-1.945	Not Supported
H_5	Perceived benefits	→ Likelihood to consume	0.546	0.047	11.588***	Supported
H_6	Perceived barriers	→ Likelihood to consume	-0.147	0.037	-3.990***	Supported
H_7	The cue to action	→ Likelihood to consume	0.077	0.048	1.586	Not Supported
H_8	Perceived susceptibility	→ Likelihood to consume	0.159	0.034	4.698***	Supported
H_9	Perceived seriousness	→ Likelihood to consume	0.056	0.030	1.854	Not Supported

***Significant at 0.01

5.0 Conclusion and Recommendations

This paper aimed to test the modified Health Belief Model, thereby incorporating factors in determining the consumer likelihood to consume superfood as adjusted to a Malaysian sample. According to the authors' knowledge, this model has yet to be tested with the

application of superfood in Malaysia; therefore, testing and a modification of the original model contributes to an examination of its usability and provides an example of how the model fits into the Malaysian culture. The main contribution of the modifying model was thus the cue to action, which was tested as the modifying factor thus influencing all the other variables. It was chosen as the modifying factor due to the explosion of social networks and consumer-generated media over the past few years that resulted in a significant impact on advertising. Here, consumers started to rely on the word of mouth in their purchase decision-making process either from the people they know or online consumers that they were unfamiliar with. This study shows that consumers trust and rely on the message given by the media, friends, and doctors in the purchase decision-making process. It is worth noting that the cue to action is the main factor influencing consumer belief towards health and superfoods. Therefore, it is useful for marketers to be aware of and recognise the importance of advertising and word of mouth from friends or doctors. If they can utilise these findings by setting up strategies to promote superfood, this may, in turn, improve the profit and sales of such products.

In the modified Health Belief Model, the strongest relationship was identified between the cue to action towards perceived benefits, followed by perceived seriousness and perceived susceptibility. This means that the more consumers believe in their friends, doctors, and media, the more positive belief they have in the health-protective effect of superfoods. The survey is similar with the research done by Gajdoš *et al.* (2015), where they have found the need to gain consumer's confidence and educating them in label comprehension for an increased likelihood of purchase. This suggests that media forms such as advertisement can change the consumer perception and belief towards superfoods. Simply put, just being able to include a scientifically proven statement, testimonial, or endorsement from doctors or customers in the advertisement can change consumer's belief, trust, and confidence towards superfood.

5.1   Limitations and Suggestions for Future Work

The population of this study consists of consumers from Peninsular Malaysia. Therefore, future research can focus on the respective states in Peninsular Malaysia, Sabah, and Sarawak to

formulate specific marketing strategies for the different states as Malaysia is a multi-ethnic country made up of different races.

The present study enriches the body of knowledge by modifying the Health Belief Model to better understand the impact of cue to action on consumer perception and likelihood to consume. Therefore, this is another area that future researchers can explore from different perspectives, such as examining the different kinds of consumer lifestyle food marketing by considering varying target group-specific product communication and positioning. It should be noted that according to Irene Goetzke and Spiller (2014), consumer lifestyle will influence their eating behaviour, whereby organic food is linked with an active lifestyle while functional food is linked with a passive lifestyle. Researchers can also examine the moderating effects of demographic factors such as age, gender, education, and income.

5.2 Conclusion

The main objective of this study was to investigate the modified model of Health Belief Model by incorporating the factors determining the consumer likelihood to consume superfood. The research proposed the cue to action as the modifying factor influencing other variables, while the proposed modified model provided a theoretical formulation for future studies in food marketing. As such, this work adds to the current understanding of the cue to action within the scope of the theories of consumer buying decision. The element was proposed and validated using a second-order model effect, which contained five order constructs (i.e. perceived susceptibility, perceived seriousness, perceived benefits, perceived barrier, and likelihood to consume). The subsequent analysis examined the relationship between the variables of the modified model via EFA, CFA, and SEM by using AMOS. The study is justified as it supports the content suggested in the literature regarding perceived susceptibility, perceived seriousness, perceived benefits, perceived barrier. Here, the cue to action is critical for the comprehensive consumer likelihood to consume superfood and its role is essential and a vital mover in determining the variance of perceived susceptibility, perceived seriousness, perceived benefits, perceived barrier, and likelihood to consume. Besides, the cue to action has a positive influence on perceived susceptibility, perceived seriousness, and perceived benefits. The implications of the present study are

discussed along with the limitations and some directions for future research.

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