Contrariwise Obesity Through Organic Food Consumption in Malaysia: A Signaling Theory Perspective

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Abstract

Background: the context and purpose of the study: Unhealthy food consumption has raised an alarming situation of obesity among Asian nations and posing serious threats to human health. Recent studies have acknowledged that organic food consumption has been contrariwise associated with obesity. The consumption of healthy food has received research attention in social marketing and several antecedents and consequences have been identified. However, to date, there is a void in literature that how social, individual, and marketing elements together tradeoff in predicting a healthy lifestyle. Thus, the current investigation unfolds the antecedents of healthy foods' adoption in Asia by integrating the brand signaling and theory of Planned Behavior.

Methods:

The data of 241 respondents were collected from selected social media Facebook communities through a survey using assessed 42 questions. For this purpose, participants' Facebook accounts were selected from the online healthy communities such as '*Diet Suku Suku Separuh'* (469,000 followers), 'Hiking, and Camping around Malaysia' (351,200 followers), and 'Healthy Malaysia' (332 followers). The enumerator also engaged with the online community by liking posts and following health accounts.

Results:

The data was analyzed using PLS (SEM) approach, the outcomes of hypotheses revealed interesting information that health consciousness not significantly predicts the purchase intention of healthy food. All antecedents were significant contributors to the prediction of foods' purchase intentions in this study. However, the findings indicated that no positive relationship exists between brand image identifications and brand credibility identifications, and healthy foods' purchase intentions identifications. The findings also indicated that no positive relationship exists between health consciousness identifications and healthy foods' purchase intentions identifications.

Conclusions: (summary and potential implications)

Owing to the perilous increase in obesity among the general public in Asia. This study reinforced the factor that can help in the adoption of a healthy lifestyle. The study validated that a healthy lifestyle is reliant on the consumers' health consciousness, environmental concern, and innovativeness through motivating the consumers' healthy foods' purchase intentions. Surprisingly, the results highlighted that respondent have not identified brand image and credibility as an antecedent of purchase intention. Given that organic food brands are somewhat new in Asian markets and therefore, brands must endure crisis marketing practices to improve their brand recognition. Therefore, policymakers must facilitate the food promotional activities that are critical to enhancing the perceived benefits of organic food to combat issues like obesity. This paper offers a foundation for future empirical investigations in Asia and various stakeholders on how to promote a healthy lifestyle in Asia. Specifically, the results will help policymakers to offer positive policies and procedures for the improvement of a healthy lifestyle through the understanding of the antecedents and consequences of health-conscious consumers' healthy foods' purchase intentions.

1. Introduction

Obesity and dietary patterns have become distressing public health issues. Recent global death rates from diseases associated with obesity have been increased ten-fold during previous decades (1). According to a report, 13% of adults across the globe are obese and another 39% of adults are overweight. Similarly, 20% of children globally, are obsessed or overweight (2). Overweight and obesity are caused by unhealthy diets and physical inactivity among people including in South-East Asia (3). The ongoing transition in dietary habits of the people exemplified is troublesome. Currently, the dietary patterns of people across the world contain an insufficient amount of requisite nutrients and abundant with carbohydrates leading to obesity (4). For this reason, global trends in obesity and its associated diseases such as diabetes and hypothyroidism are rapidly increasing (3). A similar alarming upsurge trend of obesity has been observed during the last two decades in South-East Asian countries. Even though Indonesia has been reported to be number four in the obesity ranking in Asia, Malaysia tops the ranking (5)(Refer to Fig. 1). According to the WHO, Malaysia with a nearly 50% obesity rate is among the fattest nation in Asia (2). The WHO data indicates

that44.4% of adults have more than 25kg Body Mass Index (BMI) and overweight (6). Owing to the higher obesity rate Malaysia is spending around 20% of the healthcare budget on the diseases associated with obesity (7).

The policymakers of Malaysia took the initiative to tackle these prevalent public health issues and formulated the “National Plan of Action for Nutrition in Malaysia (NPANM I) (1996 to 2000)”. The purpose of this program was to chalk out strategies on how to minimize obesity through food policy, awareness, and promotional campaigns (6). Undesirably, these strategies remained unsuccessful and during the period, the frequency of obesity and overweight rose to 177% (8). To cope with this public health issue, healthy and sustainable organic products using various technologies have been introduced in emerging markets (9). Healthy product development is the degree to which ecological issues should be recognized in the development of such products (10). According to the U.S. Department of Agriculture, the word ‘organic’ refers to any food that is produced using accepted farming techniques that conserve biodiversity, did not harm natural resources, and applied only accepted substances (11). Thus, organic food is produced devoid of applying conservative pesticides (12). “In terms of food that comes from living animals – meat, eggs, and dairy products, the animal must not be fed antibiotics or growth hormones” (12). Any food that is term organic in nature must be environmentally safe (13), produced using a technique that does not require modern artificial inputs including chemical fertilizers, pesticides and include organisms that are genetically modified (11) not processed with irradiation, not processed using chemical food additives or/and industrial solvents (13).

Therefore, recent food technologies such as organic foods have provided healthy food choices to people(14). For example, emerging consumption trends of organic food intake have been suggested as a remedy to vanquish obesity and overweight. Recent research provides evidence that organic food consumption has an inverse effect on obesity(15). Although past research has identified several factors involved in the adoption of a healthy lifestyle (9, 16, 17). For example, research revealed that health-conscious customers demand sustainable products including organic food products that have sustainable characteristics (17). Therefore, research affirmed that health-conscious customers’ choices of organic foods are influenced by their perceived health benefits of organic foods. These consumers utilize health compare to organic foods with drugs that cause side effects to the consumers (18–22). In contrast, studies reported that consumers in Asian markets have a fewer extent of health-conscious compared to the Western nation. Therefore, they lack trust in the brands that are promoting these products due to higher uncertainties about safety (11). The Asian consumers are thereby, more conscious of purchasing organic food products, quality, and performance (20, 21, 23). Regardless of marketing and promotion strategies that have been in practice, people are reluctant in adopting such a healthy lifestyle in Asia. Consequently, a pertinent question is about the public understanding of healthy food intake and why don’t they value the food choices that can beneficial for their health as well as the environment. Thus, this public health issue is remaining unaddressed, and research-driven promotional campaigns are required. In the past few studies have been carried out to tap the factors involving in the purchase and adoption of healthy products in Asian countries (24), including Indonesia and Malaysia. Therefore, the main purpose of our paper is to investigate the effect of health consciousness, environmental concern, and innovativeness on health-conscious consumers’ food purchase intentions and consequently improve their healthy lifestyle. This study offers empirical evidence which could help policymakers and Malaysian and Indonesian citizens to increase the use and purchase of organic food product which will certainly improve their healthy lifestyle.

2. Literature Review

2.1. A Conceptual Framework and Hypotheses Development

In this paper, the TPB model was used as a theoretical foundation to elucidate organic food purchase intention among health-conscious consumers in Malaysia and Indonesia (25). The TPB was developed in 1991 by Ajzen from the former (26) theory of reasoned action. The TPB states that a particular behavior of an individual is drive by an individual intention to perform that action (25). The intention mirrors individual motivations and cognitive preparation for performing the behavior. The intention is determined by three vital factors of subjective norm, attitude, and perceived behavioral control (25). Attitude mirrors the negative or positive assessment of the individual behavioral consequences (27). Subjective norm mirrors how the individual perceived social pressure influence the performance of a particular behavior, whereas perceived behavioral control is associated with the person’s perception of his/her capability to perform that particular behavior. The TPB variables were proved to be important predictors of a variety of food choices including organic foods purchase (18–21). Figure 2 depicts that the three fundamental

factors of individual behavior: subjective norm, attitude, and perceived behavioral control are fundamental antecedents of individual intention to perform a particular behavioral intention, and consequently mediate these antecedents with individual actual behavior (28).

The present paper aims to investigate factors that influence healthy conscious consumers' purchase intention of organic food, TPB is used as the foundation of the current study because of its robustness and wide applications in understanding consumer purchase decisions in various studies (19–21). For instance, if health-conscious consumers have a positive attitude to engage in a particular behavior (e.g., purchasing organic food), and believe the approval and support of friends and family to purchasing organic food, then health-conscious consumers are more expected to perform the actual behavior of the purchase (29). Concerning the TPB predictive power in the existing literature especially in the context of organic food purchase, the TPB explained a 24% variance of the individuals' intention to purchase organic food (30) and 83% in the study of Thøgersen, (31). TPB also explained 82% variance of the individuals' intention to purchase organic food in the study of Tarkiainen and Sundqvist (32). Dowd and Burke (33) also established the robustness of this model in investigating organic food purchases explaining 62% variation in intention.

Within the framework of organic food purchase intentions, nevertheless, two major types of investigations can be differentiated: studies from marketing context that are largely paying attention to the comprehension of consumers' motivations and those largely paying attention from industrial ecology that is typically concerned in the impact of individual consumer's behaviors (34,35). While the subsequent approach centered on the outcome of individual behavior, the earlier examines the motivations behind the behaviors. Therefore, following the first approach, an extensive variety of studies within the organic food purchase literature has used TPB (36) as the theoretical foundation for examining the various factors that make healthy conscious consumers' behavioral intentions towards the purchase of organic food products (19–21).

Prior studies point out that health-conscious consumers are more expected to pay a high premium for the quality of organic foods products (18–22). Given the fast and accelerated buying and sales of organic foods products, understanding the important antecedents that influence health-conscious consumers' organic food product purchase intentions is necessary for producers of organic products, marketing specialists, green restaurateurs, suppliers, and policymakers to apply thriving strategies. Reviewed of the earlier literature reported that health-conscious consumers' motives of purchase intentions of organic food include wholesome lifestyle, health concerns, concerns of the environment, food safety concern, and protection of animal welfare, among others. Very limited studies investigated the influence of health consciousness, environmental concern, and innovativeness on healthy conscious consumers' food purchase intentions. Using TPB, this study not only incorporated health consciousness, environmental concern, and innovativeness as antecedents of purchase intentions but also added a healthy lifestyle as the outcome of health-conscious consumers' purchase intention in Asia. The conceptual framework was in Figure 2.

2.2. Purchase intention

In psychological research, human behaviors are generally considered measurable and observable (37). The psychologies categorized human behaviors to include individual attitudes, his/her thoughts, beliefs, perceptions, and intentions (37). The word "intention" is defined differently across studies by various authors. Ajzen (38) offered the most generally accepted definition of behavioral intention as "indications of a person's readiness to perform a behavior" (p. 1122). Interestingly, the main focus of this paper is to study the antecedents of health-conscious consumers' intention to purchase organic food products in Asia. A range of empirical studies recognized that consumers' behavioral intentions to purchase a particular product are the major determinant of their actual behavior (23). For example, Ajzen (28) reported that the most vital factors that decide consumers' actual purchase of a particular product are the consumers' intention. Consumers' behavioral intentions variable is widely researched to understand various factors that influence consumers' purchase of organic products (39).

In the Ajzen TPB model, the intention is referred to as the consumers' willingness, effort, and plan toward purchasing a product (19,20,28). In other words, consumers' intentions specify their maximum likelihood to engage in a particular action soon (28). Spears and Singh (40) refer to consumers' purchase intention as "an individual's conscious plan to make an effort to purchase a product". Organic food purchase intention is defined as the health-conscious consumers' readiness and willingness to purchase organic food products articulated by the consumers for the friendly to the environment and have health benefits (39). In

other words, consumers who are willing to purchase organic products are mainly concerned about the products' ecological quality and the consequences of the environment related to their purchasing decision (19–21).

The organic food products industry is growing rapidly in Indonesia and Malaysia, as demand has increased because of health-conscious consumers' growing awareness regarding the health benefits of consuming organic food (34,35). Since health-conscious consumers consider eating organic food as advantageous to their health, their positive attitudes have drastically influenced their purchase intention (21,35).

2.3. Health consciousness

Due to the pandemic crisis, it is important to conceptualize e-health literacy to understand better health consciousness among consumers (41). Chen (42) opined that health factors such as health consciousness should be considered while making organic food purchasing decisions. This is because one of the major motives for consumers to buy organic food is for their health (43). Likewise, the motivation of consumers towards health-related food such as organic food is to prevent them from disease or improve their health and thus, is one of the important factors for purchase behavior and intentions (24,42). Health consciousness refers to individuals' readiness to take on healthy actions or behavior that will improve their health rather than taking on the general unhealthy consumption patterns (42,43). In other words, health consciousness refers to the motivational elements that encourage consumers to carry out health actions (44). Consumers who have health-conscious in purchase decisions are usually aware and concerned regarding their health and wellness. Additionally, these consumers are self-conscious about their health and are motivated on any purchase decision to enhance and/or maintain their health, healthy lifestyle, and quality of life (42).

Compared with consumers high in health consciousness, consumers low in health consciousness have less motivation to engage in healthy actions (42,43), choose unhealthy foods (42–44). Forthofer and Bryant (45) opined that consumers high in health consciousness are considered as "targets of greatest opportunity" (p. 37) since such consumers are more expected to engage in healthy actions, are considered to buy organic food that includes higher nutritional values because of health advantages involved (42–44). Healthy conscious consumers used to express interest in matters concerning food to avoid any food that is dangerous to their health and wellbeing (42). Thus, when making purchase intentions, healthiness is a significant determinant and the parameters for these consumers (46). Earlier empirical studies reported that a consumer's health consciousness is significantly and positively linked with his/her purchase intention toward organic foods (42,47,48). Therefore, the following hypothesis is advanced:

Hypothesis 1: Health consciousness has a positive and significant effect on the purchase intention

2.4. Environmental Concern

Environmental Concern has received a lot of attention in both academia and business because of the increase in air pollution due to carbon dioxide emission (49). Environmental behaviorists always treated the environmental concern construct as an individual consumer's degree of concern related to environmental matters (50). Lee (51) defined environmental concern as consumers' assessment of environmental factors deciding to buy a particular product or service and reported environmental concern influences consumers' purchase intention. Therefore, the environmental concern construct is vital in understanding consumers' purchase intention of organic product that is friendly to the environment. Even though consumers' environmental concern is new inclinations that can be influenced by other factors (52). Kaygusuz (49) reported that consumers' environmental concern is linked with such factors as knowledge, education level, and experiences. For example, consumers' positive feelings acquired through experiences in his/her natural environment can motivate environmental concerns (22,52). Similarly, the state of the natural surroundings can affect consumers' environmental concerns. A typical example of this is China's air pollution. Consumers are said to be high in environmental concern if they identify the impact of their activities or actions on the natural environment (52).

In the context of food consumption, more consumers are nowadays vegetarians compared to a few years back (53). Consumers are not only adopting a vegetarian lifestyle because of health concerns, consumers now are accepting a vegetarian lifestyle because of the environment (49). Organic food products, which are produced using natural farming techniques, decrease the contamination of groundwater and the soil because pesticides and fertilizers that are destructive to the environment are not applied to the soil. Earlier studies reported that organic product consumers buy organic food by considering environmental

issues (53). Prior investigations submitted that environmental concern is directly and significantly influences consumers' attitude towards organic products (22,52) and consequently influences their purchase intention (50). The idea is that high environmental concern consumers are always and directly have a positive attitude toward organic food which increases their level of purchase intention. Therefore, the following hypothesis is advanced:

Hypothesis 2: Environmental concern has a positive significant effect on the Purchase intention

2.5. Consumer Innovativeness

Innovativeness is a consumer innate which refers to the "predisposition to buy new and differentiated products and brands rather than remain with previous choices and consumer patterns" (54). Innovativeness can also be seen as individuals' predisposition to willingly accept change and/or attempt new products or services rather than taking on the general unhealthy consumption patterns (55,56) and willingly buy new products/services more quickly and frequently than others (56). Therefore, consumer innovativeness is referring to the consumers' desire to look out for novelty and arousal from particular new products/services (56). Midgley and Dowling (57) conceptualized consumer innovativeness as the extent to which consumers are receptive to new products/services, ideas, and choose to accept new technology not considering the other consumers' experiences. Venkatraman, (58) categorizes innovativeness in two: sensorial and cognitive innovativeness. Cognitive innovativeness is the consumers' predisposition to rationalize, reflect, and solve problems. In this case, the consumers are always looking for a novel experience that possibly will arouse their mental actions or activities. Moreover, it is fruitful to note that manufacturers should increase their entrepreneurial skills and acquisition (59) in providing better health services to health-conscious customers.

Healthy conscious consumers concurrently consider product assimilation and differentiation while intending to purchase a particular product or service (54). The tendency to accept unconventional lifestyles is what differs from health-conscious consumers to conservative consumers (56,60). Health-conscious consumers are generally willing to try a new product such as organic food can be described as "global consumer innovativeness" (56,60). Consumer innovativeness is likely to be determined by novelty-seeking, need for uniqueness, and stimulation needs (56). Earlier studies have established consumer innovativeness construct as a significant factor affecting consumers' product adoption especially organic food (56,60). Thus, innovative consumers are more likely and easily accept new products/services and/or technologies (56). Besides, innovative consumers of organic food generate high attitudes related to organic food attributes compared with conservative consumers (55). Given that, consumer innovativeness level, which is regarded as a consumer's characteristic (57), could positively affect the linkage between consumers' product innovativeness and organic food purchase intention in this study. Therefore, the following hypothesis is advanced:

Hypothesis 3: Consumer innovativeness has a positive significant effect on the Purchase intention

2.6. Healthy lifestyle

A healthy lifestyle refers to the customers' modifications in health behavior following the constant purchase of organic food (61). In this study, a healthy lifestyle refers to behaviors that health-conscious customers consider and accept which sustain their well-being such as constant intake of organic products (62). For instance, a healthy lifestyle includes controlling weight and regular eating of organic fruits or organic vegetables (61,62). A healthy consumption lifestyle is consumer orientation towards the prevention of product that causes health problems(63). Therefore, a healthy consumption lifestyle is the customers' consumption activities and actions which include consumption of organic food for better health and life prosperity (64). Healthy conscious consumers are more likely to make efforts and activities that are beneficial for their health, reducing body weight by doing sports activities, consuming organic food that will enhance their healthy lifestyle (64). Since they have a positive attitude and intentions toward purchasing organic food products. Therefore, organic food products are important for consumers' healthy lifestyles.

Customers who consider the health benefit of a product, taste, and environmental protection and consider improving their lifestyle are the potential customers and consumers of organic food (14,61). Customers from the healthy lifestyle category are orientated toward health and are pleased with the lifestyle that concentrates on health (14). In consumer behavior literature, scholars' reported that consumers' lifestyle will decide their consumption attitude and behavior towards purchasing organic food (14,65). In

their study, scholars (65) advocated that a healthy lifestyle influences a healthy conscious customer's behavioral intention towards organic and environmentally friendly products. Their findings are in line with the finding of Sagheb, Ghasemi, and Nourbakhsh (66) and Güney, and Giraldo (64) that reported a healthy lifestyle is positively related to a health-conscious consumer's attitude towards the organic product. Hence, the higher the health-conscious consumers' propensity to eat organic food that will improve their healthy lifestyle, the high the consumers' intention to purchase organic products. Therefore, the following hypothesis is advanced:

Hypothesis 4: Purchase intention has a positive significant effect on the Healthy lifestyle

2.7. Brand credibility identifications

The concept of credibility is generally distinguished as the trustworthiness of an entity's (e.g., brand) intents at a specific instance (67). Scholars have conceived credibility mainly based on two dimensions: (1) trustworthiness, and (2) expertise (68). Ergo, brand credibility has been described as the believability of the product information enclosed in a brand, which necessitates that consumers recognize that the brand has the expertise (e.g., ability) and trustworthiness (e.g., intents) to constantly offer what has been pledged (68,69) Thereby, consumers identify the brand's credibility by engaging in an appraisal mechanism that outlines the cumulative credibility of a brand (70). According to the brand signaling theory, consumers identify the credibility based on the underlay produced by the brand's echoed expertise and trustworthiness. This phenomenon indeed involves the aggregated influences attached to the brand's past and present communicated commitments and marketing strategies that symbolize credibility to the consumers (71). The consumers evaluate the informational content of the brand to evaluate or identify its credibility. On the other hand, a plethora of literature suggests that brand function as an indicator has clarified that brand credibility can be eroded if a brand does not provide what has been promised (71,72) The trust determination theory also sheds light on the significance of the credible source of the information, it emphasizes that information from a trustworthy source can formulate favorable behavior (73). Since the information impending from the brand appraised as credible by the consumer can diminish the suspicions and lead them to act favorably.

Most of the consumer behavior research also affirmed that brand credibility identification is a prevailing psychological phenomenon that prompts the purchasing instinct of consumers (72). For instance, studies have explored the brand credibility positively predicts behavioral outcomes such as consumer satisfaction (71,72) and purchase-making decisions (74). However, from the risk communication perspective, owing to health safety potential apprehensions consumers' take more conscious decisions about the selection of innovative food products (71,73). Psychological theories such as the heuristic-systematic enlightened that individuals do not only be influenced by the communicated product information but also contemplate the source of information (e.g., brand credibility) (71). The information processing mechanism, thus, includes the evaluation of the brand credibility that serves as a functional cue to reduce apparent uncertainties. Lassoued and Hobbs (74) described that food consumers sense more confidence about brands that have a good reputation for food safety. Within the food consumption context, the literature suggests that brand credibility has a substantial influence on consumers' buying behavior (67) consumer trust in the usage of innovative foods (75), and reduction in food safety concerns (76). Therefore, a higher level of consumer perceived identification of brand credibility generates more inclination towards purchasing the Healthy foods' product and we hypothesized that:

Hypothesis 5: Brand credibility identification has a positive significant effect on the Healthy foods' purchase intention

2.8. Brand Image Identifications

Brand image is an aggregate term that represents the consumers' overall perceptions, feelings, uniqueness of associations, favorability, beliefs, appraisals about a brand developed through their experiences (77,78). The consumer identifies brand image by inferring the association, attitude, belief, evaluation, and overall impression of a brand (79). Therefore, brand image is associated with consumers' understanding of the brand that develops over time and characterizes the symbolic meaning of consumption to them (80). Alamsyah, Othman, and Mohammed (81) noted that brand image reflects a unique identification to consumers from other counterparts' brands in the marketplace. Hence, a favorable brand image is indispensable for the brands concerning consumer behavior (82). In this regard, it plays a significant role in assisting consumers to make purchasing decisions

whether to purchase or repurchase a particular (81). Therefore, brand image is an all-inclusive demonstration of numerous aspects of the brand in the minds of consumers (83). According to Hien, Phuong, Tran & Thang (54) the consumer responses to a brand's marketing practices are constantly determined by an affirmative association between a brand and its anticipated characteristics symbolic meanings in the minds of consumers.

In verily, setting up a good brand image identification is an imperative undertaking of food marketers and enterprises (82). Consumers when encounter marketing activity of a brand with a prior positive image, it is utmost expected they will undergo to purchase (84). In the context of food marketing, ample research has been carried out that affirms the brand image drives the consumers' inclination towards purchasing organic food (85) genetically modified food (86,87), and bio-fortified food (81,88). The literature suggested that a favorable brand image helps food products to gain a competitive advantage and on purchase intention (54,79). Similarly, another recent study on food marketing noted that brand image is established to contribute a positive influence on consumer food purchase intention (80). Several studies on healthy food consumers' behavior suggest that consumers are motivated to purchase once they identify the brand's image based on its established traits and characteristics (85,87). Hence, greater brand image identification will positively influence the consumers' intention to purchase healthy food and it is hypothesized that:

Hypothesis 6: Brand image identification has a positive significant effect on the Healthy foods' purchase intention

3. Method And Materials

3.1. Health online community

Facebook was launched in October 2003 by Mark Zuckerberg. In February 2010, 400 million users have registered with Facebook. Then, community pages were announced on Facebook in April 2010. Currently, Facebook has 2.85 billion monthly active users (89). Facebook allows us to share text and visual content about users' daily lifestyles including health and fitness. The healthy foods and healthy lifestyle community on Facebook are chosen as the focus of this study. The data were collected on social media Facebook to test the research model.

The study was granted ethical approval by the Research Ethics Committee of the Universiti Putra, Malaysia and signed informed consent was obtained from the subjects 18+ years of age for data to be used for research purposes. Furthermore, all methods were carried out in accordance with relevant guidelines and regulations.

3.2. Measurement and validity

Based on the literature review, the design of questionnaire items was stemmed. The seven variables were measured using Likert scales, with a total of 42 items. All items used five-point Likert scales. The details about all items can be found in Table 1. To augment the content validity of this questionnaire, 30 experts were contacted to participate in this study. Only 10 experts were responded and validated this questionnaire. Then, we revised the questionnaire based on experts' feedbacks. Finally, the pilot study took place before actual data collection.

Survey data were collected online for a period of three months from January to March 2021. Hired enumerators posted the link to the questionnaire on their own Facebook accounts to the selected online healthy communities such as '*Diet Suku Suku Separuh'* (469,000 followers), 'Hiking, and Camping around Malaysia' (351,200 followers), and 'Healthy Malaysia' (332 followers). The enumerator also engaged with the online community by liking posts and following health accounts. A total of 241 questionnaires were received and validated for analysis.

Table 1: Items by construct

Constructs	Number of items	Sources
Healthy Foods' Purchase Intentions	6	Shin & Severt (2020); Yazdanpanah, & Forouzani (2015)
Health Consciousness	8	Ali, et. al. (2020); Smith & Paladino (2010)
Environmental Concern	6	Lee (2008)
Consumer Innovativeness	6	Zhang, et al. (2020)
Brand credibility	5	Spry et. al. (2009)
Brand Image	5	Cretu & Brodie (2009)
Healthy Lifestyle	6	Güney & Giraldo (2019)

3.3. Data collection and sampling

4. Results

4.1. Descriptive Statistic

The sample descriptive statistics show that the majority are female (66.6%) while male respondents consisted of 33.3%. with regards to the respondents' nationality Table, 1 reported majority are Malaysian (83.8), while International respondents consisted of 16.2%. with regards to the respondents' race, the majority are Malay (45.6%). The age of the respondents also shows the majority are within the range of 19 to 29 years (41.5%). The marital status of the respondents reported in Table 1 shows that majority are single (51.5%). Concerning the respondents' educational qualifications, the majority have Bachelor's degree (42.3). The respondents' income shows that the majority have below RM3000 (35.3%).

4.2. Measurement Model: Individual Items Reliability and Internal Consistency Reliability

In this study, item reliability was assessed using factor loadings (refer to Table 2). In this study, all items loaded above 0.7 only a few items reported loadings below above 0.6 which is acceptable (Barclay, Higgins, & Thompson, 1995) (refer to Table 2 and Figure 1).

Table 2 Factor Loadings, Composite Reliability, and Average Variance Extracted

Constructs	Items	Loadings	CR	AVE
Brand credibility identifications	BC1	0.842	0.947	0.782
	BC2	0.913		
	BC3	0.914		
	BC4	0.885		
	BC5	0.864		
Brand Image Identifications	BI1	0.882	0.950	0.792
	BI2	0.883		
	BI3	0.882		
	BI4	0.886		
	BI5	0.916		
Consumer Innovativeness	CI1	0.836	0.926	0.677
	CI2	0.783		
	CI3	0.856		
	CI4	0.806		
	CI5	0.814		
	CI6	0.840		
Environmental Concern	EC1	0.733	0.888	0.573
	EC2	0.862		
	EC3	0.844		
	EC4	0.787		
	EC5	0.678		
	EC6	0.606		
Health Consciousness	HC1	0.703	0.897	0.521
	HC2	0.704		
	HC3	0.714		
	HC4	0.688		
	HC5	0.761		
	HC6	0.740		
	HC7	0.674		
	HC8	0.784		
Healthy Foods' Purchase Intentions	HFPI1	0.843	0.919	0.656
	HFPI2	0.817		
	HFPI3	0.855		
	HFPI4	0.775		
	HFPI5	0.765		

	HFPI6	0.799		
Healthy Lifestyle	HL1	0.689	0.840	0.513
	HL2	0.713		
	HL3	0.713		
	HL4	0.682		
	HL6	0.779		

Note: AVE = Average variance extracted CR= Composite reliability

The Internal consistency reliability was measured using composite reliability (90). Table 2 reported that all the constructs exhibit adequate internal consistency above 0.7 as requirements (Hair et al., 2013). With regards to the convergent validity, convergent validity in this study was determined using composite reliability (CR), and average variance extracted (AVE). As shown in Table 2, CR is higher than 0.7 and AVE is higher than 0.5 (91) (refer to Table 2 and figure 3).

4.3. Discriminant Validity

In this study, discriminant validity was measured using the HTMT ratio as this method was reported as the reliable method for measuring discriminant validity (92). The HTMT ratio reported that discriminant validity was satisfied in this study. The HTMT values were within the yardstick of 0.85 (92) (refer to Table 3).

Table 3: Discriminant Validity Heterotrait-Monotrait Ratio (HTMT)

Constructs	1	2	3	4	5	6
1. Brand Image Identifications						
2 Brand credibility identifications	0.827					
3 Consumer Innovativeness	0.329	0.482				
4 Environmental Concern	0.328	0.382	0.292			
5 Health Consciousness	0.371	0.425	0.443	0.611		
6 Healthy Foods' Purchase Intentions	0.296	0.415	0.765	0.412	0.447	
7 Healthy Lifestyle	0.343	0.382	0.315	0.503	0.698	0.258

4.4. Analysis of the Structural Model

To test the path coefficients' significance, a bootstrapping was employed via 5000 subsamples which provide t-values and p values of the parameters (93). Regarding the R2 values, the study model explains 53.3 percent of the Healthy Foods' Purchase Intentions identifications variance. Therefore, Brand credibility identifications, Brand Image Identifications, Consumer Innovativeness identifications, Environmental Concern Identification, and Health Consciousness identifications were significant contributors to the prediction of Foods' Purchase Intentions in this study (Refer to Figure 1). Also, the study model explains 5.2 percent of Healthy Lifestyle identification which is reported by the R2 values (Refer to Figure 4). Therefore, Purchase Intentions identifications explain 5.2 percent on Healthy Lifestyle identification.

The study model predictive relevance (Q^2) (94) is greater than zero indicate adequate model predictive relevance (94). The findings of this study confirmed that the Q^2 value for the dependent variables is acceptable (Healthy Foods' Purchase Intentions identifications = 0.319) and (Healthy Lifestyle identification = 0.020). Another criterion to assess the structural model is the effect

size (f^2). Cohen (1988) classified f^2 of 0.02, 0.15, and 0.35 as small, medium, and large respectively. The f^2 shown in this study is an acceptable range mainly large and small based on Cohen's (1988) classification (refer to Table 4).

The findings indicated that no positive relationship exists between Brand Image Identifications and Healthy Foods' Purchase Intentions identifications (β=0.005; t =0.074; p = 0.941). In addition, no positive relationship exists between Brand credibility identifications and Healthy Foods' Purchase Intentions identifications (β=0.020; t =0.220; p = 0.826). (Refer to table 5). The findings indicated that a positive relationship exists between Consumer Innovativeness identifications and Healthy Foods' Purchase Intentions identifications (β=0.636; t =11.405; p = 0.000).

Table 4: Structural Model Assessment Direct Effect

Relationships	Beta Values	Standard Deviation	T Statistics	P Values	Decision
Brand Image Identifications -> Healthy Foods' Purchase Intentions identifications	0.005	0.071	0.074	0.941	Not Support
Brand credibility identifications -> Healthy Foods' Purchase Intentions identifications	0.020	0.091	0.220	0.826	Not Support
Consumer Innovativeness identifications -> Healthy Foods' Purchase Intentions identifications	0.636	0.056	11.405	0.000**	Supported
Environmental Concern Identification -> Healthy Foods' Purchase Intentions identifications	0.156	0.061	2.546	0.011*	Supported
Health Consciousness identifications -> Healthy Foods' Purchase Intentions identifications	0.047	0.067	0.700	0.484	Not Support
Healthy Foods' Purchase Intentions identifications -> Healthy Lifestyle identification	0.228	0.065	3.519	0.000**	Supported

This finding shows that the respondents who rated Consumer Innovativeness identifications higher also indicated higher scores on the Healthy Foods' Purchase Intentions identifications scale. (Refer to table 5). The findings indicated that a positive relationship exists between Environmental Concern Identification and Healthy Foods' Purchase Intentions identifications (β=0.156; t =2.546; p = 0.011). This finding shows that the respondents who rated Environmental Concern Identification higher also indicated higher scores on the Healthy Foods' Purchase Intentions identifications scale. (Refer to table 5). The findings indicated that no positive relationship exists between Health Consciousness identifications and Healthy Foods' Purchase Intentions identifications (β=0.047; t =0.700; p = 0.484) (Refer to table 5).

Table 5: Structural Model Assessment Indirect (Mediating) Effect

	Beta Values	Standard Deviation	T Statistics	P Values	97.5%	97.5%	Decision
Brand Image Identifications -> Healthy Foods' Purchase Intentions identifications -> Healthy Lifestyle identification	0.001	0.019	0.064	0.949	0.042	0.040	Not Supported
Brand credibility identifications -> Healthy Foods' Purchase Intentions identifications -> Healthy Lifestyle identification	0.005	0.024	0.195	0.846	0.050	0.055	Not Supported
Consumer Innovativeness identifications -> Healthy Foods' Purchase Intentions identifications -> Healthy Lifestyle identification	0.145	0.040	3.676	0.000**	0.235	0.213	Supported
Environmental Concern Identification -> Healthy Foods' Purchase Intentions identifications -> Healthy Lifestyle identification	0.036	0.021	1.660	0.097	0.091	0.082	Not Supported
Health Consciousness identifications -> Healthy Foods' Purchase Intentions identifications -> Healthy Lifestyle identification	0.011	0.019	0.560	0.575	0.061	0.052	Not Supported

Note: **Significant at 0.01 (1-tailed), *Significant at 0.05 (1-tailed)

The findings indicated that a positive relationship exists between Healthy Foods' Purchase Intentions identifications and Healthy Lifestyle identification (β=0.228; t =3.519; p = 0.000). This finding shows that the respondents who rated Healthy Foods' Purchase Intentions identifications also indicated higher scores on the Healthy Lifestyle identification scale. Finally, Healthy Foods' Purchase Intentions identifications were found to mediate the relationship between Consumer Innovativeness identifications and Healthy Lifestyle identification in this study (β=0.145, t =3.676, p =000). Surprisingly, no mediation effect of Healthy Foods' Purchase Intentions was found in this study on the relationship between Brand credibility identifications, Brand Image Identifications, Environmental Concern Identification, and Health Consciousness identifications on Healthy Lifestyle identification (Refer to table 6).

Table 6: Effect Size

Constructs	Healthy Foods' Purchase Intentions identifications	Healthy Lifestyle identification
Brand Image Identifications	0.000	
Brand credibility identifications	0.000	
Consumer Innovativeness identifications	0.629	
Environmental Concern Identification	0.037	
Health Consciousness identifications	0.003	
Healthy Foods' Purchase Intentions identifications		0.055

5. Discussion

Prior literature has contributed to developing an understanding of organic and healthy food consumption. These studies underpinned several antecedents of such as health consciousness (20) brand trust (95) and environmental concerns (50) that

predict the purchasing intention towards organic food (12) nutrients food (13). However, interestingly most of these studies only researched whether the social factors (22, 39) or individual psychological traits (24, 42) or branding factors (71) in determining healthy food consumption. These studies endure a void in the literature and to our knowledge, no prior studies integrated these facets to understand the phenomenon of food consumption. These studies theoretically argue that consumers are equally influenced by multiple factors. For example, according to trust determination and brand signaling theory when a consumer encounter coming information from a brand, the consumer evaluates the information based on the prior acquired level of trust about the brand (73). At the same time, the theory of planned behavior maintains that such individual positive predispositions influence their purchase intentions (39, 96). Similarly, the individual traits notion suggests that individual traits such as environmental concerns influence one's behavior. As mentioned earlier, fewer studies have been conducted to understand the combined effect of this crucial factor (42). Drawing on the analogy of previous research, the current study integrated these perspectives in a single study to understand the phenomenon of healthy lifestyle adoption.

The study examined several hypotheses using PLS (SEM) approach, the outcomes of H1 revealed interesting information that health consciousness not significantly predicts the purchase intention of healthy food. These results are although not consistent with prior studies that recommended health consciousness as a potential antecedent of purchase intention of healthy food (24, 47, 48). However, prior Terror management theory (TMT) noted that "fear of death haunts the human mind" thereby, individuals' extent of consciousness is related to the degrees of threat they feel (97). The results are not surprising in the context of the TMT standpoint because the underpinning question of this research is about a generally healthy lifestyle. Furthermore, information-seeking theories also justify these results, for instance, findings of studies on serious diseases reported entirely different aspects. People are found more concerned about their health and seek more information when they feel more threatened (i.e., cancer), this, in turn, improves their level of health consciousness (19, 22). Furthermore, people are exposed to a lot of marketing activities by other different food brands advocating their safety and nutritional value. Hence people may have perceived other foods are also safe and pose fewer threats to their health. In contrast, findings of the influence of the environmental concerns posited in H2 were supported and found consistent with prior studies (53). This suggests that people perceive organic food as more sustainable consumption and production phenomenon. In a similar vein, the most interesting results have been revealed about the influence of consumer innovativeness characteristics that has a positive direct influence on the purchase intention. Scholars (55, 56) referred to one's innovativeness characteristics as individual traits. The persons who uphold these traits are always inclined towards the adoption of novel and innovative products. To this point, the hypothesized proposition of this study has been verified and can be concluded that the sample has perceived the organic products as more novel than the accessible prior products and hence, supported the favorable purchasing behavior (72).

Despite the growing recognition of the significance of brand credibility and brand image in marketing literature, little efforts have been made to investigate how consumers perceived brand credibility and brand image influence food consumption patterns. The past literature applying theories such as brand signaling theory (69, 71) and trust determination (73) recommends that brand credibility and brand image identification of products are critical to comprehend consumer behavior (77). This study employed a holistic background that investigates the influence of these branding elements on the purchase intention of organic food brands. However, PLS (SEM) findings do not support the postulations proposed. Apparently, these findings are in contradictions with the prior studies and branding theories such as brand signaling theory that advocates the associations of brand credibility and image with consumers' intention (72). Moreover, most of the past research identifying the strong relationship between brand credibility and image has been carried out in the western context (70). Since the context of healthy food (i.e., organic) is quite novel in Asian markets and brands have to still undergo marketing practices to develop brand awareness. However, H6 has supported the direct influence of purchase intention of healthy food on the adoption of a healthy lifestyle. This was quite obvious as several factors contribute to the formulation of purchasing behavior.

Lastly, considering very limited marketing practices of organic food brands in Asian markets the mediating influence of healthy Foods' Purchase Intentions identifications was not identified as a mediating variable among the relationship between Brand credibility identifications, Brand image identifications, environmental concerns, and health consciousness identifications. Only, mediation of healthy Foods' Purchase Intentions was found significant between consumer Innovativeness identifications and healthy lifestyle identification. Although this is quite surprising seemingly, there are very few brands available in the market and indeed consumers are less engaged in buying healthy food. Interestingly, those consumers with a higher degree of innovativeness

are inclined to do so, in contrast, results depict that consumers are uncertain about the benefits of healthy food usage. This is consistent with theories that imply consumers' brand awareness and contextual factors play their part in developing consumer behavior (95).

5.1. Managerial Implications

Besides, conceptually the health consciousness includes extensive facades such as individual lifestyles, interests, and interpretations about own health (18,20). Still, these results have the important managerial implication that people are not well conscious about the benefits of using organic food. In the case of Asian markets, there are very few companies operating and providing information about the usage of healthy food. Most of the information available through less credible sources such as online platforms. This, in turn, increased the uncertainties among the people, the results of current studies suggest that brands may adopt crisis marketing strategies while prompting healthy lifestyle products. On the other hand, government and non-government organizations also may make people more conscious using several means of communication. For example, results suggest that people are not health conscious and reluctant in adopting healthy food patterns. To illustrate more, Malaysia is ranked among the nations that have a higher ratio of diabetes due to obesity among people. Therefore, the promotion of healthier food is becoming a public health issue and must be administrated by promoting more awareness. Likewise, obesity, there are certainly other issues such as iron, vitamin, and mineral deficiencies that are linked with unhealthy food consumption and quite common in the Asian region. The psychological terror management model suggests that when people realize the scarcity they adopt new habits (97). Thus, it is recommended that organizations must aware of the people about pros of adopting healthier lifestyles. Furthermore, the promotional campaigns also highlight the growing deficiencies drawbacks to one's health so that people adopt a healthier lifestyle.

6. Conclusion

The motivation of the study is due to the high number currently obsessed or overweight in Asia. Specifically, Malaysia and Indonesia make it necessary for the researchers to understand the antecedents and outcomes of health-conscious consumers' purchase intentions of organic food products. As an important area in green product research, organic food purchase intentions of consumers have received more research attention. This paper is set out to developed and proposed a conceptual framework for healthy organic foods' purchase intention. This paper is planned as a guide for future studies to use and validated as a foundation for quantitative studies to investigate the health-conscious consumers' purchase intentions of organic food products. Drawing on TPB, the antecedents and outcomes of health-conscious consumers' purchase intentions of organic food products healthy lifestyle among the citizens of Asian countries were reviewed and research hypotheses were offered. Finally, recommendations will be offered to various stakeholders on how to improve a healthy lifestyle in Asia. This conceptual analysis applied TPB as a basis to develop the antecedents and outcomes of consumers' purchase intentions of organic food products among the citizens of Asian countries. This conceptual model proposed that health-conscious consumers' health consciousness, environmental concern, and innovativeness will predict health-conscious consumers' food purchase intentions and consequently improve their healthy lifestyle. Future research will have to consider encouraging corporate engagement with communities (98) may influence the communities' healthy lifestyle. Beyond the brand image of health products, improving favorable corporate reputation (99, 100) of healthcare companies may lead to a higher degree of healthy organic foods' purchase intention theoretically. Indeed, this study if validated it will offer empirical evidence which could help policy-makers and Malaysian and Indonesian citizens to increase the use and purchase of organic food product which will certainly improve their healthy lifestyle. Moreover, internalizing cultural diversity (99, 101) and mental health (102) among Malaysian and Indonesian people can be a central focus of future study in the healthcare industry in Asia.

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Figures

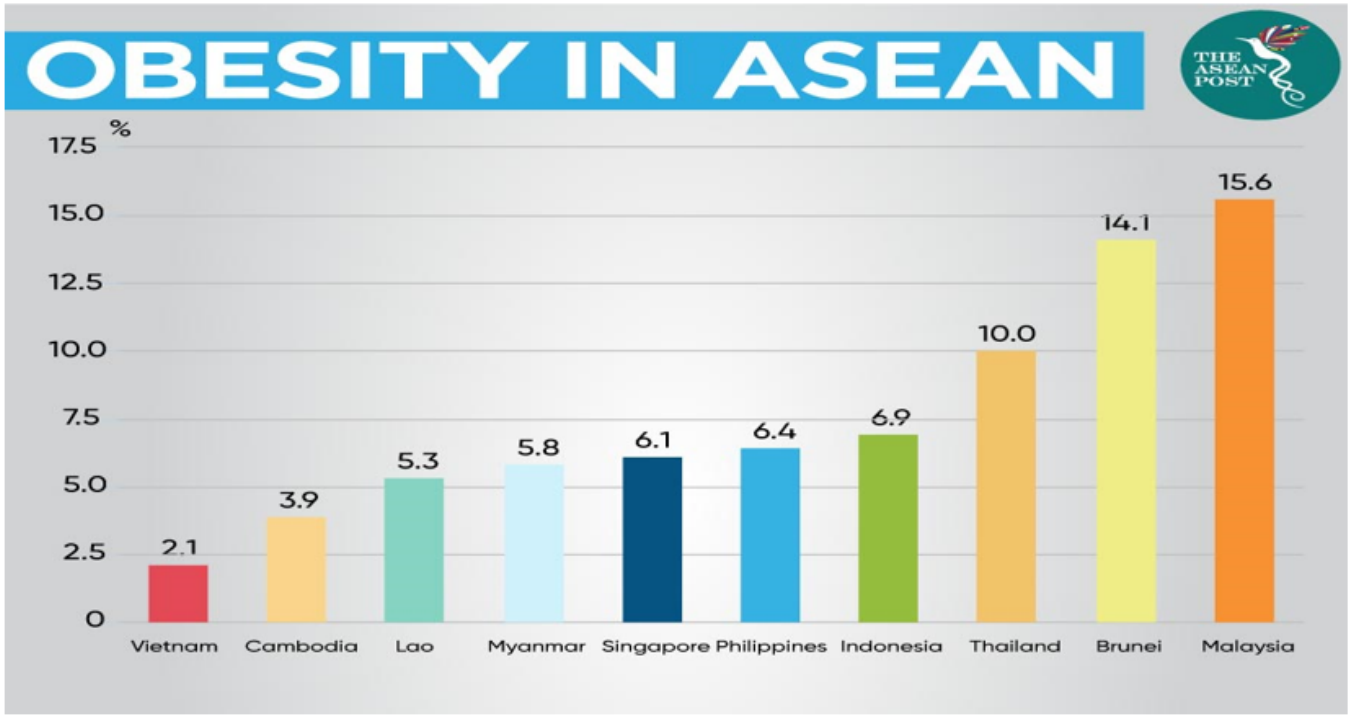

Figure 1

Obesity in Asia, Source: World Population Review, 2020

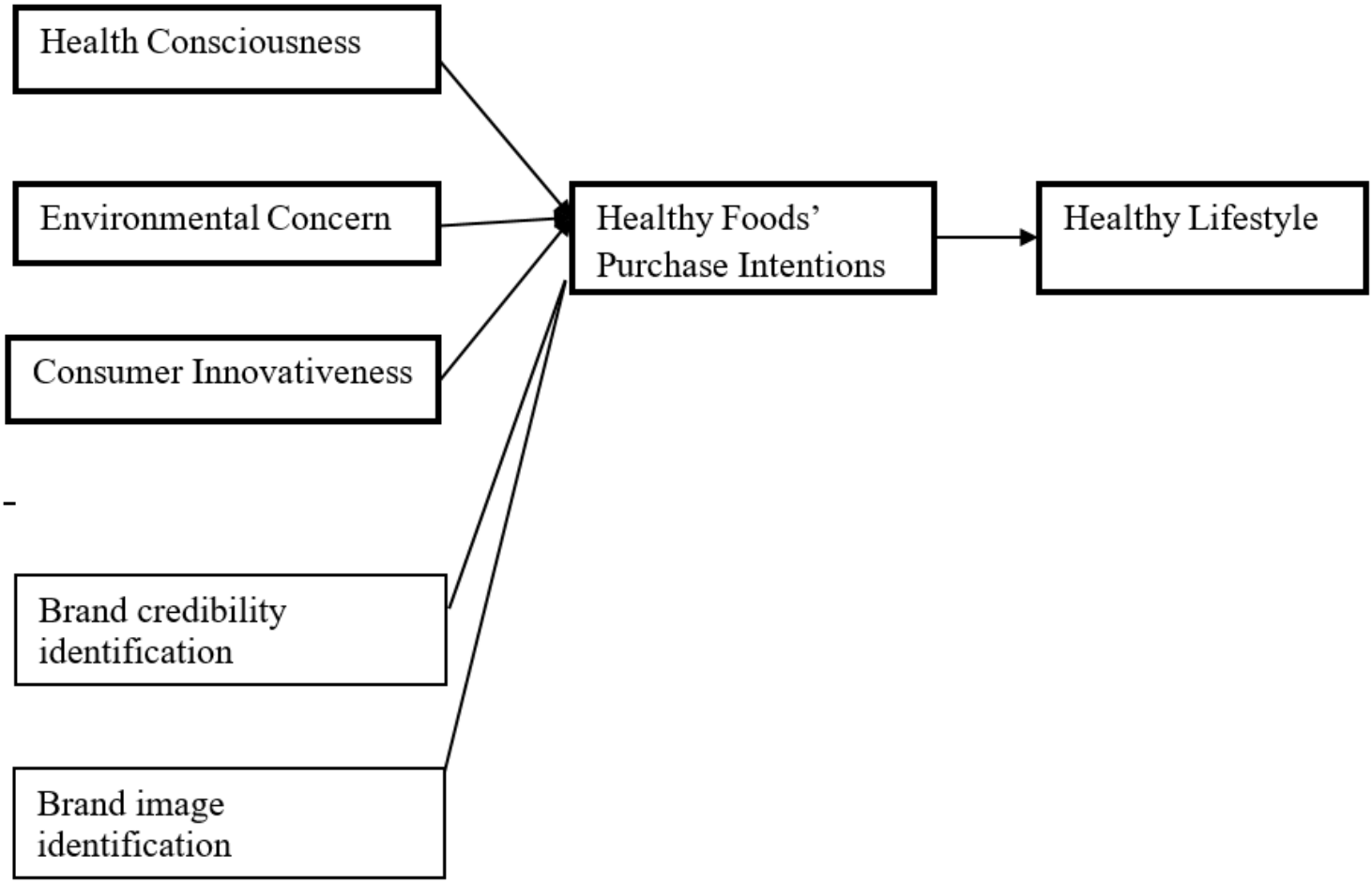

Figure 2

Proposed Conceptual Framework

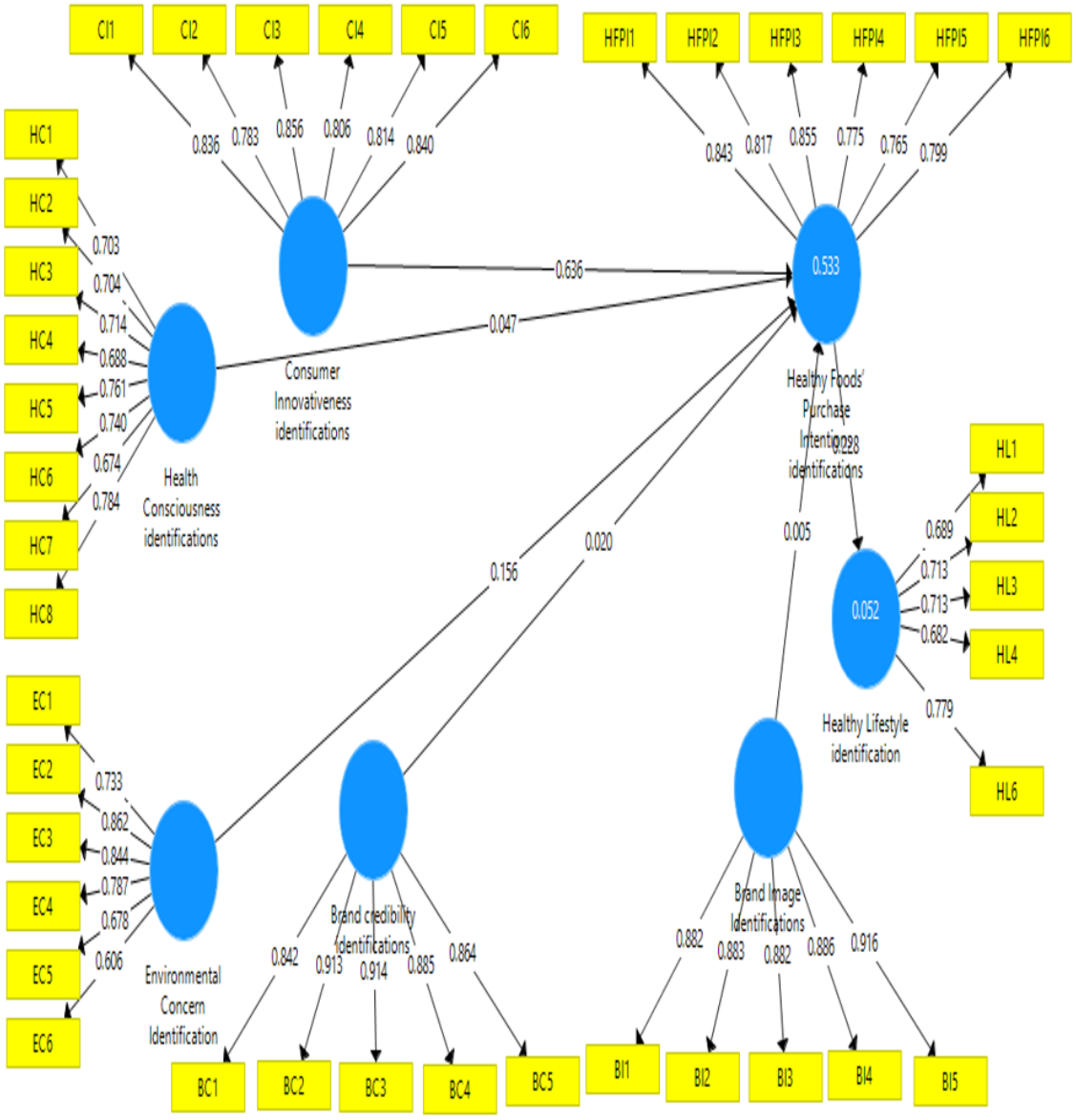

Figure 3

Measurement Model

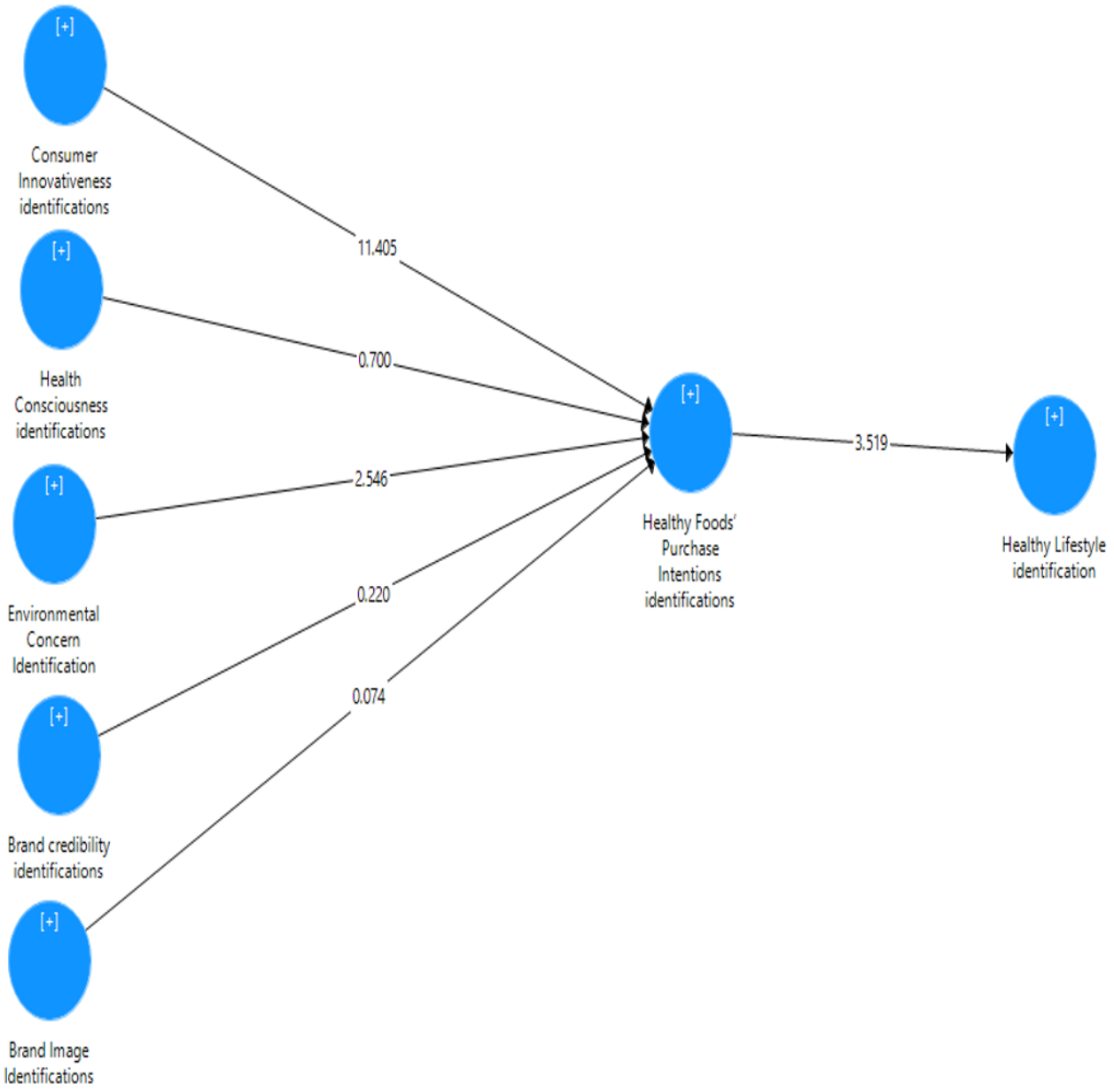

Figure 4

Structural Model Main Effect