CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter present the research methodology employed in this study and it discusses a number of empirically testable hypotheses from the research models presented in **Figure 3.1**. These hypotheses describe the relationships between each of the antecedents of functional (healthy) food and purchase in Kuala Lumpur. This chapter also describes the development and operationalisation of each of the construct contained within the survey instrument and research designs, design of the survey instrument and result of the sampling and respondents' profile.

3.2 Proposed conceptual model

Based on the theories of planned behaviour, Fishbein & Ajzen (1975), a conceptual model has been developed which consists of independent variables (IVs) of factors that influence the consumer's formation of intention to purchase and dependent variable (DV) purchase of functional (healthy) foods. The proposed conceptual model of this study is depicted in **Figure 3.1**.

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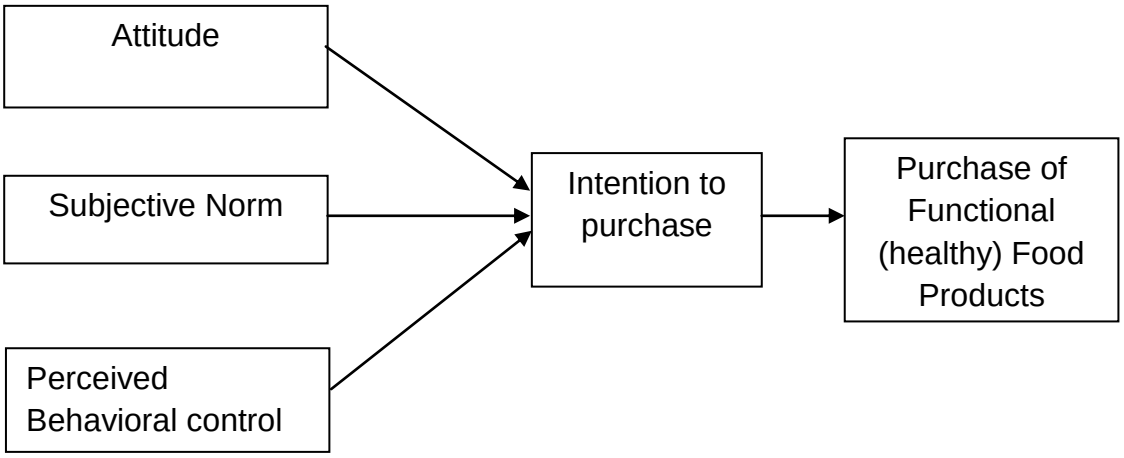

Figure 3.1 Conceptual model

3.3 Hypothesis development

3.3.1 Consumer's attitude towards functional (healthy) foods on intention to purchase that leads to purchase of functional (healthy) foods products

In the research conducted by Urala & Lahteenmaki (2004), functional food products differ from conventional foods products in several aspects such as health benefits, novelty and modern food technology. Consumers' perception of functional foods vary accordingly and therefore consumers' willingness to consume functional foods is best predicted by their attitude from using functional food products.

As a result, consumer's attitude is the important research area to be explored in order to understand what elements drive such attitudes to influence consumers to purchase functional food products (Shepherd, 1990). Attitude is defined by Eagly & Chaiken (1993) as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour".

Tuorila (1997) showed that attitudes strongly affect behaviour of the purchase intention of functional food products. In other words, the research from Tuorila (1997) is adopted to explain consumer's attitude toward functional food product and subsequent purchase intention of functional food products. Therefore:

H_1: *There is a positive relationship between consumer's attitude to functional (healthy) foods on intention to purchase functional (healthy) foods products.*

The proposed consumer's attitude toward functional (healthy) foods to intention to purchase is modelled as a reflective second order factors, which is composed of six sub-constructs i.e., benefits, confidence, necessity, medication, healthy diet and nutritional risk. Hence, six sub-hypotheses, i.e. benefits from using functional (healthy) food products, confidence in functional (healthy) food products, necessity for functional (healthy) food products, functional (healthy) food products as medicine, functional (healthy) food products as part of health diet and absence of nutritional risk in for functional

(healthy) food products are developed based on the six-constructs to evaluate the proposed consumer's attitude toward functional (healthy) foods to intention to purchase. Based on the discussion above:

H_{1a}: *There is a positive relationship between benefits from using functional (healthy) food products and intention to purchase.*

H_{1b}: *There is a positive relationship between confidence in functional (healthy) food products and intention to purchase.*

H_{1c}: *There is a positive relationship between necessity for functional (healthy) food products and intention to purchase.*

H_{1d}: *There is a positive relationship between functional (healthy) food products as medicine and intention to purchase.*

H_{1e}: *There is a positive relationship between functional (healthy) food products as part of health diet and intention to purchase.*

H_{1f}: *There is a positive relationship between absence of nutritional risk in for functional (healthy) food products and intention to purchase.*

3.3.2 Consumer's subjective norm of functional (healthy) foods to intention to purchase that lead to purchase of functional (healthy) foods products

Fishbein & Ajzen (1975) suggested that most research on the role of norms in attitude-behaviour relations have been conducted from the perspective of the theories of reasoned action or planned behaviour. Parents,

and mothers in particular, seem to be most influential concerning children's food attitudes, choice and healthy eating behavior (Story et al.,2002).

Povey et al. (2001) found that social (subjective) norms have significant impact on intention to eat meat and vegan, but not vegetables, food in a study of a convenience sample in the UK. Thus:

H_2: There is a positive relationship between consumer's subjective norm of functional (healthy) foods on intention to purchase functional (healthy) food products.

3.3.3 Consumer's perceived behavioral control of functional (healthy) foods to intention to purchase that lead to purchase of functional (healthy) foods products

Prior research suggests that behavioral are more likely to occur when people have both the ability and motivation to perform the behaviours that when they have only one or neither (Eagly & Chaicken, 1993). Because of problems with identifying and measuring actual resources and opportunities, Azjen (1991) focused on perceived behavioral control as the person's beliefs as to how easy or difficult performance of the behaviour was like to be.

Ajzen (1991) suggested that control factors may be either internal to the person (e.g., skills, abilities, power of will, compulsion) or external to the person (e.g., time, opportunity, dependence on others). We define perceived

behavioral control as an integrated measure of internal and external resources and contextual factors which make it difficult to perform the subject's motivation to consume the product under investigation.

Perceived behavioral control has been proved to influence intention to consume several forms of foods products (Povey et al., 2001; Saba & Vassalo, 2002), including intention to purchase or loyalty toward fish or seafood (Olsen, 2007; Verbeke & Vackier, 2005). Thus:

H_3: *There is a positive relationship between consumer's perceived behavioral control of functional (healthy) foods on intention to purchase functional (healthy) food products.*

3.3.4 Intention to purchase and purchase functional (healthy) foods products

Intention to purchase is most often defined as indications of to what extent people are willing to purchase, how much effort they plan to exert, in order to perform the behaviour (Azjen, 1991). Intention is assumed to capture the motivational factors that influence human behavior within several models in psychology and food science (Eagly & Chaiken, 1993; Saba & Vassallo, 2002). It is also used as the most appropriate indicator of customer loyalty (Fornell, 1992). Intention is often used as a behavioural indicator.

Intention to purchase and lead to purchase are also suggested to be among of the most important behaviour indicators to estimate a potential demand for the new products (Lilien & Kotler, 1983), and frequently used in research on food products of purchase (e.g., Carneiro et al., 2005). Intention as a behavioural indicator within the theory of planned behaviour and reasoned action is also used when 'hypothetical' products are purchased. Therefore:

H_4: There is a positive relationship between intention to purchase and purchase functional (healthy) food products.

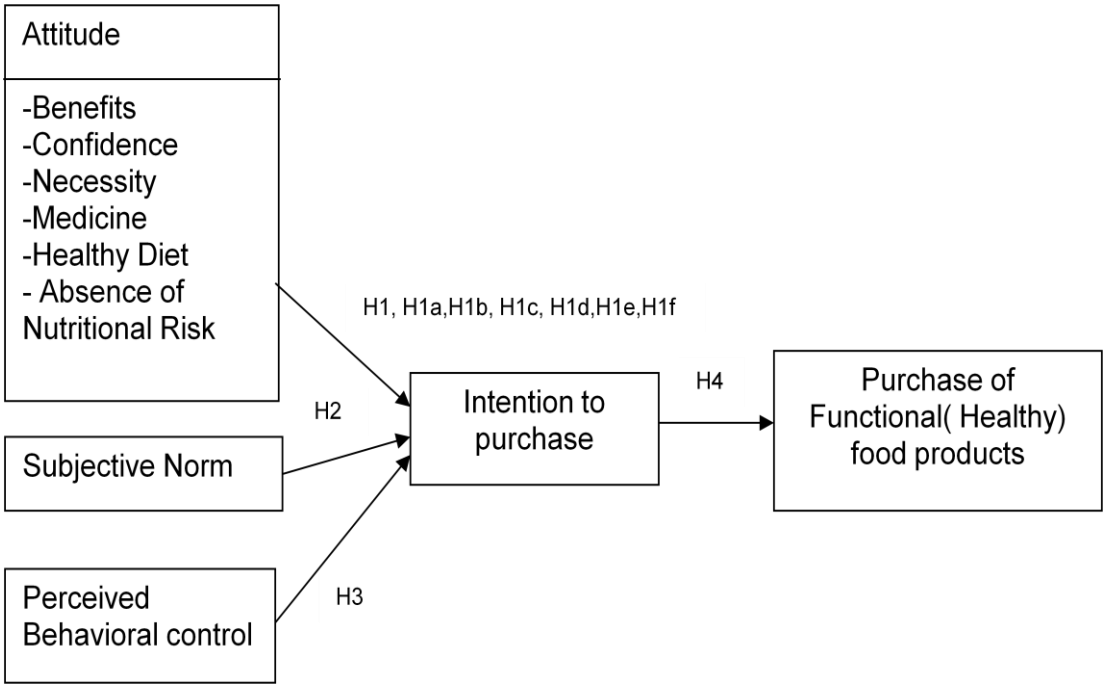

Figure 3.2: Conceptual model and the proposed hypotheses

As a summary, there are four proposed hypothesis in this study:

H_1: *There is a positive relationship between consumer's attitude to functional (healthy) foods on intention to purchase functional (healthy) food products.*

H_{1a}: *There is a positive relationship between benefits from using functional (healthy) food products and intention to purchase.*

H_{1b}: *There is a positive relationship between confidence in functional (healthy) food products and intention to purchase.*

H_{1c}: *There is a positive relationship between necessity for functional (healthy) food products and intention to purchase.*

H_{1d}: *There is a positive relationship between functional (healthy) food products as medicine and intention to purchase.*

H_{1e}: *There is a positive relationship between functional (healthy) food products as part of health diet and intention to purchase.*

H_{1f}: *There is a positive relationship between absence of nutritional risk in for functional (healthy) food products and intention to purchase.*

H_2: *There is a positive relationship between consumer's subjective norm of functional (healthy) foods on intention to purchase functional (healthy) food products.*

H_3: *There is a positive relationship between consumer's perceived behavioural control of functional (healthy) foods on intention to purchase functional (healthy) food products.*

H_4: *There is a positive relationship between intention to purchase and purchase functional (healthy) food products.*

3.4 Definition and measurement of constructs

Items of constructs are adopted from the previous studies by Urala and Lahteenmaki, 2003 & 2004. Pliner and Hobden, 1992, Bredahl , 2001, Armitage & Conner, 2001, Azjen 2001, Hagger 2001 and Mei- Fang Chen, 2007. The definition of constructs, measurement items and sources of measurement items for each construct is summarised in **Table 3.1**.

Table 3.1: Definition and measurement of constructs

Constructs	Definition	Items of Measurement	Sources
Consumer's attitude toward functional (healthy) foods			
Benefits from using functional (healthy) food products	The degree to which consumer's perceive benefits from using functional (healthy) food products.	1) I get satisfaction from eating functional (healthy) food products.	Urala and Lahteenmaki, 2003 & 2004
		2) The Idea that I can take care of my health by eating functional (healthy) food products gives me satisfaction.	Urala and Lahteenmaki, 2003 & 2004
		3) Functional (healthy) food products make me feel more energetic.	Urala and Lahteenmaki, 2003 & 2004
		4) Functional (healthy) food products help me to improve my mood.	Urala and Lahteenmaki, 2003 & 2004
		5) My health improves when I consume functional (healthy) food products.	Urala and Lahteenmaki, 2003 & 2004
		6) I actively seek out information about functional (healthy) food products.	Urala and Lahteenmaki, 2003 & 2004
		7) I am willing to try even unfamiliar functional (healthy) food products.	Urala and Lahteenmaki, 2003 & 2004

Table 3.1: Definition and measurement of constructs (cont'd)

Constructs	Definition	Items of Measurement	Sources
Confidence in Functional (Healthy) Food Products	The degree to which consumer's perceive confidence in using functional (healthy) food products.	1) The safety of functional (healthy) food products has been very thoroughly studied.	Urala and Lahteenmaki, 2003 & 2004
		2) One can get reliable information about the health effects of functional (healthy) foods.	Urala and Lahteenmaki, 2003 & 2004
		3) I trust the information given about health effect of functional (healthy) foods.	Urala and Lahteenmaki, 2003 & 2004
		4) Using functional (healthy) food products is completely safe.	Urala and Lahteenmaki, 2003 & 2004
		5) Functional (healthy) foods are scientifically proven excellent products.	Urala and Lahteenmaki, 2003 & 2004
		6) I do not believe that the stated health beneficial effects of functional (healthy) food products are based on thorough study	Urala and Lahteenmaki, 2003 & 2004
		7) I believe that functional (healthy) food products fulfil their promises.	Urala and Lahteenmaki, 2003 & 2004
		8) In my opinion, nutrition experts do not know the health effects of functional (healthy) food products.	Urala and Lahteenmaki, 2003 & 2004
		9) Exaggerated information is given about health effects functional (healthy) food products.	Urala and Lahteenmaki, 2003 & 2004

Table 3.1: Definition and measurement of constructs (cont'd)

Constructs	Definition	Items of Measurement	Sources
Necessity for Functional (Healthy) Food Products	The degree to which consumer's perceive necessity from using functional (healthy) food products.	1) I can improve my health by consuming functional (healthy) food products. 2) It is great that modern technology allows the development of functional (healthy) food products. 3) Functional (healthy) food products are completely unnecessary. 4) Functional (healthy) food products are a total sham. 5) Functional (healthy) food products promote my well-being. 6) For me functional (healthy) food products are useless. 7) Functional (healthy) food products create healthy lifestyle. 8) For a healthy person it is useless to use functional (healthy) food products	Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004
Functional (Healthy) food products as **Medicine**	The degree to which consumer's perceive using functional (healthy) food products as medicine.	1) I only want to eat foods that do not have any medicine-like effects. 2) Medicines and foods should be kept strictly separate. 3) Functional (healthy) food products are needed by people who have specific health problems. 4) The growing number of functional (healthy) food products on the market is a bad trend for the future. 5) Health effects are not appropriate in delicacies. 6) It is pointless to add health effects to otherwise unhealthy foods.	Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004

Table 3.1: Definition and measurement of constructs (cont'd)

Constructs	Definition	Items of Measurement	Sources
Functional (Healthy) food products as part of a **healthy diet**	The degree to which consumer's perceive using functional (healthy) food products as part of healthy diet.	1) Functional (healthy) food products can repair the damage caused by an unhealthy diet. 2) Functional (healthy) food products can counteract an otherwise unhealthy diet. 3) I can prevent disease by eating functional (healthy) food products regularly. 4) People would be healthier if they consume functional (healthy) food products. 5) I do not believe that functional (healthy) food products will ensure a long and healthy life.	Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004
Absence of nutritional risk in functional (healthy) food products	The degree to which consumer's perceive absence of nutritional risk from using functional (healthy) food products.	1) If used in excess, functional (healthy) food products can be harmful to health. 2) In some cases, functional (healthy) food products may be harmful for healthy people. 3) The new properties of functional (healthy) food products carry unforeseen risks. 4) Functional (healthy) food products are consumed mostly by people who have no need for them.	Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004 Urala and Lahteenmaki, 2003 & 2004

Table 3.1: Definition and measurement of constructs (Cont'd)

Constructs	Definition	Items of Measurement	Sources
Consumer's Subjective Norm of functional (healthy) foods	The degree to which consumer's perceive that important others think she/he should buy functional (healthy) food products.	1) Most people who are important to me think that I should definitely buy functional (healthy) food products.	Bredahl , 2001
		2) Most people who influence what I do think that I should -definitely buy functional (healthy) food products.	Bredahl , 2001
		3) My family influences me to purchase functional (healthy) food products.	Azjen, 2001
		4) My important friends influence me to purchase functional (healthy) food products.	Mei- Fang Chen, 2007
		5) Expert opinions influence me to purchase functional (healthy) food products.	Bredahl , 2001
		6) People who influence my decisions would approve of me buying functional (healthy) food products.	Azjen, 2001
		7) Mass media reports influence me to purchase functional (healthy) food products	Bredahl , 2001

Table 3.1: Definition and measurement of constructs (Cont'd)

Constructs	Definition	Items of Measurement	Sources
Consumer's perceived behavioral control of functional (healthy) foods	The degree to which consumer's perceived behaviorial control to buy or not buy the functional (healthy) food products under his or her volitional control.	1. Whether I eventually buy functional (healthy) food product is entirely up to me. 2. If functional (healthy) food products are available in the shops, nothing will prevent me from buying it. 3. Purchasing functional (healthy) food products is entirely within my control. 4. I have the knowledge to purchase functional (healthy) food products. 5. I have the financial ability to purchase functional (healthy) food products.	Bredahl , 2001 Bredahl , 2001 Bredahl , 2001 Mei- Fang Chen, 2007 Hagger 2001
Intention to purchase functional (healthy) foods products	The degree to which consumer's are willing to purchase, how much effort they are planning to exert, in order to buy the functional (healthy) food products.	1. If functional (healthy) food products are available in the shops, I will definitely buy them. 2. I intend to purchase functional (healthy) food products. 3. I will try to purchase functional (healthy) food products. 4. If the product is not functional (healthy) food I won't try it. 5. I plan to buy functional (healthy) food products only. 6. I prefer to choose functional (healthy) food products in future.	Bredahl , 2001 (adapted from Pliner and Hobden, 1992) Bredahl , 2001 (adapted from Pliner and Hobden, 1992) Hagger 2001 Bredahl , 2001 (adapted from Pliner and Hobden, 1992) Hagger 2001 Armitage & Conner, 2001.

Table 3.1: Definition and measurement of constructs (Cont'd)

Constructs	Definition	Items of Measurement	Sources
Purchase functional (healthy) foods products	The degree to which how often consumer's purchase the listed functional (healthy) food products.	1. Probiotic/gut-friendly juice.	Urala and Lahteenmaki, 2003 & 2004
		2. Salmon and fish oils- Omega-3 fatty acids.	Urala and Lahteenmaki, 2003 & 2004
		3. Milk with added calcium.	Urala and Lahteenmaki, 2003 & 2004
		4. Cholesterol lowering spreads.	Urala and Lahteenmaki, 2003 & 2004
		5. Blood pressure lowering milk.	Urala and Lahteenmaki, 2003 & 2004
		6. Meat Products with added fibre.	Urala and Lahteenmaki, 2003 & 2004
		7. Sweets and chew gums with xylitol.	Urala and Lahteenmaki, 2003 & 2004
		8. Energy drinks.	Urala and Lahteenmaki, 2003 & 2004
		9. Low-salted food products.	Urala and Lahteenmaki, 2003 & 2004
		10. Low-fat cheese.	Urala and Lahteenmaki, 2003 & 2004
		11. Organic bread.	Urala and Lahteenmaki, 2003 & 2004
		12. Rye Bread.	Urala and Lahteenmaki, 2003 & 2004

3.5 Research designs

Research design is the blueprint developed to fulfil the research objectives by answering research questions. A quantitative approach was employed as the research strategy in this study. A correlation study research method was undertaken in order to determine the relationship between the independent variables and the dependant variables. The instrument used in this study was a self-administered questionnaire distributed to respondents in the form of survey, and the data collected was primary data used for analysis. The survey instrument was adapted from well established journals and previous literatures.

3.6 Design of the survey Instrument

A structured questionnaire was used as the research instrument in the survey. The questionnaire method was used as this method enables the researcher to know accurately what is required and how to measure the variables of interest. In addition, questionnaire collection method offers quick response from respondents, easy to manage and well structured enabling respondents to answer the questions within defined alternatives. The questionnaire contained three major parts as listed below (refer to **Appendix I**):

Part A: Respondent demographics

Part B: The frequency of purchase of functional (healthy) food products

Part C: Purchase intention to functional (healthy) food products

3.6.1 Data selection and sampling method

A survey was conducted in September and October, 2011. Convenience sampling method was employed in this study. The survey instrument was directly administered to the respondents. The target respondents of this study were the general public from Kula Lumpur areas. Kuala Lumpur is the most developed region in this country where the people staying in this region have relatively high exposure to functional (healthy) foods. As a result, for the purpose of this study, people staying in this region were considered a proper sample to adequately represent the population of Malaysia. A convenience sample of respondent (*N*=800) was targeted. Each respondent was briefed about the survey to ensure that the questionnaire was completed correctly. Sample collection was carried out in Kuala Lumpur, Fast food outlets, cafes, shopping centres, organic food restaurant, vegetarian food outlets, banks, hotels, companies, places of worship and business networking groups in Kuala Lumpur were selected for the conduct the survey. The samples were collected by employing convenience sampling in the selected locations.

3.6.2 Measuring scales

According to Saunders et al (2009), scale appears to be an internal consistency plan for developing a measure. The concern of all is to develop a valid and reliable set of indicators for the theoretical constructs. Different scales have been used for several sections tested in the questionnaire.

In this study, a nominal scale was used to describe the respondents' background specifically on their demographics. In order to gauge the results on the consumers' purchase to function (healthy) food products, a summated rating of 5-point Likert scales (attitude scales) was used in measuring. However, the respondents were also given options to choose the middle answer which put them in the neutral stand while answering the questionnaire. Ultimately, the scores of the responses were gathered and averaged to yield an individual's attitude scores.

3.7 Chapter Summary

This chapter articulates the development of the hypotheses to be tested. The generic conceptual model developed was used to develop a series of hypotheses. The research methods, pre-analysis data screening, the research design, sample selection and sampling. The following chapter presents data analysis and results generated from SPSS.