



**EXPLORING CONSUMERS' GREEN PURCHASE INTENTION FOR A PACKAGED  
FOOD PRODUCT WITH REGARD TO ECO-FRIENDLY PACKAGING: THE CASE OF  
PACKAGED INSTANT NOODLES IN VIETNAM**

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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## DECLARATION

*I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.*

Nguyen Anh Thu

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## **PUBLICATIONS BASED ON THIS RESEARCH**

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## LIST OF ABBREVIATIONS

|                |  |
|----------------|--|
| ANOVA          | Analysis of variance   |
| AVE            | Average variance extracted   |
| $\beta$        | Path coefficient   |
| BI             | Behavioural green purchase intention   |
| CA             | Cronbach's alpha   |
| CB-SEM         | Covariance-based Structural Equation Modelling                               |
| CR             | Composite reliability  |
| EnI            | Environmental involvement  |
| EnK            | Subjective environmental knowledge   |
| EnSI           | Environmental self-identity  |
| GCB            | Green consumption behaviour  |
| GPIB           | Green purchase intention and behaviour                                       |
| H              | Hypothesis   |
| LV             | Latent variable  |
| MAO            | The Motivation-Ability-Opportunity model                                     |
| PLS-SEM        | Partial Least Squares Structural Equation Modelling                          |
| PerTP          | Perceived time pressure  |
| PerA           | Perceived availability of alternatives                                       |
| PerDN          | Perceived descriptive norms  |
| PI             | Product involvement  |
| R <sup>2</sup> | Coefficient of determination   |
| RQ             | Research question  |
| SCB            | Sustainable consumption behaviour  |
| SE             | Shopping effort  |
| SEM            | Structural Equation Modelling  |
| SmartPLS       | Statistical software for Partial Least Squares Structural Equation Modelling |
| TPB            | The Theory of Planned Behaviour  |
| TRA            | The Theory of Reasoned Action  |
| VBN            | The Value-Belief-Norm theory   |
| USD            | US Dollar  |
| VND            | Vietnamese Dong  |
| WTP            | Willingness to pay   |

## ABSTRACT

This PhD thesis explores the impacts of internal psychological and external contextual social factors on Vietnamese consumers' green purchase intention for an everyday food product in eco-friendly packaging. In practice, consumers' buying behaviours, particularly in everyday buying decision making, is very important to building and developing a green consumption culture. This thesis proposes and explores an integrative model of green purchase intention relating to packaged instant noodles with regard to eco-friendly packaging. Prior studies in the same field have not yet examined green purchase intention for a specific food product in terms of eco-friendly packaging, especially in the context of an emerging market facing critical issues of packaging disposal and pollution. This research demonstrates that environmental self-identity and environmental involvement are significant predictors of Vietnamese consumers' green purchase intention which leads to positive impacts on willingness to pay and shopping effort for eco-friendly packaging.

The developed research model interrogated an integrative model based on the Motivation-Ability-Opportunity (MAO) approach and social norms theory to explore green purchase intention. Following the MAO approach combined with social descriptive norms, this research examined antecedent variables of green purchase intention in the direction of motivation, ability and opportunity. The examined antecedents in the research model were environmental involvement, environmental self-identity, subjective environmental knowledge, product involvement, perceived time pressure, perceived availability of alternatives, perceived descriptive norms and the dependent variable was green purchase intention. This research also investigated green purchase intention in association with willingness to pay and shopping effort.

This research proposed that a precise understanding of Vietnamese consumers' green purchase intention for eco-friendly packaged instant noodles provides input to develop relevant strategies to change everyday consumer buying behaviours towards a more sustainable manner. This is the first research to apply an integrative model that incorporates both internal psychological and external contextual social factors to predict green purchase intention for an eco-friendly packaged food product. This research used a sequential mixed methods design with two phases. Accordingly, phase one of this research was of a qualitative nature, using focus group interviews with 36 participants in the two largest cities of Vietnam, Ho Chi Minh City and Hanoi. This qualitative phase was to explore consumer perceptions of eco-friendly packaging. In addition, phase one was to validate antecedent factors which were pre-determined from a literature review as being potentially associated with green purchase intention. In particular, phase one identified three major dimensions

of eco-friendly packaging in consumer perceptions (namely, packaging materials, manufacturing technology and market appeal). Consumers want eco-friendly packages which satisfy not only the environmental characteristics of packaging materials and an eco-friendly manufacturing process but also the market appealing characteristics of being aesthetic and reasonably priced. In addition, antecedents potentially influencing green purchase intention were validated for further testing in phase two of this research. Based on the findings of phase one, the research model and hypotheses were further developed for testing in phase two.

In the quantitative research of phase two, an online survey was conducted to collect quantitative data to empirically examine the research model. There were three hundred and eight (308) usable responses. Partial least squares structural equation modeling was the statistical data analysis method. The results from the data analysis partly supported the research model. To elaborate, the analysis showed that two factors relating to consumers' motivation in the research model, environmental self-identity and environmental involvement, have significant impacts on green purchase intention and indirect effects on willingness to pay and shopping effort for eco-friendly packaged instant noodles. Moreover, the results demonstrated that green purchase intention significantly affects willingness to pay and shopping effort with regard to eco-friendly packaging.

The research findings provide theoretical implications for green consumption research in emerging markets. This research offers empirical support for the relationships of green purchase intention with willingness to pay and shopping effort for instant noodles in eco-friendly packaging. The results also show that environmental self-identity and environmental involvement are significant antecedents leading to a higher level of green purchase intention, especially in everyday green consumption activities such as buying an eco-friendly packaged food product. Furthermore, practical implications are given for the government and business sectors to develop more effective strategies to encourage consumers to make everyday green purchase decisions. For the government sector, to reduce the consumption of non-eco-friendly packaging, social marketing campaigns should be regularly run to raise consumers' involvements with environmental issues. Policy-makers could emphasise environmental self-identities in social campaigns to gradually change consumers' consumption practices for packaging. In the matter of industry practices, businesses should apply environmental self-identity and environmental involvement in their marketing communications to enhance public images of green consumers. In this way, businesses could improve consumers' green purchase intention. Simultaneously, consumers will increase their willingness to pay and shopping effort for packaged instant noodles that offer eco-friendly packaging options.

## **CHAPTER 1 – OVERVIEW OF THE RESEARCH**

### **1.1 INTRODUCTION**

This thesis investigates how internal psychological and external contextual social factors influence Vietnamese consumers' green purchase intention for an everyday food product with regard to eco-friendly packaging. The studied product is packaged instant noodles. This thesis aims to establish, firstly, the antecedent factors of green purchase intention and secondly, whether and how these factors exert an effect on green purchase intention for eco-friendly packaged instant noodles. The practical objective is to provide a more accurate understanding of consumers' green purchase intention in the context of an emerging market. This understanding will provide useful input to marketers in order to develop more effective strategies for promoting green purchase behaviour. In addition, possible findings can help the government sector to develop relevant social strategies to encourage consumers to buy in a more environmentally friendly manner.

Consumer practices, particularly in everyday decision making such as buying packaged food products, are essential to build a green consumption culture. Drawn from the Motivation-Ability-Opportunity (MAO) model combined with social descriptive norms theory, this thesis developed an integrative green purchase intention model for exploring packaged instant noodle purchases with regard to eco-friendly packaging. Using a mixed methods design, this thesis incorporated qualitative and quantitative findings from focus groups and surveys to predict how internal psychological and external contextual social factors affect green purchase intention with regard to instant noodles in eco-friendly packaging.

Section 1.2 of the chapter provides the background to green purchase intention and presents definitions of the key terms used in this research. Section 1.3 provides justifications for the necessity to conduct this research. The research context in Vietnam is discussed in Section 1.4. In particular, the current situation of packaging disposal and pollution in Vietnam is described. The instant noodle market in Vietnam is also presented. Section 1.5 provides the main research questions. Section 1.6 briefly describes the research approach adopted. Section 1.7 outlines major research findings. Section 1.8 supplies a brief overview of all chapters included in this PhD thesis.

## 1.2 GREEN PURCHASE INTENTION AND KEY TERMS OF THE THESIS

Sustainability has been a pressing topic for many countries on the globe. Unsustainable production and consumption are causing global environmental problems such as waste disposal, and pollution of air, water and soil (Mangla *et al.*, 2017). Environmental pollution causes more death every year than all war and violence on a global scale, with 92 per cent of pollution-related deaths in developing countries (ABC News, 2017). To help reduce the consequences of environmental pollution, promoting consumer pro-environmental behaviour should be one priority agenda item, especially in developing countries (Keho, 2016), where unsustainable practices could be common due to short-term economic development needs. This is the focus of this research as it is situated in the developing market context of Vietnam.

In pro-environmental behaviour, green consumption is important as it affects the environment through consumers' acquisition, use and disposal of goods and services. A green consumer is defined by Gilg, Barr and Ford (2005) as someone who is willing to purchase environmentally friendly products to help minimise negative impacts on the environment. Likewise, Mostafa (2007) refers green purchase behaviours to consumer purchases of products that produce the most direct positive impacts or fewer negative impacts on the environment. Some examples of green consumption in prior studies include buying environmentally friendly products and services (e.g., Akehurst, Afonso and Gonçalves, 2012; Barbarossa and de Pelsmacker, 2016; Chekima *et al.*, 2016; Kumar, Manrai and Manrai, 2017; Maniatis, 2016; Moser, 2015; Prakash and Pathak, 2017; Yadav and Pathak, 2016, 2017) and consuming organic food (e.g., Gorissen and Weijters, 2016; Nuttavuthisit and Thøgersen, 2015; Zhou *et al.*, 2013). This research is one effort contributing to the green consumption literature in terms of purchase intention for environmentally friendly products.

Green purchase intention has become an important research agenda in the green consumption behaviour literature. Green purchase intention has attracted research interests in both developed and emerging markets, and should be prioritised in developing markets (Keho, 2016). In general, behavioural intention is defined as a person's relative strength of purpose to carry out a target behaviour (Ng and Paladino, 2009). Thus, intention indicates the readiness to undertake behaviour and is the main predictor of behaviour (Ajzen, 1991; Ramayah, Lee and Mohamad, 2010). More specifically, green purchase intention refers to a consumer's willingness to give preference to green products over non-green alternatives (Nik, 2009). Similarly, green purchase intention is seen as a consumer's determination to buy environmentally friendly products (Ramayah, Lee and Mohamad,

2010). In this research, green purchase intention is defined as the inclination to purchase eco-friendly packaged product alternatives when making a choice about packaged foods.

Knowledge of green purchase intention would require input from earlier studies in the green consumption literature. Prior research on green purchase intention has examined a wide range of factors from the individual level of demographic and psychological variables to the macro level such as social and cultural value orientations (Leonidou, Leonidou and Kvasova, 2010). More specifically, Liobikienė, Grincevičienė and Bernatoniene (2016) reported that the main factors included in the majority of studies on green consumption are internal psychological variables, such as environmental concern, environmental knowledge and perceived behavioural control. Little research has been undertaken on both internal psychological and external social contextual factors to explore what factors have significant influences on green purchase intention and behaviour. It is necessary to establish such a holistic approach to arrive at a fuller understanding of green purchase intention and behaviour.

Green purchase intention may allow consumers to respond more favourably to products with environmentally friendly characteristics. Research has shown that purchase intention is significantly and positively associated with purchase behaviour (Kumar, Manrai and Manrai, 2017; Yadav and Pathak, 2017). However, most of the recent studies on behavioural intention are conceptualised on one dimensional construct (Konuk, Rahman and Salo, 2015). This can be a reason why there are gaps between self-reported intentions and actual behaviours (Grimmer, Kilburn and Miles, 2016; Hassan, Shiu and Shaw, 2016). To help close the gap, in this research, green purchase intention is examined together with willingness to pay as they both could be significant predictors of green purchase behaviour (Konuk, Rahman and Salo, 2015; Prakash and Pathak, 2017). Moreover, this research explores shopping effort for eco-friendly products which might be another dimension related to green purchase intention. The concept of shopping effort for eco-friendly products was explored by Ellen (1994) and was revisited in Konuk, Rahman and Salo (2015). The main premise is that consumers who have stronger purchase intention would be willing to pay more and to spend shopping effort for green purchases. With a good knowledge of factors impacting green purchase intention in association with willingness to pay and shopping effort, the government and business sectors can develop more effective practices to promote green purchase behaviour.

This research is focused on green purchase intention for a packaged food in relation to eco-friendly packaging. Packaging has become a serious concern in many countries, including Vietnam, due to its adverse impacts on the environment. As pointed out by Magnier and Crié (2015), though

packaging is a social and political concern, eco-friendly packaging has never been a clear concept in the consumer behaviour literature. Rather, researchers have used different terms to indicate eco-friendly packaging, such as environmentally friendly packaging, eco-packaging, ecological packaging, green packaging, sustainable packaging, eco-design, design for the environment, and environmentally conscious design (Boks and Stevels, 2007; Koenig-Lewis *et al.*, 2014; Magnier and Crié, 2015). In practice, many initiatives have been introduced to promote the concept of sustainable packaging in industry. A widely accepted definition of sustainable packaging is given by the Sustainable Packaging Coalition® (2011):

*Sustainable packaging is beneficial, safe and healthy for individuals and communities throughout its life cycle; meets market criteria for performance and cost; is sourced, manufactured, transported, and recycled using renewable energy; maximises the use of renewable or recycled source materials; is manufactured using clean production technologies and best practices; is made from materials healthy in all probable end of life scenarios; is physically designed to optimise materials and energy; and is effectively recovered and utilised in biological and/or industrial cradle-to-cradle cycles.*

To put it in a simple way, sustainable packaging is defined by Dominic *et al.* (2015) as the type of packaging that embraces material reuse and waste reduction throughout packaging life cycle, from production to consumption, disposal and after disposal. As this research examines consumer perspectives relating to packaging, it deals with consumer perceptions of eco-friendliness of packaging. Therefore, environmentally friendly packaging or in short eco-friendly packaging is the main term used in this thesis. Eco-friendly packaging is simply defined as the type of packaging that produces fewer negative impacts on the environment and human beings.

In this thesis, the terms “eco-friendly products” or “green products” are frequently used. Eco-friendly products are commonly called green products in the green consumption literature (see Khare, 2015; Kim, Njite and Hancer, 2013; Moser, 2016; Ottman, Stafford and Hartman, 2006; Prakash and Pathak, 2017). Green products are defined as products that are less or not at all harmful for the environment in comparison to a substitute of the same product category (Moser, 2016). The terms “green products”, “environmentally friendly or eco-friendly products” or “environmental products” have been interchangeably used in the literature to describe products that help protect the natural environment and reduce pollution and waste (Ottman, Stafford and Hartman, 2006). For products, the term “green” is alternatively known as “eco-friendly”, “environmentally friendly” or “sustainable” (Kim, Njite and Hancer, 2013). Hence, in this research, green products are termed

eco-friendly or environmentally friendly products interchangeably. Food products packaged in eco-friendly packaging are thus considered as green products or eco-friendly products in this research. For efficiency, the term eco-friendly packaged food products, which indicate food products in eco-friendly packaging, are used in this thesis. Eco-friendly packaged food products can be defined as ones packaged in a way that causes fewer impacts on the environment. As the studied product is instant noodles, the term “eco-friendly packaged instant noodles” is used to indicate instant noodles in eco-friendly packaging. Hence, this thesis investigates antecedents affecting green purchase intention for eco-friendly packaged instant noodles.

In this thesis, willingness to pay and shopping effort as a result of green purchase intention are also examined to provide a more accurate understanding of consumer behaviour in relation to eco-friendly packaged instant noodles. The three terms, green purchase intention, willingness to pay and shopping effort, are defined in this research as follows:

- Green purchase intention refers to the possibility of a consumer to consider buying green products. Specifically, green purchase intention is examined in relation to eco-friendly packaging in the packaged instant noodle category. It is thus specifically defined as the possibility and willingness of a consumer to buy instant noodles in eco-friendly packaging.
- Willingness to pay can be a practical way to look at consumers’ green purchase intention. In this thesis, willingness to pay is defined as consumers’ readiness to bear extra costs to acquire instant noodles in eco-friendly packaging.
- Shopping effort is examined in association with green purchase intention in this research. By definition, shopping effort reflects consumers’ effort and attention expended for buying instant noodles in eco-friendly packaging in this thesis.

### **1.3 RESEARCH RATIONALE**

This section provides the rationale used for conducting this research. It begins by providing an overview of the research gaps in green consumption (Section 1.3.1). It also details consumer behaviour in relation to packaging to be used for the scope of this research (Section 1.3.2).

### 1.3.1 Research Gaps in Green Consumption

Many recent studies have examined green purchase intention, drawn from a range of behavioural and social theories. Some examples are Arli *et al.* (2018), Albayrak, Aksoy and Caber (2013), Chen and Tung (2014), Choi, Jang and Kandampully (2015), Ha and Janda (2012) and Prakash and Pathak (2017). Five research gaps are identified in the green consumption literature, which have motivated this research and which are briefly listed below and detailed in the subsequent paragraphs:

- Many researchers have applied the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) in studies on green consumption behaviour but few have put forward a holistic way to predict green purchase intention using an integrative approach which examines both internal psychological and external contextual social factors.
- Researchers have used the Motivation-Ability-Opportunity model (MAO) in green consumption research but few have explored specifically green purchase intention in relation to food products in eco-friendly packaging.
- The relationships of green purchase intention with willingness to pay and shopping effort for eco-friendly packaged food products has not been explored.
- Most studies on consumer behaviour towards eco-friendly packaging have been undertaken in developed market contexts rather than in emerging markets.
- Few studies have been attempted to understand consumer perceptions of and expectations for eco-friendly packaging in the context of an emerging market.

First, to purchase in an environmentally friendly manner needs effort, time and resources. In the context of green consumption, many researchers have used the Theory of Reasoned Action (TRA) in studies on green purchase behaviours (e.g., Ha and Janda, 2012; Paul, Modi and Patel, 2016; Yadav and Pathak, 2016). The TRA assumes that attitude towards performing behaviour, combined with motivation to comply with perceived social pressures from people whose opinion is important to the individual, termed as the subjective norm, are the sole antecedents of behavioural intention (Fishbein and Ajzen, 1975). However, as pointed out by Han, Hsu and Sheu (2010), the lack of recognition of external factors which can limit consumer choices such as resources and product availability questions the applicability of the TRA. To overcome the limitations of the TRA, the TPB was introduced by Ajzen (1985, 1991), which was a TRA extension with perceived behavioural control as a new factor. The TPB as a behavioural model has been widely applied in

research on green purchase intention and behaviour (e.g., Albayrak, Aksoy and Caber, 2013; Chen and Tung, 2014; Hsu, Chang and Yansritakul, 2017; Kang, Liu and Kim, 2013; Newton *et al.*, 2015; Nuttavuthisit and Thøgersen, 2017; Khare, 2015; Paul, Modi and Patel, 2016; Yadav and Pathak, 2017; Zhao *et al.*, 2014; Zhou *et al.*, 2013). However, the TPB has been the target of much criticism and debate. Most critics question its sufficiency in predicting behaviours or make inquiries into its limiting conditions (Ajzen, 2011). Moreover, the TPB does not specify where perceived behavioural control originated. To address its limitations, several authors in green consumption have consequently extended the TPB by adding more variables into this model. Some examples are perceived values (Yadav and Pathak, 2017), willingness to pay (Moser, 2015; Yadav and Pathak, 2017), environmental concern (Albayrak, Aksoy and Caber, 2013; Chen and Tung, 2014; Paul, Modi and Patel, 2016), consumer knowledge (Kang, Liu and Kim, 2013), consumer trust (Nuttavuthisit and Thøgersen, 2017) and consumer environmental consciousness (Chen and Hung, 2016). Their findings are consistent in the sense that additions of new variables increase the predictive power of the TPB. Nevertheless, these studies rely on self-interested behaviour explained by a rational decision process based on the TPB, which mainly focuses on internal psychological factors (Phipps *et al.*, 2013). Little research based on the TPB has offered a holistic way to predict green purchase intention using an integrative approach which embraces internal psychological, external contextual and social factors. It is, therefore, necessary to explore an integrative approach taking into account internal and external factors to predict green purchase intention.

Second, there are limitations in the Motivation-Ability-Opportunity (MAO) model that is applied in green consumption behaviour (GCB) research. The MAO model identifies three broad factors that can be used to explain behaviour: motivation, ability and opportunity (Ölander and Thøgersen, 1995). The advantages of the MAO model, compared to the TRA and the TPB, are the recognition of contextual factors impacting ability and opportunity to consume sustainably. As reported in Gleim *et al.* (2013) and Tanner and Kast (2003), situational factors such as financial constraints and lack of availability can create barriers to GCB. One limitation of the MAO model is that it does not emphasise social influences that can be significant for consumption behaviour. Research has found that consumers learn by observing others around them, such as peers and family members (Bandura, 1997; Phipps *et al.*, 2013). A literature review completed in this PhD thesis has shown that few studies have used the MAO to explore green purchase intention specifically (see Chapter 2). Hence, it would be useful to explore the ability of the MAO approach to predict green purchase intention by developing an integrative model in the direction of motivation, ability and opportunity with the inclusion of social influences.

Third, green purchase intention has been examined in several studies such as Konuk, Rahman and Salo (2015), Moser (2015), Prakash and Pathak (2017), Yadav and Pathak (2016), Yadav and Pathak (2017) and Wei *et al.* (2017). These studies explained the variance of green purchase intention within a range from 20 per cent to 74 per cent. Most factors used to explain green purchase intention in these studies are personal psychological, of which some examples are environmental knowledge, environmental concern, and environmental attitude. However, whether or not consumers are willing to expend effort to buy green products has not fully been investigated in association with green purchase intention. In the existing literature on consumer behaviour, the concept of shopping effort was previously explored by Ellen (1994) and was scrutinised in Biswas *et al.* (2000) and Konuk, Rahman and Salo (2015). Though shopping effort is overtly expressed through the purchasing process, whether or not green purchase intention and shopping effort is related has not been probed. In addition, willingness to pay for green products have been extensively examined in research on green purchase behaviour (e.g., Husted *et al.*, 2014; Khan and Kirmani, 2015; Mahapatra, 2013; Prakash and Pathak, 2017; Thieme *et al.*, 2015; Triveli, Patel and Savalia, 2015; Tully and Winer, 2014; Wang, Yam and Tang, 2013; Zhao *et al.*, 2014). Nevertheless, there is still no clear consensus on willingness to pay for green products as inconsistent research findings have been reported. Thus, it would be practical to explore further the relationships of green purchase intention with willingness to pay and shopping effort for green products.

Fourth, environmental issues and environmental protection have recently gained prominent attention on a global scale. More and more consumers are aware of and want to contribute to environmental protection (Moser, 2015). Buying green products offers opportunities to reduce adverse environmental impacts. Green products can be purchased for household consumption. In household consumption, groceries occupy a considerable percentage with packaged product purchases and up to thirty per cent of consumers' environmental impacts primarily come from disposal of packaging after consumption (Koenig-Lewis *et al.*, 2014). In an effort to reduce environmental consequences of consumption activities, many governments, non-government organisations and retail chains around the world have supported the "no plastic" campaigns (Clapp and Swanston, 2009; Taylor and Villas-Boas, 2016). Eco-friendly packaging has emerged as a good solution for several environment-related issues as there is a growing environmental concern among consumers, which is forcing manufacturers to produce more eco-friendly products (Leonidou, Katsikeas and Morgan, 2013; Mishra, Jain and Motiani, 2017). Thus, eco-friendly packaging has become an increasingly important issue for not only academic researchers but also industry, which leads to a necessity of understanding consumer behaviour in relation to eco-friendly packaging.

Consumers may prefer eco-friendly packaged products and do not like plastic packaging (Prakash and Pathak, 2017). Nevertheless, there are not many studies that examined consumer purchase intention towards eco-friendly packaging (Larceneux, Benoit-Moreau and Renaudin, 2012). Most research on consumer behaviour in relation to eco-friendly packaging has been done in developed market contexts. For example, Koenig-Lewis *et al.* (2014) and Rokka and Uusitalo (2008) reported consumer preferences for green or eco-friendly packaging in Western countries. For emerging markets, too few studies have been reported in the same field, except for Prakash and Pathak (2017)'s, which analysed consumer behaviour towards eco-friendly packaged products in India. This PhD research therefore aims to contribute new knowledge to the literature on consumer behaviour towards eco-friendly packaging. Specifically, this research explores green purchase intention for a food product in eco-friendly packaging in the context of an emerging market. The importance of understanding consumer behaviour towards packaging and particularly eco-friendly packaging is further elaborated in Section 1.3.2.

Fifth, although consumer responses to eco-friendly packaged products are important to industry, little research has been observed on the topic of consumer perceptions of eco-friendly packaging. A few examples of studies which address consumer perceptions of eco-friendly packaging are by Koenig-Lewis *et al.* (2014), Magnier and Crié (2015) and Lindh, Olsson and Williams (2016). Still, these studies were conducted in developed markets. Literature on consumer perceptions of eco-friendly packaging in the context of emerging markets is sparsely reported. Hence, this research also aims to explore what consumers in an emerging market perceive to be eco-friendly packaging, especially when applied for a food product. To gain consumer insights into this topic, this research examines eco-friendly characteristics of packaging from consumers' perspectives and expectations.

The five research gaps mentioned above have provided a main direction for this research. This research particularly focuses on antecedents of green purchase intention and the associations between green purchase intention and willingness to pay and shopping effort for a food product (instant noodles) in eco-friendly packaging. Furthermore, this research explores consumers' perceptions of eco-friendly packaging applied for a food product such as instant noodles in the market context of Vietnam.

### 1.3.2 Consumer Behaviour in relation to Packaging

This section outlines the importance of research on consumer behaviour with regard to packaging. It discusses the role of packaging and outlines the main issues associated with packaging to justify the necessity of conducting more research in this field.

The role of packaging is important at point of purchase of most fast-moving consumer goods such as food products. In the literature, the role of packaging in consumer purchase decisions for food products is receiving more attention (Fernqvist, Olsson and Spendrup, 2015). Prior research has reported useful insights about different types of packaging on consumer decision making (e.g., Becker *et al.*, 2011; Liao *et al.*, 2015; Murray and Delahunty, 2000). For instance, Becker *et al.* (2011) indicated that how a food product is packaged can influence how a consumer forms evaluation. Furthermore, food packaging can generate emotional responses (Liao *et al.*, 2015) or even motivate consumers to purchase (Murray and Delahunty, 2000). This research is more interested in examining consumer responses to a food product in eco-friendly packaging. Therefore, understanding how consumers make packaging choices when buying the studied packaged food product is important.

Consumer choices are different across different types of food products. In the context of fresh foods like fruits and vegetables, many products are typically sold unbranded and thus are purchased by consumers as commodities (Nijsen and Van Trijp, 1998). Therefore, adding packaging to an ordinary food commodity may be a way to gain a competitive advantage for the product (Heiman and Goldschmidt, 2004). Nevertheless, prior research reported that consumers prefer to buy fresh products without packaging (van Herpen, Immink and Van Den Puttelaar, 2016). This may be because unpackaged fruits and vegetables offer consumers a good chance to use their sensory discrimination to evaluate these products directly (Peck and Childers, 2006). Moreover, unpackaged fresh food options may lower the perceived environmental impact of consuming these products (Van Herpen *et al.*, 2016). Unpackaged fresh food products, however, are beyond the scope of this research as it aims to examine consumer behaviour related to a packaged food product. The main reason for the research scope is that manufacturers increasingly offer single-serve food packs as these goods gain consumers' preferences due to their convenience and abundance of choices (Labeling News, 2017). For example, packaged instant noodles, one of the most frequently bought fast-moving consumer goods in Vietnam (Vietnam Net, 2017), are typically purchased in single-serve packs. Hence, this research narrows its scope to conduct investigations into how consumers intend to buy single-serve packaged foods such as packaged instant noodles.

There are criteria consumers may consider when making food product choices related to packaging. In the packaged food market, the primary purpose of packaging is to protect the product (Wikström *et al.*, 2014). Packaging is also a way to communicate to consumers (Rundh, 2005). However, these functions always come at both monetary cost and environmental cost (Simms and Trott, 2010). In consumer perceptions, packaging may represent wastefulness and thus is considered negatively as being thrown away at disposal (Roper and Parker, 2013). Therefore, packaging should be projected in a way that can reduce both monetary costs and environmental costs, which means, packaging should be affordable and eco-friendly.

Packaging is one of the consumer criteria for packaged food products. In the packaged food market, a product's value and attractiveness can be greatly improved by packaging (Fernqvist, Olsson and Spendrup, 2015). Nevertheless, if a product does not offer desirable consumer benefits, then consumers will not have a reason to consider buying it. It can be assumed that by increasing objective or subjective product quality or benefit, a brand can create differentiation that motivates consumers to buy and to pay more (Anselmsson, Bondersson and Johansson, 2014). That is to say, consumers may make purchase decisions based on their preferred brands which can offer the differentiation they desire such as food quality and convenient packaging. In packaged food product categories, consumers may prefer a particular brand or product, and consequently, they may stick to buying that brand or product in a package it comes in, which is not always an eco-friendly package. Therefore, knowledge of how consumers form intention to buy eco-friendly packaged foods is very useful to gain a fuller understanding of consumer behaviour towards eco-friendly packaging. This is the main reason of the focus of this research.

Packaging is part of human daily life and almost all consumer products, including food products, come in some type of a package. Globally, the use of plastic for consumer products has become increasingly dominant, and production has steadily increased since plastic was first used widely after World War II (Parker, 2015). For example, 335 million metric tons were manufactured for global uses in 2016 (© Statista, 2018). By 2015, humans had produced 8.3 billion metric tons of plastics (Science Daily, 2017). According to Worldwatch Institute (2015), an average person living in Western Europe or North America consumes 100 kilograms of plastic each year, mostly in the form of packaging. Asia uses about 20 kilograms per person every year, and this figure is expected to grow rapidly as Asian economies expand (Worldwatch Institute, 2015). Plastic can take from 10 to 1,000 years to decompose in landfill (Rathje and Murphy, 2001) and thus, it can cause adverse environmental impacts. It is estimated that 6,300 metric tons of plastic waste had been produced by

2015, of which 79% was accumulated in landfill or the natural environment (Geyer, Jambeck and Law, 2017). As a consequence, concern for the use of plastic packaging is increasing and therefore leads this PhD research to focus more on examining consumer purchase intention in relation to eco-friendly packaging.

Consumers are now more concerned about packaging as packaging waste will have negative impacts on the environment. In response to environmental issues, consumer environmental demands are placed more on packaging (Niemela-Nyrhinen and Uusitalo, 2013). In academic studies, many researchers have noticed a growing consumer concern about packaging and its effects on the environment. For example, packaging was rated as the issue of greatest environmental and ethical concern of UK consumers (Lewis and Stanley, 2012). Several other researchers have embarked on investigating consumer environmental choice in terms of eco-friendly packaging (e.g., Barber, 2010; Koenig-Lewis *et al.*, 2014; Laforet, 2011; Rokka and Uusitalo, 2008). An example is Koenig-Lewis *et al.* (2014) who explored consumers' evaluations of ecological or eco-friendly packaging and found that purchase intention is significantly affected by consumer concern for environmental consequences of packaging. Similarly, Rokka and Uusitalo (2008) discovered that thirty per cent of surveyed Swedish consumers considered green or eco-friendly packaging as the most important criterion when buying a functional drink product. Given this important result, environmental consumer research should be focused more on studying actual product choices rather than general environmental attitudes (Rokka and Uusitalo, 2008). Furthermore, a strong theoretical understanding of consumers' responses towards eco-friendly packaging is still lacking (Prakash and Pathak, 2017). In line with these considerations, this research sets out investigations into consumer purchase intention for eco-friendly packaging concerning a food product.

In summary, it is shown from the review of extant literature that there is an increasing concern for packaging and its associated environmental issues. Besides, as a high percentage of materials that consumers dispose of are in form of packaging, consumers may be considering the environmentally friendly characteristics of packaging when purchasing packaged goods. A more accurate understanding of consumer purchase intention related to eco-friendly packaging is necessary in order to implement relevant strategies to expand consumer sustainable practices. Hence, this research aims to investigate consumer intentions to buy an everyday food product packaged in a more environmentally friendly manner. The research context is Vietnam as an emerging market where consumer dynamics have become an evolving topic for academic research. A more accurate understanding of sustainable consumer dynamics is crucial to grow a sustainable consumption culture in an emerging market where consumers are starting to be aware of and to adopt sustainable

practices (De Koning *et al.*, 2015). In this sense, the research findings will be of interest to other markets experiencing similar emerging consumer trends.

## **1.4 RESEARCH CONTEXT**

This section presents the context of Vietnam in which this research was conducted. This includes an overview of Vietnam (Section 1.4.1), highlighting the issues of packaging waste (Section 1.4.2) and justifying the choice of packaged instant noodles for investigations in this research (Section 1.4.3).

### **1.4.1 Vietnam – An Overview**

The emerging market of Vietnam was selected as the context of this PhD research. The country is geographically located in Southeast Asia, with a large population of 96,160,163 people as of July 2017 (Central Intelligence Agency US, 2018a). There are 58 provinces and 5 municipalities in Vietnam. Ho Chi Minh City in the South and Hanoi in the North are the two most populated cities. At the time of writing this PhD thesis, the researcher was residing in Ho Chi Minh City. Vietnam's GDP was recorded at US\$216 billion in 2017, increasing by 6.8 per cent compared to 2016 and reflecting strong domestic demand and manufacturing exports (Central Intelligence Agency US, 2018b). In 2017, National Gross Domestic Product (GDP) came from the following major industries: agriculture (rice, coffee, rubber, tea, pepper, soybeans, cashews, sugarcane, peanuts, bananas, pork, poultry, seafood) contributed to 15.9 per cent of national GDP, industry (food processing, garments, shoes, machine-building, mining, mining, coal, steel, cement, chemical fertiliser, glass, tires, oil, mobile phones) 32.7 per cent, and services (education, trade, transport and real estate services) 41.3 per cent respectively (Central Intelligence Agency US, 2018b). In 2017, GDP per capital was US\$6,900 and the highest GDP composition came from household consumption at 68.5% (Central Intelligence Agency US, 2018b). This indicates that household consumption is a strong factor that contributes to the growth of the national economy.

Vietnam has seen large-scale public awareness campaigns in relation to green consumption. For instance, one social marketing campaign called “Chiến Dịch Tiêu Dùng Xanh” or in English “Green Products Consumption Campaign” was launched in 2010 and since then has attracted and involved millions of consumers (Vietnam News, 2018). The objectives of this campaign are to encourage businesses to be more socially responsible, and call consumers to consume more eco-friendly products. Nearly 60,000 volunteers have been involved in Green Consumption campaigns since 2010 to educate consumers about eco-friendly products. The campaign in June 2015 attracted more

than four million consumers to buy eco-friendly products in CoopMart - a large supermarket chain in Vietnam (Vietnam Plus, 2016). In June 2018, the campaign activities included a smart phone application that helped consumers to identify and consume eco-friendly products (Vietnam News, 2018). According to CoopMart chain representatives, sales of eco-friendly products increased by 50-60 per cent during the campaign (Vietnam News, 2018). The Green Products Consumption campaign demonstrates that the Vietnamese consumers are increasingly involved with green consumption to help protect the environment.

Although there have been some social movements to environmental consciousness, the Ministry of Natural Resources and Environment of Vietnam stated that the majority of Vietnamese consumers are still not familiar with the concept of green or sustainable consumption (Vietnam Breaking News, 2016). For this reason, the National Action Plan on sustainable production and consumption, approved by Prime Minister Nguyen Tan Dung in March 2016, came into effect to improve patterns of production and consumption in Vietnam (Vietnam Breaking News, 2016). The next National Action Plan was issued by Prime Minister Nguyen Xuan Phuc in May 2017 to implement the 2030 Agenda for Sustainable Development (Vietnam Net, 2017a). One of the priorities of the national action plans is to change consumer behaviour by encouraging an environmentally friendly lifestyle in consumption activities. Despite government efforts in encouraging sustainable production and consumption by the national action plans, the implementation of sustainable practices is limited (Nhan Dan, 2016). One of the important reasons is that social awareness and interest in sustainable practices is still inadequate (De Koning *et al.*, 2015; Nhan Dan, 2016). Moreover, environmental awareness, sense of responsibility on protection of natural resources and the environment has not been greatly enhanced (Communist Review, 2017). Therefore, increasing awareness and interest in environmental topics is one priority on a national scale, which should involve not only the government but also the business sector and consumers.

There are many challenges to Vietnam's sustainable consumption. First, the government has not created effective policies to encourage the purchase of green products (Vietnam Pictorial, 2015). Second, old-fashioned technologies remain in local industries because of their low costs in spite of their negative impacts on the environment. Third, the market has witnessed the emergence of consumerist lifestyles which promote the increasing consumption of convenience products, especially packaged foods (Euromonitor, 2017). Despite generally lower levels of consumption in emerging markets compared to developed countries (De Koning *et al.*, 2015), large populations coupled with growing consumption trends in emerging markets produce a widespread environmental effect (Lange and Meier, 2009). As a result, sustainability and sustainable

consumption culture has become a critical national agenda item to many developing countries and Vietnam is no exception (Vergragt, Akenji and Dewick, 2014). This is the main reason why Vietnam was selected as the context of this research.

As an emerging market, Vietnam is quite significant in terms of population size with more than 96 million people. Emerging markets are important to global sustainability goals because of large population sizes and the rising consumption trends (De Koning *et al.*, 2015). Furthermore, Vietnam is experiencing a high volume of plastic packaging disposal, on average 32-35 kilograms per person per year (approximately 3,040,000 tons - 3,325,000 tons per year) (Vietnam News, 2016), which is causing severe environmental impacts. Therefore, this is a good case for investigating the field of consumer behaviour related to eco-friendly packaging. This research assumes that if green consumption practices can be enhanced in an emerging market with a large population like Vietnam, the potential positive effects on the environment can be huge and far-reaching. With a large population size and a huge problem of packaging waste (see Section 1.4.2), Vietnam serves as a case study for other emerging markets which have similar population sizes and comparable patterns of packaging disposal into the environment.

#### **1.4.2 The Issues of Packaging Waste in Vietnam**

This section discusses the problem of packaging waste in Vietnam, which is used as one practical input for this research. In Vietnam, disposal of packaging has become a major environmental issue. The Vietnamese people are increasingly concerned about public littering and packaging disposal because most urban areas are visibly polluted with used packaging and plastic bags (De Koning *et al.*, 2015). New statistics show that nearly 18,000 metric tons of plastic waste is generated in Vietnam on a daily basis, which sends an alarming message about environmental issues (Nguyen, 2018). Moreover, a recent report from Ocean Conservancy claims that Vietnam along with China, Indonesia, Thailand and the Philippines dump as much as 60 per cent of global plastic waste into the world's seas (Public Radio International, 2016). Since plastic takes a long time to decompose, it will cause adverse impacts on the environment of Vietnam.

Vietnam is facing serious environmental issues due to high levels of plastic consumption. Vietnam is one of the biggest consumers of plastic in the world, standing at the 17<sup>th</sup> out of 109 countries, according to the World Bank (Hoang and Duc, 2018). Vietnamese consumers often use plastic grocery bags provided by sellers for free. The country is struggling with plastic waste, not only from single-use plastic grocery bags but also from disposed packaging waste. In Vietnam, plastic

consumption will reach 55 kilograms per capita per year in 2020, according to Vietnam Plastics Association (Yaniar, 2018). Every day, in Ho Chi Minh City, Vietnam's largest city, approximately 120 tons of packaging of all types is used, in which 60 per cent comes out in plastic, and the figures keep increasing year by year (Vietnam News, 2013). According to the Ministry of Natural Resources and Environment of Vietnam, solid waste, including plastic waste, thrown out in urban areas alone will reach 22 million tons per year by 2020 (VN Express, 2017). Most disposed waste ends in landfill or in the environment. As reported by Schneider *et al.* (2017), figures from Go Cat landfill in Ho Chi Minh City show that organic waste accounts for the highest percentage (81.4 per cent) while plastic forms the second highest proportion (16 per cent). Still, the proportion of plastic in non-organic waste is the highest (16 per cent), compared to paper (1.04 per cent), metal (0.9 per cent) and glass (0.3 per cent). Due to the long time it takes (from 10 to 1,000 years) to decompose in landfill, plastic will cause the most negative environmental consequences (Rathje and Murphy, 2001).

Given the adverse environmental impacts of plastic, the Vietnamese government has implemented social campaigns to reduce plastic consumption and production. In 2015, the target to have plastic bags used in supermarkets and shopping malls down by 40 per cent compared to 2010 was realised in some big cities (Vietnam News, 2016a). Furthermore, in 2017, the Vietnamese government raised environmental taxes imposed on plastic up to 80,000 VND per kilogram, in the hope to reduce the use of plastic (Thanh, 2017). In response to the government's effort, the biggest supermarket chain in Vietnam, CoopMart, announced the stoppage of plastic bags in their outlet chain in November 2016 and started to give bio-degradable check-out bags to shoppers (Talk Vietnam, 2016). One of the objectives of CoopMart's action is to encourage consumers to use more eco-friendly bags and to help shape consumers' spending patterns on green products (Talk Vietnam, 2016). As national concern about plastic use has been initiated by the government of Vietnam, consumers are starting to be more aware of plastic waste issues.

To summarise, the issues of plastic and plastic packaging as well as the related negative environmental impacts trigger the need to conduct this PhD research. In particular, the research is focused on investigating consumers' green purchase intention in relation to a packaged food product in the emerging market context of Vietnam.

### **1.4.3 Packaged Instant Noodles in Vietnam**

This section justifies why the packaged instant noodle was selected to explore consumers' purchase intention for food products in eco-friendly packaging in this research. According to Boston Consulting Group (2013), companies are more likely to encourage adoption of comfort and lifestyle products including packaged food products, cosmetics, motorcycles and refrigerators. Vietnam has a rapidly changing consumerist culture coupled with urbanisation and busy lifestyles which lead consumers to make more purchases for convenience (Euromonitor, 2017). Packaged food product categories are expected to grow as modern lifestyle trends increase demand for convenience foods. Among packaged food products, instant noodles are frequently consumed in Vietnam, thanks to its convenience and variety of uses (Euromonitor, 2017).

Vietnam is home to fifty instant noodle manufacturers (Vietnam News, 2016b), with three companies, Vina Acecook, Masan and Asia Foods, having a combined more than 70 per cent of market share. Vina Acecook is the market leader with 43 per cent, followed by Masan with 24 per cent and Asia Foods with 10 per cent (Vietnam Net, 2017b). There are over a hundred brands in the market and Vina Acecook alone owns more than 20 brands (Vietnam Net, 2017b), including the leading brand Hao Hao, the most chosen food brand in urban Vietnam in 2017 (Kantar Worldpanel, 2018). The other leading companies are Masan with Omachi brand and Asia Foods with Gau Do brand. Omachi is the most expensive at 5,500 VND per packet (around 0.24 USD) while Hao Hao and Asia are competitively priced around 2,500 VND to 3,500 VND per packet (approximately 0.11 USD - 0.15 USD). Uniben Foods with the brand Ba Mien and Uni-President Vietnam with the brands Vua Bep, Unif and Tieu Nhi altogether account for 26 per cent of the market (Vietnam Net, 2017b). These leading brands of instant noodles mostly come in plastic packages. Two companies offer mostly paper packages of instant noodles: Colusa-Miliket Foodstuff with the brand Miliket occupies two per cent of market share and Thien Huong Foods with Vi Huong brand having a small presence in the market (Vietnam Net, 2017b). The market also features small brands from local companies such as Vifon, Saigon Ve Wong, Kido and numerous foreign brands (Vietnam Net, 2017b).

In terms of size, Vietnam's instant noodle market had a value at 27 trillion VND (1.19 billion USD) in 2017 (Vietnam Investment Review, 2017). The Vietnamese people consumed nearly five billion packets of instant noodles in 2016 with 55 packets per capita per year, the second highest average personal consumption in the world, after South Korea (World Instant Noodles Association, 2018).

Packaged instant noodles are inherently low-involvement goods for most consumers, as are other convenience products. Consumers generally make low-involvement purchase decisions for convenience products; however, there are still exceptions (Beharrell and Denison, 1995). This is because consumers' involvement in the purchase of a daily product can be elevated for some enduring factors (Richin, Bloch and McQuarrie, 1992), such as environmental concern and involvement. Environmental concern can make consumers more enduringly involved with their daily product choices than the average consumer (Thøgersen, Jørgensen, and Sandager, 2012). For example, market surveys in the US show that consumers increasingly show concerns for the environment and want to buy greener products: they are willing to give up convenience in return for more eco-friendly products (GfK, 2017). In Vietnam, there is a need for a better understanding of consumers in terms of green consumption (De Koning *et al.*, 2015). Hence, part of this research is to explore whether or not Vietnamese consumers' daily food choices are affected by enduring reasons relating to environmental involvement and other internal factors.

Packaging for instant noodles is important in two dimensions: first, it serves as a food container and second, it represents an attractive image of the product to consumers. There are two main types of single-serve packages for instant noodles: bag-type and disposable cup/bowl. For the bag-type, consumers must cook the noodles in a separate pot. The bag type can be made of plastic, paper or biodegradable materials. Cup or bowl-type instant noodles are designed for eating noodles directly from the container mostly made of a foam material. The Vietnamese market is dominated by single-serve bag-type instant noodles, accounting for 92 per cent of market share (Nguoi Lao Dong, 2014). This research is focused on bag-type packaging due to its abundant availability in the market.

Overall, packaging is a very visible element of waste and mainly comes from household consumption. In food packaging, the majority of materials used are non-degradable petroleum-based plastic polymer materials which bring serious problems to the environment (Kirwan and Strawbridge, 2011). Therefore, consumers' environmental concern is driving the demand of paper packaging for food because it is more environmentally appealing (Furlong, 2015). Due to affordability, the majority of bag-type packaging for instant noodles in Vietnam is plastic even though paper is more environmentally friendly because of its lesser disposal impacts on the environment. Hence, consumer choice of paper packages as eco-friendly packaging is assumed in the scope of this research. Investigations into consumer perceptions and expectations of eco-friendly packaging in the packaged instant noodle category are also conducted in this research to confirm this assumption. In this sense, consumers' input as to what types of packaging are considered eco-friendly is collected for analysis of this research.

In sum, packaged instant noodles are convenient food products and purchase decisions are made on a frequent basis. In purchases of packaged instant noodles, green purchasing decisions will produce positive environmental impacts once consumers buy eco-friendly products in place of negatively high-impact ones (Prakash and Pathak, 2017). Given the high consumption volume and considering negative environmental impacts of packaging disposal from Vietnamese instant noodle consumers, this research determines to choose this product for investigations relating to green purchase intention.

## 1.5 RESEARCH QUESTIONS

This section presents the research questions for addressing the research gaps. The five research gaps identified in Section 1.3.1 have provided directions for this research. Accordingly, this PhD thesis explores what internal and external factors influence Vietnamese consumers' green purchase intention for a packaged food product with regard to eco-friendly packaging. Willingness to pay and shopping effort as a result of green purchase intention are also examined to provide a more accurate understanding of consumer behaviour in relation to eco-friendly packaging. The studied product is packaged instant noodles and the context is the emerging market of Vietnam. In addition, consumer perceptions of eco-friendly packaging are explored in order to provide input for the main investigation on green purchase intention in this research. Overall, the findings of this research will help the government and business sectors to better understand consumer perceptions of eco-friendly packaging and green purchase intention for instant noodles in eco-friendly packaging.

The central question of this research is:

*How do internal psychological and external contextual social factors influence consumers' green purchase intention for a packaged food product (packaged instant noodles) with regard to eco-friendly packaging?*

The following major research questions are developed for the purpose of this research related to instant noodles in eco-friendly packaging in the context of Vietnam:

- *What do consumers perceive to be eco-friendly packaging?*
- *What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*
- *What factor has the most significant influence on green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

## **1.6 RESEARCH APPROACH**

A pragmatic approach was adopted in this research to explore green purchase intention for a packaged food product with regard to eco-friendly packaging. The pragmatic approach was used to answer different research questions from different perspectives. The most important reason why this choice was made comes from the research questions. The overall position was to view the situation from different perspectives to answer different research problems. In this research, a mixed methods approach with a two-phase sequential design was used. A qualitative study using focus group interviews was undertaken in phase one to explore consumer perceptions of eco-friendly packaging. In addition, the qualitative phase validated antecedent factors, which were pre-determined from a literature review as potentially affecting green purchase intention. Findings from phase one were used to formulate the research model, which was then empirically examined in phase two. There were ten factors included in the research model: environmental involvement, environmental self-identity, subjective environmental knowledge, product involvement, perceived time pressure, perceived availability of alternatives, perceived descriptive norms, green purchase intention, willingness to pay and shopping effort.

In phase two of this research, data was collected via an online survey. An online consumer panel from a market research company operating in Vietnam answered the online questionnaire. Data was analysed with SmartPLS 3.0, using a two-step Partial Least Squares Structural Equation Modelling (PLS-SEM) process. Data analysis confirmed reliability and validity of the measurement model, which was followed by the validation of the structural model. The studied research model was then quantitatively assessed to examine the degree to which the model could predict green purchase intention concerning a food product (instant noodles) in eco-friendly packaging.

## **1.7 FINDINGS OF THE RESEARCH**

Phase one of this research explored consumer perceptions of eco-friendly packaging, given the context of Vietnam's packaged instant noodle market. Findings of phase one added to the emerging literature on consumer perceptions of eco-friendly packaging. It provided an in-depth analysis of eco-friendly packaging from consumer perspectives and identified three important dimensions of eco-friendly packaging from consumer expectations, namely, packaging materials, manufacturing technology and market appeal. Phase one of this research also found that many consumers

perceived themselves as environmentally friendly people. This subjective evaluation of self-identity was also validated and confirmed in phase two through quantitative analysis of online survey data.

Phase two of this research identified two direct significant antecedents of green purchase intention including environmental self-identity and environmental involvement. Data analysis also revealed that green purchase intention is positively related to willingness to pay and shopping effort for instant noodles in eco-friendly packaging. In addition, research results indicated that environmental self-identity and environmental involvement indirectly affect willingness to pay and shopping effort for eco-friendly packaging. These findings show positive news for marketing effort in making eco-friendly packaging available in the instant noodle market of Vietnam.

## **1.8 STRUCTURE OF THE THESIS**

There are nine chapters in this thesis, as detailed below:

Chapter 1 is an overview of the thesis, including justifications for the research, research context, research questions, research approach and major research findings

Chapter 2 supplies an overview of the green consumption literature. It focuses on selected green purchase intention and behaviour studies from 2010 onwards. It describes the advantages and the limitations of each behavioural model commonly used in selected studies. Then, it argues for an integrative model to be developed to reach a more accurate understanding of green purchase intention.

Chapter 3 explores variables that might predict Vietnamese consumers' green purchase intention concerning a food product (instant noodles) in eco-friendly packaging. It argued that internal psychological and external social influences could be further investigated to predict green purchase intention. In addition, the chapter presents the preliminary conceptual research model. The development of research hypotheses is also discussed, based on a literature review in the consumer behaviour and green consumption field.

Chapter 4 provides an overview of the research design, including the research philosophy and research procedures. The chapter starts with the selected research paradigm, including a rationalisation of the mixed methods approach. The research procedures are outlined with the choice of the sequential two-phase mixed-methods design. It also describes the research design for

phase one of this research. The use of focus group interviews in phase one is justified. The coding process and content analysis for phase one are described.

Chapter 5 discusses the findings from phase one of the research. These findings are incorporated into the refined research model and updated research hypotheses to be tested in phase two of this research.

Chapter 6 presents research design for phase two of the research. The development of the research instrument is detailed. Quantitative methods are also outlined, with the discussion on tests of reliability and validity for measures used in the research. In addition, the chapter provides information about data collection methods and justifications for the use of PLS-SEM as the data analysis method in this PhD research.

Chapter 7 presents the quantitative data analysis with PLS-SEM. It discusses the two-step assessment of the measurement model and the structural model. This chapter ends by examining the research hypotheses which explore the relationships between variables incorporated in the research model. Data relating to each hypothesis is presented. The confirmation or rejection of each of the research hypotheses is also discussed.

Chapter 8 discusses the findings of phase two, which are synthesised with the existing literature on green purchase intention. A detailed discussion and analysis of each of the research hypotheses is also presented.

Chapter 9 reviews the original research questions to be addressed. The theoretical and practical implications are discussed and the main contributions to the body of knowledge on green purchase intention are detailed. The research limitations are acknowledged and future research directions are identified. Finally, concluding remarks close the thesis.

## CHAPTER 2 – LITERATURE REVIEW

### 2.1 INTRODUCTION

This chapter discusses the selection of a holistic approach which is adopted in this research. First, an overview of green and sustainable consumption behaviour is presented in Section 2.2. A distinction between sustainable consumption behaviour (SCB) and green consumption behaviour (GCB) is highlighted for the focus of this research. Next, Section 2.3 reviews recent green consumption studies conducted in the Vietnamese market context. Section 2.4 specifically reviews recent literature on green purchase intention and behaviour (GPIB). Section 2.5 supplies a review of existing behavioural theories employed in recent GPIB studies to examine green purchase intention and behaviour. Limitations of recent GPIB studies summarised in Section 2.6 justify the necessity for the development of the conceptual research model. Section 2.7 discusses the framing of the preliminary conceptual model which embraces internal and external factors for examination in this research. Section 2.8 provides the chapter summary.

### 2.2 GREEN AND SUSTAINABLE CONSUMPTION

Green and sustainable consumption has been highlighted as a priority agenda for sustainable development. The United Nations Sustainable Development Goal #12 (UN SDG12, 2015) states that “sustainable consumption and production aims at doing more and better with less, increasing welfare gains from economic activities by reducing resource use, degradation and pollution along the whole lifecycle, while increasing quality of life”. Accordingly, it emphasises that sustainable consumption and production has become a global issue, in which sustainable consumption involves engaging consumers through awareness-raising and education on sustainable consumption and lifestyles. Consumers are increasingly conscious that their consumption practices affect the environment in many ways such as climate change, water and air pollution (Wei *et al.*, 2017). While several motivations for this shift are identified, the top reason for this growing commitment to sustainability is that consumers prefer sustainable products and services (Luchs, Phipps and Hill, 2015). However, these positive attitudes do not necessarily lead to sustainable consumption behaviour (Prothero *et al.*, 2011). This complexity leads to a question this research wants to answer: “What are the factors influencing green or sustainable consumption behaviour?”

At this point, it would be useful to review the history of the term sustainable consumption. Sustainable consumption was originally used in the Rio Earth Summit of the United Nations

Conference on Environment and Development in 1992 (Banbury, Stinerock and Subrahmanyam, 2013). Since then, it has become one priority item in sustainable development strategies of many nations (Jones, Hillier and Comfort, 2011). Many countries consider sustainable consumption and production as a core policy objective nationally and internationally (Cars and West, 2015). However, sustainable consumption is a major challenge for businesses having to deal with pressures from governments and other stakeholders with conflicting interests (Kang and Hur, 2012). According to the World Business Council for Sustainable Development (2016), current global consumption patterns are unsustainable. Business practices alone will not be sufficient to bring global consumption to a sustainable level. Changes are needed in consumer lifestyles, especially how consumers buy and use products and services. To develop effective strategies to promote sustainable consumption, a good understanding of the key drivers of green and sustainable consumption would be needed.

Before proceeding, it is worthwhile to define the terms “sustainable consumption behaviour (SCB)” and “green consumption behaviour (GCB)”. The terms “sustainable consumption” and “green consumption” have been used interchangeably in studies on environmentally friendly consumption (Johnstone and Hooper, 2016). According to Johnstone and Hooper (2016), defining SCB is more challenging as sustainable consumption definitions have been diverse. Johnstone and Hooper (2016) used the Brundtland Report 1987 to define SCB in terms of satisfying the current generation’s needs without compromising the needs of the next generations. The Organisation for Economic Co-operation and Development OECD (2008) states that the sustainability of consumption is considered not only in environmental terms but also in economic and social terms. The United Nations Sustainable Development Goal #12 (UN SDG12, 2015) defines sustainable consumption and production together as “promoting resource and energy efficiency, sustainable infrastructure, and providing a better quality of life for all”. With regard to GCB, it refers to behaviour that is perceived as having a nil, minimal or reduced negative consequence on the environment, such as recycling and purchasing eco-friendly products (Johnstone and Tan, 2015). In short, SCB embraces consumption in environmental, economic and social effects whereas GCB focuses more on environmental effects of consumption.

For the purpose of this research, GCB is primarily in focus because it looks at green purchase intention for a food product in eco-friendly packaging, which is consistent with purchasing environmentally friendly products as one aspect of GCB. GCB is thus related to private-sphere behaviour, which consists of the purchase, consumption and disposal of personal and household products that could reduce negative impacts on the environment (Mostafa, 2007; Stern, 1999). In

other words, GCB research focuses on the nature of consumers and their actions as individuals (Peattie, 2010). To elaborate, green purchase intention or behaviour refers to the intention or behaviour of individual consumers in purchasing products with environmentally friendly characteristics. Purchases of instant noodles in eco-friendly packaging in this research's scope can be considered as green purchase behaviours and is one example of GCB. Hence, consumer purchase intention with regard to instant noodles in eco-friendly packaging in this research can also be considered as green purchase intention.

Studies on green or sustainable consumption have made progress in exploring consumption practices. According to Geng, Liu and Zhu (2017), due to resource scarcity and environmental issues, sustainable production and consumption has gained increasing research attention all over the world. Some examples of green or sustainable consumption in existing studies include consumer behaviours such as recycling (e.g., De Koning *et al.*, 2016; Nguyen *et al.*, 2017; Pakpour *et al.*, 2014; Thomas and Sharp, 2013), organic food consumption (e.g., Gorissen and Weijters, 2016; Nuttavuthisit and Thøgersen, 2015) and purchasing environmentally friendly products and services (e.g., Arli *et al.*, 2018, Barbarossa and de Pelsmacker, 2016; Chekima *et al.*, 2016; Kumar, Manrai and Manrai, 2017; Maniatis, 2016; Moser, 2015; Mostafa, 2006; Namkung and Jang, 2017; Nguyen, Lobo and Greenland, 2017; Prakash and Pathak, 2017; Verma and Chandra, 2018; Yadav and Pathak, 2016). In relation to the green purchase behaviour literature, several studies have been reported (e.g., Arli *et al.*, 2018; Hsu, Chang and Yansritakul, 2017; Khare, 2015; Konuk, Rahman and Salo, 2015; Mostafa, 2006; Prakash and Pathak, 2017; Wei *et al.*, 2017; Yadav and Pathak, 2016, 2017). Some examples of green products are organic food, energy-saving appliances, green skincare products, bio-fuels and eco-friendly packaged products (see Hsu, Chang and Yansritakul, 2017; Nguyen, Lobo and Nguyen, 2017; Nuttavuthisit and Thøgersen, 2017; Prakash and Pathak, 2017; Welsch and Kuhling, 2011; Young *et al.*, 2010). In an effort to understand green consumption behaviour (GCB), many researchers have investigated antecedents which could lead to GCB, such as Arli *et al.* (2018), Dagher and Itani (2014), Newton *et al.* (2015), Prakash and Pathak (2017) and Yadav and Pathak (2016). Most of these studies, however, primarily examine general GCB. This research wants to contribute in the stream of GCB research by looking more closely at specific GCB with regard to instant noodles in eco-friendly packaging.

## **2.3 GREEN AND SUSTAINABLE CONSUMPTION IN VIETNAM**

Research on green and sustainable consumption is very important to the emerging market of Vietnam as experiences in Vietnam can also be applied to other emerging countries with similar

consumption trends. Compared to studies in developed countries, green and sustainable consumption studies in emerging market contexts are far fewer (Geng, Liu and Zhu, 2017). In consumer behaviour literature, studies on green and sustainable consumption in Vietnam are sparsely published. Back in 2008, market research company TNS surveyed Vietnamese consumers for a preliminary understanding of sustainable consumption in the country. The findings indicated that consumers had low awareness of sustainability and littering was common behaviour in Vietnam (TNS, 2008). Recently, there have been more academic Vietnam-based studies on green and sustainable consumption. For example, some studies have been conducted on Vietnamese consumers' environmental behaviour and green consumption (e.g., Brennan *et al.*, 2014b; De Koning *et al.*, 2015; De Koning *et al.*, 2016; Hoang and Nguyen, 2012; Nguyen *et al.*, 2016; Nguyen, Lobo and Greenland, 2017; Nguyen, Lobo and Nguyen, 2017; Parker *et al.*, 2014).

Findings from these studies can be summarised as follows:

- Evidence has been scarcely found in Vietnam about consumer awareness of environmental issues and about consumer eco-friendly behaviour (Hoang and Nguyen, 2012).
- Young people in Vietnam show pro-environmental attitudes and behaviours (Brennan *et al.*, 2012, 2014b). However, they do not seem to consider environmental impacts of their purchase intention and behaviour, which is clearly demonstrated in hedonic purchases and to some extent in utilitarian purchases (Parker *et al.*, 2014).
- Consumers in Vietnam cited lack of opportunity and capacity as the main reasons for not leading an eco-friendly lifestyle (De Koning *et al.*, 2015; De Koning *et al.*, 2016).
- Consumers distrusted eco-friendly products because of companies' misuse of green labelling and lack of credibility (De Koning *et al.*, 2015).
- Vietnamese consumers have started to engage in conservation practices such as energy saving and recycling; thus, conditions to facilitate such behaviours need to be made more available (Nguyen *et al.*, 2016).
- Knowledge, attitude and perceived barriers significantly affect green purchase behaviour in energy-saving appliances. Moreover, environmental attitudes and subjective norms positively affect consumers' green purchase intention (Nguyen, Lobo and Nguyen, 2017).
- Cultural values relating to collectivism and long-term orientation influence consumers' green purchase behaviour (Nguyen, Lobo and Greenland, 2017).
- Still, there is a need for a more knowledgeable understanding of Vietnamese consumers in terms of green and sustainable consumption (De Koning *et al.*, 2015).

In short, Vietnam-based studies focused on sustainable behaviour such as pro-environmental awareness, attitudes and behaviours (Brennan *et al.*, 2012, 2014b; Hoang and Nguyen, 2012) or energy saving and recycling (Nguyen *et al.*, 2016). Some studies, however, opened an avenue in the field of green consumption in Vietnam, such as De Koning *et al.* (2015), Nguyen, Lobo and Nguyen (2018), Nguyen, Lobo and Greenland (2017) and Parker *et al.* (2014). The limitation is that the authors did not examine consumer behaviour relating to specific product categories in association with the issues of packaging and packaging disposal. Hence, this research hopes to contribute a fresh look at green purchase intention specifically for instant noodles with regard to eco-friendly packaging. This knowledge can benefit not only researchers in the same field but also the government and business sectors in an effort to better understand green consumer behaviour relating to eco-friendly packaging in Vietnam.

## **2.4 REVIEW OF RECENT GREEN PURCHASE INTENTION AND BEHAVIOUR (GPIB) STUDIES**

In Chapter 1, the green consumption literature was reviewed to find a gap so as to justify the need to conduct this research. With the aim to explore consumers' green purchase intention for a packaged food product with regard to eco-friendly packaging, this research has two phases. In the first phase, investigations are conducted to understand what consumers perceive to be eco-friendly packaging. The main phase of this research is of an empirical nature to collect systematic evidence about factors which may significantly influence green purchase intention. As the main objective of this research is to explore internal and external factors which might impact on green purchase intention, a review of the existing behavioural models is undertaken to provide theoretical foundations for this research. Therefore, in this section, studies on green purchase intention and behaviour (GPIB) from 2010 onwards are reviewed to gain up-to-date knowledge as to what behavioural models were commonly used to examine GPIB.

Although there are fewer studies on GPIB in emerging markets compared to developed markets, GPIB has recently been getting more attention in emerging countries. A range of studies have examined factors that might influence GPIB with the main focus on identifying major influencing factors in GPIB and understand the respective structure and relative importance of each factor (Khare, 2015). Because this research conducts an empirical assessment of green purchase intention, the review of similar GPIB studies is focused on empirical or evidence-based research. The premise is that empirical studies reflect a systematic attempt to collect information about an identified problem (Callahan and Moon, 2007), which fits the purpose of this research. Table 2-1 presents a

list of studies on GPIB from 2010 onwards to reflect the most up-to-date findings and to identify the behavioural models which were commonly used in recent GPIB studies. These studies were selected as they all investigated green purchase intention or green purchase behaviour, based on an existing behavioural model. The terms used in these studies might be different, such as environmentally friendly purchase behaviour, environmental purchase behaviour, green purchase behaviour, green purchasing, green buying and green purchase intention. These terms were used as key words in conducting the search for relevant studies on Google Scholar.

At this point of review, three criteria were used to select relevant studies: (1) the study should have been published in highly ranked journals from 2010 onwards; (2) The study should be empirical by nature; (3) The study should be focused on examining factors affecting green purchase intention or behaviour, underpinned by an existing behavioural model. Table 2-1 is illustrative of several studies on GPIB based on an existing behavioural model, yet not an exhaustive list of all relevant studies from 2010 onwards.

**Table 2-1: Behavioural models associated with recent GPIB studies from 2010 onwards**

| Author, year, journal   | Green purchase intention | Green purchase behaviour | Associated theories | Variables examined  | Research contexts (country, products)   | Variance explained |
|---|--------------------------|--------------------------|---------------------|---|---|--------------------|
| Ramayah, Lee and Mohamad, 2010, Resources, Conservation and Recycling | √                        |                          | TRA                 | Values, environmental consequences, individual consequences       | Malaysia, cloth diapers                 | 26 per cent        |
| Kim and Chung, 2011, Journal of Consumer Marketing                    | √                        |                          | TPB                 | Consumer values, consumers' past experiences                      | The USA, organic personal care products | 69 per cent        |
| Ha and Janda, 2012, Journal of Consumer Marketing                     | √                        |                          | TRA                 | Knowledge, belief, confidence, environmental awareness, eagerness | Korea, green products                   | 43 per cent        |

| <b>Author, year, journal</b>   | <b>Green purchase intention</b> | <b>Green purchase behaviour</b> | <b>Associated theories</b>        | <b>Variables examined</b>  | <b>Research contexts (country, products)</b>   | <b>Variance explained</b> |
|--|---------------------------------|---------------------------------|-----------------------------------|--|--|---------------------------|
| Liu, Wang, Shishime and Fujitsuka, 2012, Sustainable Development     | √                               | √                               | TRA                               | Perception of self-responsibility  | China, a range of green products (energy saving products, water saving products, organic foods, recycled paper products, green construction materials) | No information available  |
| Albayrak, Aksoy and Caber, 2013, Marketing Intelligence and Planning | √                               |                                 | Theory of Planned Behaviour (TPB) | Environmental concern and scepticism   | Turkey, general green products   | 20.1 per cent             |
| Kang, Liu and Kim, 2013, International Journal of Consumer Studies   | √                               |                                 | TPB                               | Consumer knowledge, perceived consumer effectiveness, perceived personal relevance | Cross-country study (United States, South Korea, China), environmentally sustainable textile and apparel products                                      | No information available  |
| Zhou, Thøgersen, Juan and Huang, 2013, Journal of Consumer Marketing | √                               | √                               | TPB                               | Personal values  | China, organic food  | 45 per cent               |
| Chen and Tung, 2014, International Journal of Hospitality Management | √                               |                                 | TPB                               | Environmental concern, perceived moral obligations                                 | Taiwan, green hotels   | No information available  |

| <b>Author, year, journal</b>  | <b>Green purchase intention</b> | <b>Green purchase behaviour</b> | <b>Associated theories</b>     | <b>Variables examined</b>  | <b>Research contexts (country, products)</b>   | <b>Variance explained</b> |
|---|---------------------------------|---------------------------------|--------------------------------|--|--|---------------------------|
| Zhao, Gao, Wang and Zhu, 2014, Journal of Cleaner Production                      |                                 | √                               | Integrative model based on TPB | Perceived environmental benefits, economic benefits, green reliability, product's green appearance | China, general green products  | 48.5 per cent             |
| Choi, Jang and Kandampully, 2015, International Journal of Hospitality Management |                                 | √                               | Value-Belief-Norm theory (VBN) | Green trust  | United States, green hotels  | No information available  |
| Han, 2015, Tourism Management   | √                               |                                 | VBN, TPB                       | Environmental awareness, perceived effectiveness, eco-friendly behaviour, eco-friendly reputation  | United States, green hotels  | 57.9 per cent             |
| Newton, Tsarenko, Ferraro and Sands, 2015, Journal of Business Research           | √                               |                                 | TPB                            | Environmental concern, intentional learning, incidental learning                                   | Australia, green products and services   | No information available  |
| Konuk, Rahman and Salo, 2015, International Journal of Consumer Studies           | √                               |                                 | TRA                            | Green satisfaction, green trust, green brand equity  | Cross-country study, Finland, Turkey and Pakistan, green household electrical appliances | 73 per cent               |

| <b>Author, year, journal</b>   | <b>Green purchase intention</b> | <b>Green purchase behaviour</b> | <b>Associated theories</b> | <b>Variables examined</b>   | <b>Research contexts (country, products)</b> | <b>Variance explained</b> |
|--|---------------------------------|---------------------------------|----------------------------|---|--|---------------------------|
| Khare, 2015, Marketing Intelligence and Planning                             |                                 | √                               | TPB                        | Environmental concern and attitudes, social and personal environmental norms, social influence, green self-identity | India, green products                        | 54.9 per cent             |
| Moser, 2015, Journal of Consumer Marketing                                   |                                 | √                               | TPB                        | Willingness to pay, personal norms  | Germany, green products                      | 63.8 per cent             |
| Chen and Hung, 2016, Technological Forecasting and Social Change             | √                               |                                 | TPB                        | Environmental consciousness, environmental ethics and beliefs   | Taiwan, green products                       | 61.7 per cent             |
| Paul, Modi and Patel, 2016, Journal of Retailing and Consumer Services       | √                               | √                               | TRA, TPB                   | Environmental concern   | India, green products                        | 46 – 49 per cent          |
| Yadav and Pathak, 2016, Journal of Cleaner Production                        | √                               |                                 | TPB                        | Environmental concern   | India, green products                        | 37 per cent               |
| Hsu, Chang and Yansritakul, 2017, Journal of Retailing and Consumer Services | √                               |                                 | TPB                        | Country of origin, price  | Taiwan, green skincare products              | 48.2 per cent             |

| <b>Author, year, journal</b>  | <b>Green purchase intention</b> | <b>Green purchase behaviour</b> | <b>Associated theories</b> | <b>Variables examined</b>   | <b>Research contexts (country, products)</b> | <b>Variance explained</b>   |
|---|---------------------------------|---------------------------------|----------------------------|---|--|---|
| Nguyen, Lobo and Greenland, 2017, Marketing Intelligence & Planning   |                                 | √                               | TPB, VBN                   | Cultural values   | Vietnam, green products                      | 29 per cent   |
| Nuttavuthisit and Thøgersen, 2017, Journal of Business Ethics         | √                               | √                               | TPB                        | Consumer trust  | Thailand, organic food                       | 47 per cent   |
| Prakash and Pathak, 2017, Journal of Cleaner Production               | √                               |                                 | TRA                        | Personal norms, environmental concern, willingness to pay                                   | India, eco-friendly packaged products        | 74 per cent   |
| Wei, Chiang, Kou and Lee, 2017, Business Strategy and the Environment | √                               | √                               | TRA                        | Environmental involvement, informational utility, green advertising scepticism, green trust | Taiwan, general green products               | 33 per cent   |
| Yadav and Pathak, 2017, Ecological Economics                          | √                               | √                               | TPB                        | Perceived values, environmental concern, willingness to pay                                 | India, general green products                | 61 per cent for green purchase intention / 31 per cent for green purchase behaviour |
| Jaiswal and Kant, 2018, Journal of Retailing and                      | √                               | √                               | TRA, TPB                   | Attitude, environmental concern, perceived  | Indian, green products                       | 25.1 per cent for green purchase intention /  |

| Author, year, journal   | Green purchase intention | Green purchase behaviour | Associated theories | Variables examined  | Research contexts (country, products) | Variance explained  |
|---|--------------------------|--------------------------|---------------------|---|---------------------------------------|---|
| Consumer Services   |                          |                          |                     | consumer effectiveness, perceived environmental knowledge   |                                       | Green purchase intention explained 7.9 per cent of the variance in green purchase behaviour |
| Arli, Tan, Tjiptono and Yang, 2018, International Journal of Consumer Studies | √                        |                          | TPB                 | Pro-environmental self-identity, ethical obligation, perceived sense of responsibility, perceived readiness to be green | Indonesia, green products             | No information available  |
| Verma and Chandra, 2018, Journal of Cleaner Production                        | √                        |                          | TPB                 | Moral reflectiveness, conscientiousness   | India, green hotels                   | 42.1 per cent   |

Table 2-1 shows that there have been a diverse set of approaches to examine GPIB. The common characteristic is that most recent GPIB studies were based on existing behavioural theories. A summary of the findings is outlined below:

First, the majority of selected studies on GPIB are in the context of Asian emerging markets, demonstrating that this topic has recently been receiving increasing attention from Asia-based researchers. Most studies reviewed were conducted in Asian research contexts such as China, Malaysia, India, Indonesia, Thailand, Taiwan and Vietnam (e.g., Arli *et al.*, 2018; Chen and Hung, 2016; Ha and Janda, 2012; Hsu, Chang and Yansritakul, 2017, Jaiswal and Kant, 2018; Khare, 2015; Liu *et al.*, 2012; Nguyen, Lobo and Greenland, 2017; Nuttavuthisit and Thøgersen, 2017;

Prakash and Pathak, 2017; Paul, Modi and Patel, 2016; Verma and Chandra, 2018; Wei *et al.*, 2017; Yadav and Pathak, 2016; Yadav and Pathak, 2017; Zhao *et al.*, 2014). Among these Asian-based studies, one study was focused on green product contexts of Vietnam (e.g., Nguyen, Lobo and Greenland, 2017). This reflects the increasing concern of consumers in emerging markets related to environmental issues of consumption activities.

Second, as can be seen in Table 2-1, several other GPIB studies were undertaken in Western countries. Some examples are Australia (Newton *et al.*, 2015), Germany (Moser, 2015) and the United States (e.g., Choi, Jang and Kandampully, 2015; Han, 2015; Kim and Chung, 2011). In addition, two studies conducted cross-country analysis to compare consumers' GPIB between Western and Asian contexts (e.g., Kang, Liu and Kim, 2013; Konuk, Rahman and Salo, 2015). This demonstrates that researchers are showing more interest in doing GPIB research across market contexts (Western and Asian contexts) to reach a fuller understanding of GPIB as GPIB may vary across different markets.

Third, in many reviewed studies, the authors mainly looked at general green products and not specifically at a particular product category (e.g., Albayrak, Aksoy and Caber, 2013; Arli *et al.*, 2018; Chen and Hung, 2016; Ha and Janda, 2012; Jaiswal and Kant, 2018; Khare, 2015; Moser, 2015; Newton *et al.*, 2015; Nguyen, Lobo and Greenland, 2017; Paul, Modi and Patel, 2016; Wei *et al.*, 2017; Yadav and Pathak, 2016; Yadav and Pathak, 2017; Zhao *et al.*, 2014). Several authors, however, examined GPIB in specific product categories such as organic food (Nuttavuthisit and Thøgersen, 2017; Zhou *et al.*, 2013), green hotels (Chen and Tung, 2014; Choi, Jang and Kandampully, 2015; Han, 2015; Verma and Chandra, 2018), green skincare products (Hsu, Chang and Yansritakul, 2017), green household electrical appliances (Konuk, Rahman and Salo, 2015), environmentally sustainable textile and apparel products (Kang, Liu and Kim, 2013). Especially, the study by Liu *et al.* (2012) examined GPIB of Chinese consumers towards a range of green products (energy saving products, water saving products, organic foods, recycled paper products and green construction materials). This is of particular interest, given that this PhD research echoes the point raised by Rokka and Uusitalo (2008) that more studies should examine green consumption behaviour in specific product categories as consumers' involvement vary across product contexts.

Fourth, when it comes to consumer behaviour towards eco-friendly packaging, there has been little research on this topic within the reviewed studies. This coincided with the discussion in Section 1.3.1 regarding the lack of research on consumer behaviour associated with eco-friendly packaging in developing countries. In Table 2-1, the only study that investigated eco-friendly packaged

products is Prakash and Pathak (2017)'s which is in the context of India. Nevertheless, Prakash and Pathak (2017) only examined general eco-friendly packaged products, but not specifically for a specific packaged food product, as in the intended scope of this research.

Fifth, Table 2-1 also shows a list of variables examined in association with GPIB in the reviewed studies. The three most commonly used variables across the reviewed studies are listed below in order of appearance:

- Environmental concern or involvement (see Albayrak, Aksoy and Caber, 2013; Chen and Tung, 2014; Newton *et al.*, 2015; Han, 2015; Jaiswal and Kant, 2018; Khare, 2015; Paul, Modi and Patel, 2016; Prakash and Pathak, 2017; Wei *et al.*, 2017; Yadav and Pathak, 2016; Yadav and Pathak, 2017)
- Environmental knowledge or consciousness or awareness or learning or information (see Chen and Hung, 2016; Ha and Janda, 2012; Han, 2015; Jaiswal and Kant, 2018; Kang, Liu and Kim, 2013; Newton *et al.*, 2015; Wei *et al.*, 2017).
- Willingness to pay (see Moser, 2015; Prakash and Pathak, 2017; Yadav and Pathak, 2017)

Other factors include environmental beliefs, personal values, cultural values, consumer trust, green trust, social norms, green self-identity or pro-environmental self-identity, factors relating to personal responsibility (e.g., moral obligation, conscientiousness and responsibility), green brand equity, country of origin and price. The list of variables indicates that there have been a diverse set of perspectives based on extending existing behavioural theories to examine GPIB in selected GPIB studies. This is to be taken as the premise of this research that a broader set of perspectives needs to be adopted to investigate GPIB, thereby increasing knowledge of GPIB.

Finally, the most important finding is related to the commonly used behavioural theories underpinning the reviewed studies. Table 2-1 shows that Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) and its extended version Theory of Planned Behaviour (TPB) (Ajzen, 1985) are the two theoretical frameworks widely used in most GPIB studies from 2010 onwards. Studies which used the TRA include Ha and Janda (2012), Konuk, Rahman and Salo (2015), Liu *et al.* (2012), Paul, Modi and Patel (2016), Prakash and Pathak (2017) and Wei *et al.* (2017). A majority of the reviewed studies used the TPB (see Albayrak, Aksoy and Caber, 2013; Arli *et al.*, 2018; Chen and Hung, 2016; Chen and Tung, 2014; Hsu, Chang and Yansritakul, 2017; Kang, Liu and Kim, 2013; Newton *et al.*, 2015; Nuttavuthisit and Thøgersen, 2017; Han, 2015; Khare, 2015; Paul, Modi and Patel, 2016; Verma and Chandra, 2018; Yadav and Pathak, 2016; Yadav and

Pathak, 2017; Zhao *et al.*, 2014; Zhou *et al.*, 2013). In addition, a few studies were based on the Value-Belief-Norm model and examples are Choi, Jang and Kandampully (2015), Han (2015) and Nguyen, Lobo and Greenland (2017). Overall, the TPB is the most widely-used theoretical framework in GPIB research from 2010 onwards.

According to Bamberg and Möser (2007) and Phipps *et al.* (2013), researchers who consider green purchases to be self-interested behaviours often use rational decision models like the TRA and the TPB. On the other hand, researchers who view green purchases as pro-social behaviours often base their studies on existing theories drawn from Stern (2000)'s Value-Belief-Norm (VBN) model (Phipps *et al.*, 2013). In sum, most studies on GPIB from 2010 onwards were based on three models: the TRA, the TPB and the VBN (see Table 2-1). The percentage of explained variance of GPIB of the studies under review varies within a 20-74 per cent range (see Table 2-1). Moreover, most of these studies produced 20-48 per cent of explained variance of GPIB (e.g., Albayrak, Aksoy and Caber, 2013; Arli *et al.*, 2018; Chen and Hung, 2016; Ha and Janda, 2012; Hsu, Chang and Yansritakul, 2017; Jaiswal and Kant, 2018; Nguyen, Lobo and Greenland, 2017; Nuttavuthisit and Thøgersen, 2017; Paul, Modi and Patel, 2016; Verma and Chandra, 2018; Wei *et al.*, 2017; Yadav and Pathak, 2016; Yadav and Pathak, 2017; Zhao *et al.*, 2014). This indicates that there is still room to gain more understanding of the phenomenon. To improve the knowledge of GPIB, it is necessary to review the theoretical models underpinning these GPIB studies. This indicates a need to critically review the TRA, the TPB and the VBN models to identify the strengths and limitations of each to set out a more comprehensive theoretical base for this research.

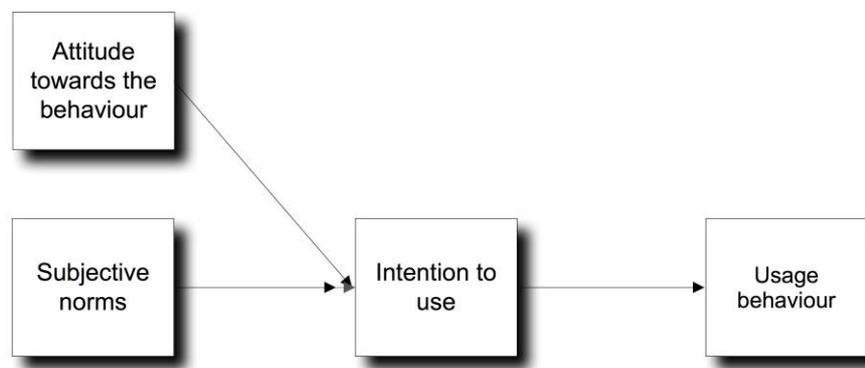
## **2.5 BEHAVIOURAL MODELS COMMONLY USED TO INVESTIGATE GPIB**

This section provides a discussion of three existing behavioural models that have been commonly used in recent GPIB literature and that have been identified in Section 2.4. It describes a variety of assumptions used in these models and draws their implications for understanding GPIB. The Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB) and the Value-Belief-Norm theory (VBN) are examined in terms of their explanatory power for GPIB.

### **2.5.1 The Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB)**

The TRA and the TPB are two commonly-used theoretical frameworks in studies on green purchase intention (see Albayrak, Aksoy and Caber, 2013; Chen and Tung, 2014; Han, 2015; Hsu *et al.*, 2017; Konuk, Rahman and Salo, 2015; Maichum *et al.*, 2016; Paul, Modi and Patel, 2016; Prakash

and Pathak, 2017; Wei *et al.*, 2017; Yadav and Pathak, 2016). Fishbein and Ajzen (1975) developed the TRA to explain behavioural intention. Ajzen and Fishbein (1980) posited that intention is one important antecedent of human behaviour. Moreover, humans are rational in making systematic use of any available information to inform their purchase intention (Paul, Modi and Patel, 2016). The TRA focuses on individual intention to engage in a given behaviour. In green consumption contexts, intention can be understood as the degree to which consumers show willingness to purchase green product alternatives. The TRA is effective in explaining psychological/cognitive processes to understand consumers' decision-making (Han and Kim, 2010). The TRA suggests that attitude towards performing behaviour, combined with motivation to comply with perceived social pressures from people whose opinion is important to the individual, termed as the subjective norm, are the sole antecedents of behavioural intention (Fishbein and Ajzen, 1975). Figure 2-1 shows a visual illustration of the TRA model.

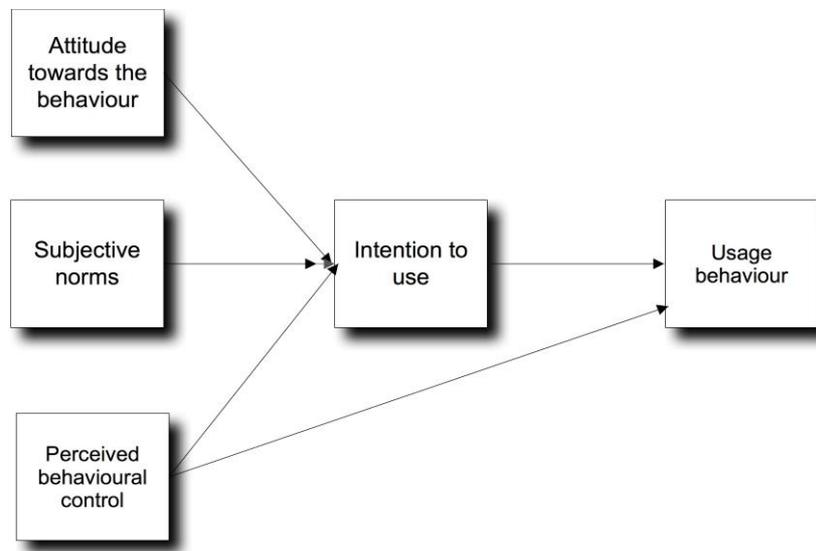


**Figure 2-1: The TRA model (reproduced from Fishbein and Ajzen, 1975)**

Application of the TRA is restricted to behaviours that are undertaken voluntarily with no external or internal obstacles existing which may potentially prevent the behaviour involved. To overcome this disadvantage, many researchers have used the extended TRA in studies on GCB. For instance, new variables were incorporated into the extended TRA to study green purchase behaviour, such as consumer product knowledge, consumer confidence and consumer eagerness (Ha and Janda, 2012), green brand equity (Konuk, Rahman and Salo, 2015), and environmental concern and social influences (Prakash and Pathak, 2017). The commonalities of these studies are the exploratory nature of the extended TRA application in GCB research. As pointed out by Han, Hsu and Sheu (2010), the omission of certain factors which can limit human choices (e.g. resources) questions the applicability of the TRA. To be specific, consumers may view green products positively, but may not be able to purchase them because of low incomes or limited product availability (Paul, Modi

and Patel, 2016). Hence, external contextual conditions should be considered in examining green consumption behaviour.

Since consumers may not always be able to do what they intend to, other interfering factors may need to be examined. Armitage and Conner (2001) stated that when constraints on action as perceived by consumers might affect their intention, adding a factor to reflect constraints perceived by consumers could improve the TRA's predictive power. In this sense, the non-volitional perceived behavioural control factor was incorporated into the TPB to overcome the limitations of the TRA (Ajzen, 1985, 1991). Figure 2-2 is a visual representation of the TPB.



**Figure 2-2: The TPB model (reproduced from Ajzen, 1985)**

The TPB utilises all the antecedents of the TRA with the addition of a new determinant, perceived behavioural control. The TPB assumes that attitude, subjective norm and perceived behavioural control are the predictors of behavioural intention (Ajzen, 1991). The TPB can examine the influence of personal antecedents and social surroundings as well as non-volitional antecedents on intention (Han, Hsu and Sheu, 2010). With perceived behavioural control, attitude and subjective norm, the TPB improves the model's predictability for GCB (Paul *et al.*, 2016). This is the main reason why the TPB has been widely applied in GCB literature.

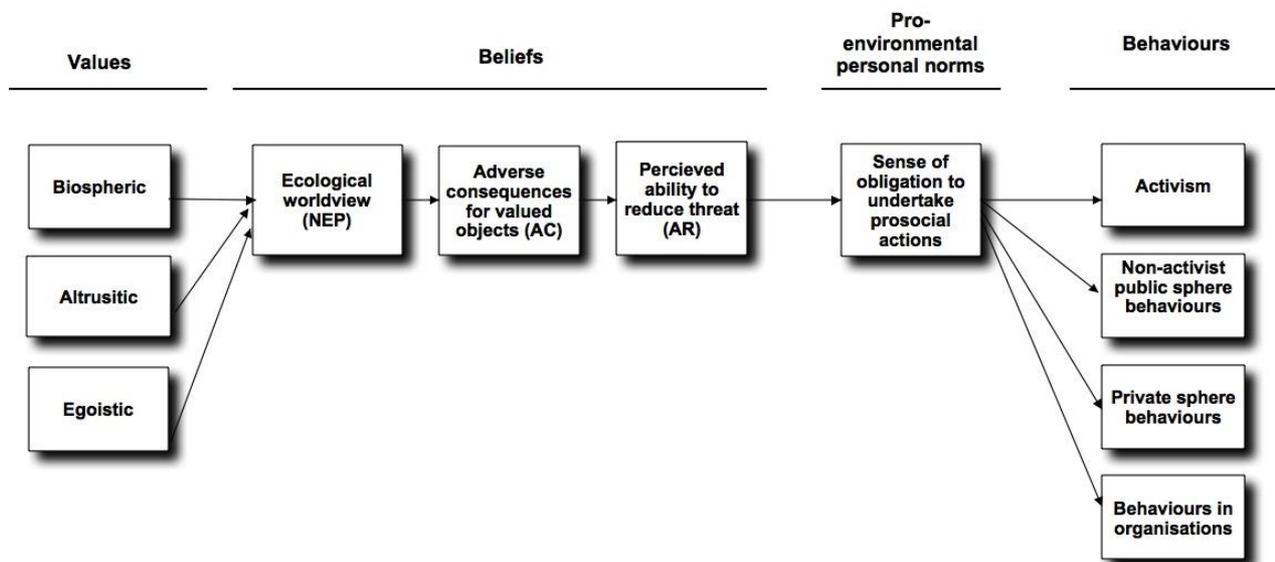
When it comes to the topic of green purchases such as organic food choices and green purchase intention, many extant and recent studies adopted the TPB such as Aertsens *et al.* (2009), Chen and Peng (2012), Chen and Tung, (2014), Davies, Foxall and Pallister (2002), Davis *et al.* (2006), Dean

*et al.* (2012), Han *et al.* (2011), Mostafa (2007), Paul and Rana (2012), Tarkiainen and Sundqvist (2005), Yadav and Pathak (2016) and Zhou *et al.* (2013). Whereas some researchers are convinced that the TPB is powerful in explaining green purchase behaviour, others maintain that it is far from sufficient in predicting behaviours. Most critics question its efficacy in predicting behaviours or raise issues with its limiting conditions (Ajzen, 2011). The TPB does not specify where perceived behavioural control originated. Furthermore, the TPB is more suitable in developed countries with clearly formulated behavioural patterns than in less developed countries (Kalafatis *et al.*, 1999). To overcome its limitations, the common practice is that authors in green consumption research have extended the TPB by adding more variables into the model (Zhao *et al.*, 2014). Some examples are environmental concern (Zhao *et al.*, 2014), environmental knowledge (Yadav and Pathak, 2016), environmental ethics and beliefs and environmental consciousness (Chen and Hung, 2016). On the one hand, their findings are consistent in that the new variables increase the predictive power of the TPB. On the other hand, most of these studies limit their scope of research on internal psychological factors, except for few examples such as Zhao *et al.* (2014) who also considered external availability of green products. Thus, the common limitations of both the TRA and the TPB are the lack of external contextual social factors in examination. The next model, Value-Belief-Norm, which has been adopted in some studies listed in Table 2-1, is reviewed in Section 2.5.2.

### **2.5.2 The Value-Belief-Norm (VBN) Model**

The Value-Belief-Norm (VBN) model has been applied in research on GPIB. The VBN was introduced by Stern (2000) and based on Schwartz's (1973) moral norm activation theory, the theory of personal values and Dunlap and van Liere's (1978) New Environmental Paradigm (NEP). The NEP is widely used as a benchmark for pro-environmental attitudes, which are believed to lead to pro-environmental beliefs. Based on this assumption, Stern *et al.* (1999) stated that pro-environmental behaviour is the outcome of personal pro-environmental norms activated by pro-environmental beliefs. These beliefs are based on general beliefs about the environment and on relatively stable value orientations of a person (Steg, Dreijerink and Abrahamse, 2005). The VBN model states that consumers who hold strong altruistic and biospheric values likely hold strong beliefs of the NEP worldview (Phipps *et al.*, 2013). Steg, Dreijerink and Abrahamse (2005) reported that a biospheric value orientation has a more powerful predictive value than altruistic values for pro-environmental behaviour. This finding leads to a proposition that a person can have different value orientations that may all impact on behaviour, depending on the prominence of particular beliefs in particular contexts (Steg, Dreijerink and Abrahamse, 2005). However, the NEP was designed to measure the worldview paradigm that exists in the social domain, rather than

attitudes that focus on the personal domain. Hence, the NEP scale may not capture personal attitudes towards the environment (Brennan *et al.*, 2014b). Figure 2-3 below is a visual presentation of the VBN model:



**Figure 2-3: The VBN model (reproduced from Stern, 2000)**

The role of personal norms in the VBN model is particularly important to understand GPIB. Although several studies have identified relationships between values and the purchase of environmentally friendly products, many authors agreed that such values influence green purchase behaviour indirectly via the effects of personal norms (Van der Werff, Steg and Keizer, 2013; Steg *et al.*, 2014). When there is a mediating role of personal norms, the relationship between values and behaviour is stronger (Poortinga *et al.*, 2004). As stated by Cialdini, Kallgren and Reno (1991), a personal norm can be either descriptive in terms of what is normal in a given situation, or representing a social norm that reflects the rules of a membership group or an inspirational group. Both types of norms can exist at any time and the degree to which each is applied by individuals depends on the social surrounding, the importance of the decision, and the circumstances relating to the involved decision (Cialdini, Kallgren and Reno, 1991). The VBN states that consumers develop personal norms based on their beliefs about who is responsible for given consequences of pro-environmental behaviours. This norm can involve a personal sense of obligation to take pro-environmental actions (Stern, 2000) or a belief that other people need to modify their behaviours to be more environmentally friendly. To some degree, the role of personal norms shows the importance of social influences on GPIB.

Even though the VBN aimed to predict actual behaviour, several research papers have extended the VBN to explore behavioural intention, including Choi, Jang and Kandampully (2015) and Han (2015). For instance, Choi, Jang and Kandampully (2015) added two constructs, subjective norms and green trust, into the VBN to investigate green purchase intention. In their study, only green trust, which is defined as consumers' readiness to depend on a product, based on consumers' beliefs in its environmental performance was empirically supported (Choi, Jang and Kandampully, 2015). In Han (2015)'s study, the TPB and the VBN were combined to examine consumer choice of green hotels with empirical support for attitude, perceived behavioural control and moral obligations of personal norms. In this way, Han (2015) supplemented the TPB with values and personal norms of the VBN.

The VBN model was reported to consistently explain a wide range of GCB, including private sphere behaviours such as green lodging, organic food and green product purchases (Phipps *et al.*, 2013). Nevertheless, explained variance of the VBN model has weakly ranged from 17 to 32 per cent (Bamberg and Möser, 2007). This implies that values and personal norms in the VBN do not necessarily predict behaviour better than the variables used in the TRA and the TPB. This can be explained by the lack of situational factors that may influence the relationship between personal norms and behaviour. This could also be because of the subjective nature of personal norms perceived by individual consumers. Thus, it is expected to consider a holistic approach which may improve the predictability of the VBN in GPIB research. As noted by Stern (2000), a more accurate understanding of behaviour requires a multi-dimensional view incorporating internal and external elements. In light of this argument, this PhD research takes a holistic approach and a multi-dimensional view to build an integrative model to explore green purchase intention.

## **2.6 SUMMARY OF THE LIMITATIONS OF COMMONLY USED BEHAVIOURAL MODELS IN RECENT GPIB STUDIES**

While recent studies on GPIB employing numerous behavioural theories provide a sound foundation to understand GPIB, a full understanding of green consumption behaviour remains a challenge. The percentage of explained variance of green purchase intention and behaviour in reviewed studies varies within a 20 to 74 per cent range (e.g., Albayrak, Aksoy and Caber, 2013; Han Ha and Janda, 2012; Yadav and Pathak, 2016; Zhou *et al.*, 2014). The study that produced a high percentage of explained variance of green purchase intention at 74 per cent is Prakash and Pathak (2017). However, this study only examined general green product behaviour. Most of the reviewed studies produced 20-48 per cent of explained variance of GPIB (e.g., Albayrak, Aksoy

and Caber, 2013; Arli *et al.*, 2018; Chen and Hung, 2016; Ha and Janda, 2012; Hsu, Chang and Yansritakul, 2017; Jaiswal and Kant, 2018; Nguyen, Lobo and Greenland, 2017; Nuttavuthisit and Thøgersen, 2017; Paul, Modi and Patel, 2016; Verma and Chandra, 2018; Wei *et al.*, 2017; Yadav and Pathak, 2016; Yadav and Pathak, 2017; Zhao *et al.*, 2014). This questions the ways academic researchers frame and conduct GPIB by constantly adding more factors to extend the application of the TRA, the TPB and the VBN. In addition, there is a necessity to examine GPIB in relation to specific product categories to improve knowledge of the phenomenon. That is to say, there is still room to examine GPIB, especially relating to a specific product category as intended in this research.

In sum, the key findings of Section 2.5 are the strengths and the limitations of the three behavioural models commonly used in GPIB studies from 2010 onwards (see Table 2-1). Despite the wide use of the TRA, the TPB and the VBN in GPIB studies, these models were found to lack a holistic approach to examine GPIB. To elaborate, these models appreciate the importance of psychological/cognitive factors which are subjective and personal rather than acknowledge the potential influences of external contextual and social factors. Though there have been several studies which try to overcome this weakness by extending the TRA, the TPB and the VBN, there could be a more comprehensive way to examine green purchase intention. There is a range of internal and external factors which can limit or enhance the consumer's capacity to behave in an environmentally friendly manner (Pedersen and Neergaard, 2006). Moreover, one of the ways to improve research on sustainability should be based on a holistic approach (McDonald *et al.*, 2016). This research thus takes a holistic approach to build an integrative model to explore green purchase intention in the context of an emerging market characterised by increasing consumption of convenience products in Vietnam. This integrative approach helps identify factors which could potentially affect green purchase intention in a specific everyday product context, thereby contributing new knowledge of GPIB relating to a specific food product, particularly in relation to eco-friendly packaging.

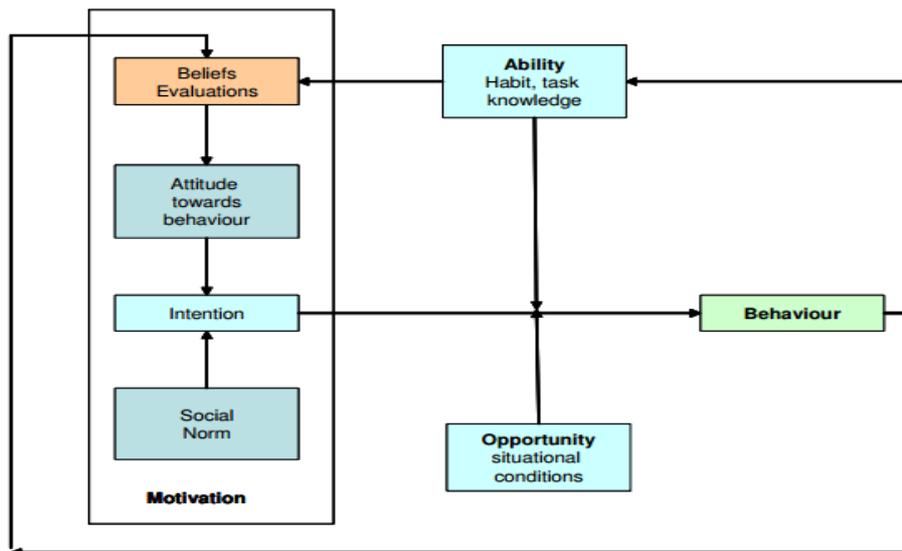
## **2.7 THE DEVELOPMENT OF AN INTEGRATIVE CONCEPTUAL MODEL OF GREEN PURCHASE INTENTION**

This section discusses the development of the preliminary conceptual model for this research. Given the main research question, "How internal psychological and external contextual social factors influence green purchase intention for a packaged food product with regard to eco-friendly packaging", a holistic approach would be more relevant in building an integrative model for

examining GPIB. This research argues that consumer behaviour is a result of the combination of internal factors (inside each individual) which motivate their behaviours and external contextual factors which could make it easy or difficult for the desired behaviours to happen. Furthermore, as individuals live in a society, social interactions can be a good source of learning about how to behave. Individuals may learn by modelling others' behaviours and individuals may be affected by others' judgements of their own behaviours. Therefore, to explore green purchase intention and behaviour, it would be necessary to capture not only internal but also external contextual and social influences which could produce potential effects on consumer behaviour. This research thus develops an integrative model incorporating both internal and external factors for exploring green purchase intention. The following sections review the Motivation-Ability-Opportunity model (Section 2.7.1) and the Focus theory of Normative Conduct (Section 2.7.2) to serve as theoretical foundations to formulate the preliminary conceptual research model of this research.

### **2.7.1 The Motivation-Ability-Opportunity (MAO) Model**

An attempt to build a comprehensive model of consumer behaviour is the Motivation-Ability-Opportunity (MAO) model which is also called the Motivation-Opportunity-Ability (MOA) model. In this research, the MAO is used for consistency throughout the discussion of the thesis. The MAO was developed by Ölander and Thøgersen (1995) by combining both internal motivational variables with contextual variables of ability and opportunity (Jackson, 2005; Phipps *et al.*, 2013). The MAO is more comprehensive in comparison to the TRA and the TPB because it acknowledges external factors which could facilitate or hinder consumer behaviour. To some extent, the MAO is comparable to the integrative model of behavioural change developed by Fishbein and Yzer (2003). Both models acknowledge an integrative approach to include a range of factors (internal psychological and external contextual social) that may influence the behaviour in consideration. The difference is that Fishbein and Yzer (2003)'s model was developed for health-related behavioural change whereas the MAO was developed more specifically for consumption behaviour. The MAO is therefore reviewed for the purpose of this research, which is focused on green purchase intention. Figure 2.4 below is a visual representation of the MAO model.



**Figure 2-4: The MAO model (reproduced from Ölander and Thøgersen, 1995)**

The MAO integrates three main components - motivation, ability and opportunity - in one model which helps explain consumer behaviour. The first construct in the MAO model is motivation, which can be recognised as a simplified version of the TRA. Ölander and Thøgersen (1995) were quite open as to which alternative ways to conceptualise the model's motivational component, which prompts researchers to identify factors to include in motivation. In green consumption behaviour research contexts, several psychological factors have been identified as motivational drivers to green purchase behaviours. Some examples of these motivational factors are environmental concern (Albayrak, Aksoy and Caber, 2013; Newton *et al.*, 2015; Prakash and Pathak, 2017; Yadav and Pathak, 2016; Zabkar and Hosta, 2013) and environmental self-concept or self-identity (Dagher and Itani, 2014; Khare, 2015; Niinimäki, 2010). This research takes the motivation direction further by including relevant variables pre-determined from a literature review, and validated by consumer insights collected in an emerging market context (see Chapter 3 and Chapter 5).

The second construct in the MAO model is ability. This construct incorporates both a habit and task knowledge element (Ölander and Thøgersen, 1995). The MAO model posits that individual consumers have different ability levels and may face resource constraints in terms of money or knowledge to make green purchases (Phipps *et al.*, 2013). In several studies on GCB, variables relating to ability were measured including perceived consumer effectiveness (Albayrak, Aksoy and Caber, 2013), green product experience (Kumar and Ghodeswar, 2015) and environmental knowledge (Yadav and Pathak, 2016). Their findings are consistent in that these ability-related variables are influential on GCB. In light of these findings, this research argues that consumer

preferences for green products can be considered as consumer choices under certain constraints specific to each individual. Trying to be involved in GCB involves consumers making green product choices, which would be impossible without relevant knowledge. In the knowledge structures of green consumers, consumer product choices on a daily basis is highly contextual, specific to the product they consider buying (Wagner, 2003). For packaged products, lack of information about environmental impacts of products or packaging can also hinder the practice of GCB (Borin, Cerf and Krishnan, 2011). Because the studied product is a packaged food product, this research takes the stance of considering contextual knowledge related to eco-friendly packaging in investigations.

The third construct of the MAO model relates to opportunity. This construct includes constraints in consumer decisions to behave environmentally, such as availability of appropriate infrastructure, facilities and green product alternatives in the market (Phipps *et al.*, 2013). Ölander and Thøgersen (1995, p.365) acknowledged that “individuals may perceive the same conditions differently and hence (subjectively) see different opportunities”. Moreover, the MAO model states that time and effort needed for GCB, which means changing environmental conditions, may be more important than pricing (Thøgersen, 2005). In the GCB literature, several researchers explored the impact of opportunity factors. One example could be Young *et al.* (2010) who investigated the green consumer purchasing process related to technology products in the United Kingdom. The key finding was that lack of time, among other factors, could be considered one of the main barriers for green consumer behaviour (Young *et al.*, 2010). Furthermore, a low opportunity, such as low availability of green product alternatives, can make it difficult to act on a purchase intention (De Koning *et al.*, 2016). In this sense, the acknowledgement of external contextual factors relating to opportunity in the MAO model adds more knowledge to facilitate the understanding of green purchase intention. It is with the examination of opportunity that the MAO model can help address the deficiencies of the widely used models in recent studies of green purchase intention such as the TRA, the TPB and the VBN. This research, therefore, determines to include contextual factors relating to opportunity which could impact on green purchase intention.

In summary, the MAO model demonstrates how an integrative model of consumer behaviour has been developed to examine GCB. It further develops on previous work such as the TRA to incorporate other external factors that are important to understand GCB (Phipps *et al.*, 2013). The distinctive structural characteristic of the MAO is the integration of motivation, ability and contextual opportunity factors into one comprehensive model of GCB. This is the direction this

research is following to incorporate internal and external factors into one integrative model to examine green purchase intention.

Though there are contributions of the MAO in terms of building a more comprehensive behavioural model, there has not been much GPIB research in emerging markets which are based on the MAO. A recent rare example relating to Vietnam-based studies is De Koning *et al.* (2016)'s which adopted the MOA or the MAO to examine general sustainable behaviour and not specifically GPIB. This research aims to contribute to an emerging stream of using a holistic approach in the direction of the MAO to investigate green purchase intention in an emerging market context. What can be said about the MAO model is that it mainly looks at the individual perspectives of the behaviour under investigation. These perspectives include both internal motivational factors and external contextual factors. Furthermore, Ölander and Thøgersen (1995) were open as to which alternative ways to conceptualise the motivational component. In line with this, the research identifies factors related to green consumer motivation in the literature review (see Chapter 3). Another perspective which could be added into the MAO to build an integrative model of green purchase intention is from social perspectives which consider the impacts of others on individual behaviours. This perspective is discussed in the next section (2.7.2).

### **2.7.2 Social Influences**

With the aim of looking at green purchase intention not only from individual perspectives but also from social perspectives, this section reviews social norms theory for development of the conceptual research model. This section is not to conduct a review of social norms studies, as several authors such as Biel and Thøgersen (2007), Chung and Rimal (2016) and Lewis and Neighbors (2006) have already undertaken this task. Rather, the focus of this section is to identify relevant social norms which could be incorporated into an integrative model to predict green purchase intention.

In social contexts, human behaviour is often guided by social norms. One important reason is that social norms are informal laws that govern and direct individual behaviour (Yakovovitch and Grinstein, 2016). The basic proposition of the influences of social norms originates from the long-established notion that human behaviour depends on the norms relevant to an individual's social groups (Sheriff, 1936). Moreover, human societies are based mainly on social norms and socially accepted behaviours (Fehr and Fischbacher, 2004). In case of GCB, social norms can be used to create normative conditions in which consumers can express their GCB attitudes and values

(Varadarajan, 2014). The use of social norms has been highlighted by Biel and Thøgersen (2007), Cialdini (2007) and Steg and Vlek (2009). This research takes the stance of the focus theory of normative conduct by Cialdini, Reno and Kallgren (1990) which focuses on the influence of social norms on behaviour. The main reason is that this theory makes a clear distinction between descriptive norms and injunctive norms. Furthermore, Cialdini, Reno and Kallgren (1990)'s theory has important theoretical implications on consumer behaviour since it posits that "people are continually influenced in their behaviour by social norms which prescribe or proscribe certain behavioural options" (Jackson, 2005, p.ix).

In relation to social norms, descriptive norms and injunctive norms are different in their impacts on human behaviours. Cialdini, Reno and Kallgren (1990, p.1015) "discriminate between the *is* (descriptive) and the *ought* (injunctive) meaning of social norms because each refers to a separate source of human motivation". Moreover, Cialdini, Kallgren and Reno (1991) pointed out that descriptive norms describe what is normally accepted and performed in social situations while injunctive norms describe what others think a person should do. In other words, descriptive norms refer to perceptions of others' behaviours, based on observations of how people act in a given situation (Cialdini, Kallgren and Reno, 1990, 1991). Injunctive norms, on the other hand, are defined as perceived approval of a certain behaviour, which help a person to determine what is accepted or rejected by a certain culture (Cialdini, Kallgren and Reno, 1991). Fornara *et al.* (2011) also stated that injunctive and descriptive norms are distinctive because they influence individual behaviour in different ways. The degree to which injunctive and descriptive norms affect behaviour is dependent on the prominence of either types of norms in particular situations (Fornara *et al.*, 2011). Sometimes group approval is used to encourage people to engage in the usual behaviours (injunctive norms). Other times people engage in a behaviour because they believe that most people do this (descriptive norms) whether that is objectively true or not. This social norms theory was validated in Cialdini, Reno and Kallgren (1990)'s experimental studies about littering in public places with the finding that social norms have a considerable influence on behaviours. To make a better prediction on behaviour, first, researchers should specify whether descriptive or injunctive norms to be operating, and second, researchers must consider the social situations in which a person would refer to a specified norm (Cialdini, Reno and Kallgren, 1990). This viewpoint offers useful implications for this research when it comes to considering which social norms consumers would refer to in daily buying situations.

It can be said that descriptive norms may be used to explain many behaviours that occur in social contexts because individuals can learn by modelling others. The assumption of "if everyone is

doing it, it must be a sensible thing to do” (Cialdini, Reno and Kallgren, 1990, p. 1015) shows that descriptive norms have more advantages in information processing than injunctive norms do. In the consumer behaviour literature, it was reported that descriptive norms are more influential on behaviour than injunctive norms (Rivis and Sheeran, 2003; Stok *et al.*, 2014). This can be explained by the fact that when observing others’ behaviour, people gain information about proper social behaviour and use this information to adjust their own behaviour (Stok *et al.*, 2014). For instance, in Thøgersen (2008)’s study on a wide range of pro-environmental behaviours, it was reported that the effects of descriptive norms were stronger. Stok *et al.* (2014) also found that descriptive norms are more positively influential than injunctive norms in health promoting behaviour. Similarly, Goldstein *et al.* (2008) reported positive effects of descriptive norms in motivating environmental conservation in hotels. Likewise, Richetin *et al.* (2016) confirmed that descriptive norms could effectively influence water reduction actions. These earlier research findings indicate that descriptive norms deserve more attention in research to see if it would be an influencing factor on green consumption behaviour.

To compare with earlier models such as the TRA, the TPB and the VBN which mainly focus on personal norms and values, the adoption of descriptive norms adds social perspectives into the examination of GPIB. The addition of descriptive norms can help address the lack of examination of social factors in the TRA, the TPB and the VBN. Descriptive norms are thus specified for focus in this research as they have been reported to predict pro-environmental behaviours, for instance, reduced littering, increased recycling and energy conservation, just to name a few (Bissing-Olson, Fielding and Iyer, 2016). Pro-environmental behaviour refers to “behaviour that harms the environment as little as possible or even benefits the environment” (Steg and Vlek, 2009, p.309). Hence, green purchase behaviour can be classified as an example of pro-environmental behaviour. As people model others’ behaviour in social contexts (Cialdini, Reno and Kallgren, 1990), this research assumes that consumers may also model others’ behaviour in buying contexts, particularly relating to green buying behaviour. To the knowledge of the PhD researcher, no studies on GPIB have investigated the influences of descriptive norms simultaneously with other psychological variables on green purchase intention for a food product concerning eco-packaging. This research, therefore, brings forward the idea of including descriptive norms in an integrative model to predict green purchase intention with regard to instant noodles in eco-friendly packaging.

### 2.7.3 The Development of an Integrative Conceptual Model of Green Purchase Intention

This section summarises all the main concepts which are included in the development of the conceptual research model. As discussed in Section 2.3, researchers who consider green purchase behaviour to be a pro-social behaviour commonly use the VBN theory, such as Choi, Jang and Kandampully (2015), Han (2015), Nguyen, Lobo and Greenland (2017) (see Table 2-1). Others, who view it as self-interested behaviour, often use rational decision models like the TRA or the TPB such as Arli *et al.* (2018), Khare (2015) and Prakash and Pathak (2017) (see Table 2-1). This research adopts a holistic view that green purchase behaviour is a pro-social behaviour which could be affected by internal and external factors. To examine green purchase intention, an integrative model which combines internal and external factors is built for the purpose of this research. The preliminary conceptual model of this research is formulated on the direction of the two guiding paradigms - the Motivation-Ability-Opportunity MAO model (Ölander and Thøgersen, 1995) and the Focus theory of Normative Conduct (Cialdini, Reno and Kallgren, 1990). What makes this research distinctive is that it does not add additional factors to the MAO model as several other researchers have done with the extended TRA, TPB and VBN. Instead, this research is based on the MAO direction to identify relevant factors relating to motivation, ability and opportunity in order to develop the conceptual research model. In this way, the variables identified from Table 2-1 can be referred to while making a list of variables to include in the proposed research model, following the MAO direction.

In this research, apart from motivation factors, opportunity is counted as the condition that enables consumers to buy green products more responsibly, while considering packaging more carefully. Ability reflects a consumer's capacity to perform green purchase behaviour. The conceptual research model assumes that consumer purchase intention for packaged instant noodles concerning eco-friendly packaging involves individuals' motivation, the ability individuals have and the external opportunity perceived to be available to individuals. This research also takes into account social descriptive norms to predict green purchase intention related to instant noodles in eco-friendly packaging. As a result, this research develops an integrative model which allows the prediction of green purchase intention from both internal psychological and external contextual social perspectives.

One limitation of this research is that it does not address actual green purchase behaviour. Instead, green purchase intention is the main focus. One main reason for this choice is that individuals may not provide accurate reports of their behaviour because of social desirability or other response

biases (Gifford, Kormos and McIntyre, 2011). Overall, this research argues that an integrative model which incorporates internal psychological and external contextual social perspectives would be useful to predict green purchase intention for eco-friendly packaged instant noodles in the context of Vietnam. This integrative approach will shed light on whether and how factors (internal and external) influence green purchase intention and what factors have significant influences. This knowledge will help the government and business sectors to gain a fuller understanding of green purchase intention and behaviour relating to eco-friendly packaging.

## **2.8 CHAPTER SUMMARY**

This chapter pointed out the distinction between sustainable consumption and green consumption and reviewed previous studies related to green consumption. A summary of studies on green purchase intention and behaviour (GPIB) from 2010 onwards was provided to review the behavioural models commonly used to examine GPIB and to identify the limitations of these behavioural models. Theoretical approaches to explain green purchase behaviour from internal psychological and external social perspectives were then explored for the possibility of integrating theories for the purpose of this research. The direction, based on the MAO approach and social norms theory, for building the integrative conceptual research model was then introduced. The next chapter (Chapter 3) presents a literature review relating to the main factors to be included in the conceptual research model of green purchase intention for preliminary hypothesis formulation.

## **CHAPTER 3 – THE CONCEPTUAL RESEARCH MODEL**

### **3.1 INTRODUCTION**

This research adopts an open view based on the MAO approach to develop an integrative model of green purchase intention. The literature review in this chapter was drawn from studies on antecedents of green purchase intention.

This chapter is organised as follows. First, Section 3.2 deals with potential antecedents relating to green purchase intention, including environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived financial constraints, perceived availability of alternatives, perceived time pressure and perceived descriptive norms. Second, Section 3.3 discusses green purchase intention in association with willingness to pay and shopping effort. The potential relationship between perceived time pressure and shopping effort is also explored. Third, in Section 3.4, the integrative conceptual model developed for this research is presented and preliminary research hypotheses are outlined. Finally, Section 3.5 provides the chapter summary.

### **3.2 ANTECEDENTS OF GREEN PURCHASE INTENTION**

This section presents an overview of the direction used to identify antecedents of green purchase intention. These antecedents are pre-determined based on the MAO approach. Accordingly, the section lists out and justifies the selection of antecedent factors relating to motivation, ability and opportunity.

First, antecedents relating to motivation are identified. In a broad context of GCB, an understanding of consumer motivation to engage in GCB is essential (Pagiaslis and Krontalis, 2014). Motivation is referred to as a factor accounting for direction, vigour and persistence of behaviour (Moisander, 2007). Consumer involvement is defined as “the level of perceived personal importance, interest or relevance evoked by a stimulus or stimuli, which are linked by the consumer to enduring or situation-specific goals” (Verbeke and Vackier, 2003, p.160). There is a range of consumer stimuli, such as brands, products, product categories, advertisements or purchase decisions (Juhl and Poulsen, 2000; Verbeke and Vackier, 2003). In the context of this research, consumer stimuli are

eco-friendly packaged instant noodles, and thus motivation is defined as a customer's desire or readiness to engage in buying eco-friendly packaged instant noodles.

This research adopts a view of involvement as a motivational construct. The concept of involvement is defined as a state of motivation of a consumer (Rodríguez-Santos, González-Fernández and Cervantes-Blanco, 2013). In this research, the concept of involvement is applied with regard to motivation to buy eco-friendly packaged instant noodles, which are considered as stimuli arousing consumers' motivation. This research identifies environmental self-identity, environmental involvement and product involvement as dimensions of consumers' motivation. It thus proposes that involvement (in terms of the environment and the product) and environmental self-identity can contribute to green purchase intention for eco-friendly packaged instant noodles (see Section 3.2.1, 3.2.2 and 3.2.3)

Second, with respect to ability, in this research, it is defined as a factor that can help consumers to realise a goal. Ability may be influenced by factors including knowledge and money (MacInnis, Moorman and Jaworski, 1991). Perceived ability is identified as income or consumers' financial resources (Aertsens *et al.*, 2009). Moreover, knowledge is another component of consumers' ability. For example, environmental knowledge was used to examine consumer ability by Ellen (1994) on the premise that not acting environmentally could result from insufficient knowledge to make informed decisions. Accordingly, environmental knowledge and consumers' budget are included in antecedent variables to be reviewed thoroughly for research hypotheses (see Section 3.2.4, 3.2.5).

Third, in relation to opportunity presented to consumers, some external factors can facilitate or prevent consumers to engage in GCB. Consumers may be concerned for the environment; however, due to external constraints, whether or not they will engage in GCB is another issue. For instance, available product alternatives are among the factors which affect consumers' GCB (Csutora, 2012). In addition, time pressure may limit or facilitate purchase behaviour (Ölander and Thøgersen, 1995). Hence, availability of alternatives and time pressure are included in the research scope to examine green purchase intention (see Section 3.2.6, 3.2.7).

Fourth, this research also incorporates descriptive norms to explore its predictability for green purchase intention (see Section 2.6, Chapter 2). One important argument used for the inclusion of descriptive norms is that consumers shape their behaviours as a result of observing others' behaviours because behaviours often happen in social contexts (Biel and Thøgersen, 2007). Furthermore, consumers do not act as independent decision-making units (Salazar, Oerlemans and

Stroe-Biezen, 2013). Rather, their behaviour is shaped within a frame of reference produced by membership groups (Salazar, Oerlemans and Stroe-Biezen, 2013). As a result, observing what other members do may affect an individual's actions, including consumption activities. Hence, descriptive norms relating to modelling others' behaviours are included in the review (see Section 3.2.8).

On a side note, as mentioned in Chapter 1, consumers' willingness to pay and expend shopping effort for green products has not been fully investigated in association with green purchase intention in the literature. There often exists a gap between intention and actual behaviour. Hence, this research wants to find out whether a consumer with an intention to buy eco-friendly packaged instant noodles is willing to pay and spend shopping effort. In other words, this research includes investigations into whether and how green purchase intention may influence willingness to pay and shopping effort. This discussion is provided in Section 3.3. The subsequent sections (3.2.1 to 3.2.8) present potential antecedent factors related to green purchase intention in the direction of motivation, ability and opportunity, with the addition of descriptive social norms, to build the preliminary conceptual framework for this research.

### **3.2.1 Environmental Involvement**

The section discusses environmental involvement and argues why this factor is incorporated into the current research. Customer involvement is considered to be a key construct influencing purchase decisions (Dagger and David, 2012). Many studies define environmentally involved consumers as those who are highly concerned about the environment and highly involved with environmental actions (D'Souza and Taghian, 2005; Matthes, Wonneberger and Schmuck, 2014; Mohr, Eroglu and Ellen, 1998). Environmental concern expresses a consumer's affective evaluation of environmental issues (Lee, 2008) and is often conceptualised as a direct antecedent leading to green purchase intention (Hartmann and Apaolaza-Ibáñez, 2012; Hedlund, 2011; Koenig-Lewis *et al.*, 2014; Paço, Alves and Shiel, 2013; Paladino and Ng, 2013, Prakash and Pathak, 2017). This means environmental concern captures the extent to which individuals are affectively engaged in GCB. In comparison with environmental concern, environmental involvement not only reflects individuals' environment-related emotions but also their beliefs about environmental protection (Schultz *et al.*, 2004). Hence, environmental involvement shows an individual's level of commitment to environmental issues (Schuhwerk and Lefkoff-Hagius, 1995). That is to say, the concept of environmental involvement includes an awareness of environmental problems combined with the perceived necessity of protecting the environment (Matthes, Wonneberger and Schmuck,

2014). Environmentally involved people not only believe that their actions have an impact on the environment but also are willing to engage in environmental activities like recycling and/or buying green products (Chen *et al.*, 2015; Lee, 2010). Hence, environmental involvement is both affective and behavioural in the sense that environmentally involved individuals feel concerned about the environment and behave accordingly. For the purpose of this research, environmental involvement is used to capture the state of motivation of an individual derived from the concern for the environment and the level of commitment to purchase environmentally.

This research assumes that environmentally involved consumers are concerned about the consequences their purchase decisions could cause to the environment. It argues that environmental involvement is related to consumer motivation to collect and process relevant information about environmental issues and environmental products, thereby, increasing environmental knowledge related to the product in consideration. It also notes that involvement may vary across different product categories. In practice, low involvement products are often purchased without careful examination of product information (Silayoi and Speece, 2007) and consequently may involve less searching and information processing. However, extant research proves that involvement level reflects the extent of personal relevance of the decision to a person in terms of values, goals and self-concept (Hughes, Hutchins and Karathanassi, 1998). A consumer with environmental involvement thus can consider their consumption activities to reflect their personal relevance related to environmental values and beliefs. Hence, this research assumes that if consumers are highly involved with the environment, this commitment may display personal relevance related to environmental values and beliefs, which could influence how they make purchase decisions, including low involvement purchase decisions.

To make a sound purchase decision, consumers need relevant knowledge. According to Vakratsas and Ambler (1999) and Silayoi and Speece (2004), highly involved consumers evaluate information more carefully, resulting in their increased knowledge of relevant subjects. In this research, to environmentally involved consumers, this knowledge is assumed to be related to the environment, i.e., environmental knowledge. Environmental knowledge refers to a person's ability to be aware, understand and estimate the impact of his or her actions, including purchasing actions, on the environment (Haron, Paim and Yahaya, 2005). In this research, environmental knowledge is related to eco-friendly packaging. That is to say, environmentally involved consumers are more likely to be motivated to gain knowledge of what types of packaging are eco-friendly or less environmentally harmful. Furthermore, consumers with higher environmental involvement may follow a central route of information processing in relation to environmentally friendly characteristics of product

alternatives (Wei *et al.*, 2017), and in this research, the environmentally friendly characteristic is eco-packaging. Therefore, environmental involvement may provide motivation to enhance environment-relevant knowledge and to form green purchase intention. In line with this argument, this research adopts the premise of Newton *et al.* (2015) that promotes the role of consumer environmental knowledge in GCB. Since there are no reported findings in GCB studies on emerging markets about the relationship between environmental involvement and environmental knowledge, this research aims to find out such effects (if any). The prediction is that environmental involvement could impact on environmental knowledge related to eco-friendly packaging. Hence, the first hypothesis about the relationship between environmental involvement and environmental knowledge is posed as follows:

*H1: Environmental involvement is positively related to environmental knowledge concerning eco-friendly packaging.*

In the GCB literature, several studies confirmed the positive impact of environmental involvement on green behaviours. For example, environmental involvement is reported to positively affect green purchase intention through environmental attitude (Wei *et al.*, 2017). Consumers who are more involved with the environment are more motivated to change buying behaviours (Lin and Huang, 2012). Pagiaslis and Krontalis (2014) found that environmental involvement directly impacts on environmental purchase intention. Similarly, Khare (2015) stated that consumers' concern about the environmental influences their willingness to buy green products. More specifically, Prakash and Pathak (2017) also reported the significance of environmental involvement on green purchase intention towards eco-friendly packaged products. Hence, this research predicts that environmental involvement could positively influence green purchase intention for instant noodles in eco-friendly packaging in the second hypothesis:

*H2: Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.2.2 Environmental Self-identity**

This section reviews relevant studies about environmental self-identity to justify why this factor is included in this research. Self-identity is cited as a key driver of consumer behaviour (Johe and Bhullar, 2016). Consumers often express their self-identities through their consumption activities (Nguyen, Özçagla-Toulouse and Kjeldgaard, 2017). The role of self-identity on consumer lifestyles

is demonstrated to affect ecological or environmental behaviour (Adnan, Ahmad and Khan, 2017). In terms of environmental self-identity, it refers to the degree to which an individual considers himself or herself as someone who behaves in an environmentally friendly manner (Van der Werff, Steg and Keizer, 2013). In this research, environmental self-identity is defined to be an individual's self-image as a consumer who buys eco-friendly products, including products having eco-friendly packaging.

Environmental self-identity can motivate people to act in the interest of the environment. Kashima, Paladino and Margetts (2013) stated that environmental self-identity has emerged as a motivator of GCB. That is to say, an individual who expresses environmental self-identity will be more likely to perceive himself or herself as an eco-friendly consumer. As a result of environmental self-identity, that person has a stronger inclination to actually act in an eco-friendly way. More consumers were reported to claim their self-identities as environmentally conscious consumers (Hustvedt and Dickson, 2009). Moreover, consumers who have views of themselves as environmentally responsible tend to show environmental attitudes and intentions (Kang, Liu and Kim, 2013). In light of these past research findings, the current research considers environmental self-identity as one potential antecedent of environmental intention, including green purchase intention.

Consumers may express a general environmental self-identity relating to a vast array of environmentally friendly intentions and behaviours. For instance, in GCB literature, environmental self-identity is associated with eco-friendly purchase behaviour, water and energy saving or waste reduction (Nguyen, Lobo and Nguyen, 2017; Whitmarsh and O'Neill, 2010), recycling (Mannetti, Pierro and Livi, 2004) and buying fair trade products (Gatersleben, Murtagh and Abrahamse, 2014). Similar findings are that environmental self-identity also motivates individuals to perform a green behaviour like buying organic products (Johe and Bhullar, 2016) or healthy eating (Stok *et al.*, 2014). When consumers perceive the consumption of eco-friendly products closely relevant to themselves, they have a tendency to form attitudes and intentions towards eco-friendly consumption behaviours (Murtagh, Gatersleben and Uzzell, 2012; Van der Werff, Steg and Keizer, 2013). These findings indicate that environmental self-identity could be useful input for GCB. Based on past research findings, this research assumes that activating environmental self-identity may lead to changes in a range of environmentally friendly intentions and behaviours and buying eco-friendly packaged instant noodles is one example relevant to the Vietnamese consumers.

In GCB, self-identity is important in influencing consumers' green purchase behaviour. The reason is that consumers associate themselves strongly with products' characteristics which reflect their

self-image (Khare, 2015). Van der Werff, Steg and Keizer (2014) found that acting environmentally friendly can make individuals feel good about their self-identities, thus strengthening their commitment to the environment. Nigbur, Lyons and Uzzell (2010) also reported that environmental self-identity is positively associated with environmental intention. Furthermore, environmental self-identity is found to positively be associated with a variety of environmental behaviours, including buying behaviours (Gatersleben, Murtagh and Abrahamse, 2014). Therefore, buying products with environmental characteristics is an environmental behaviour that consumers are engaged in accordance with their environmental self-identities. In this research, the assumption is that the more consumers view themselves as environmentally conscious people, the more they are likely to buy eco-friendly packaged instant noodles. The next research hypothesis is proposed as follows:

*H3: Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.2.3 Product Involvement**

This section looks at prior research on product involvement and argues for the concept to be included in this research's investigations. Jain and Srinivasan (1990, p. 594) defined product involvement as "an unobservable state of motivation, arousal, or interest evoked by a particular stimulus". In other words, consumer involvement reflects the level of perceived personal interest related to stimuli which can be products or product categories (Juhl and Poulsen, 2000; Verbeke and Vackier, 2003). As indicated in Zaichkowsky (1985, p.342), product involvement refers to "the relevance of the product to the needs and values of the consumer". In this research, product involvement is proposed as a motivational force to explain behavioural purchase intention relating to a stimulus, which is a food product. For the purpose of this research, the stimulus is instant noodles in eco-friendly packaging.

Product involvement shows the level of involvement and interest of consumers with eco-friendly packaged instant noodles in this research. Product involvement is found to affect consumer behaviour, such as purchase intention (Hoosopon and Puriwat, 2016). When a consumer increases his or her involvement level, the consumer is more motivated to do more search so as to gain more information. At different involvement levels, a consumer would display different purchase behaviours, such as different attitudes, different levels of information search, different information processing methods and different purchase decision behaviours (Lin and Chen, 2006). By prompting a consumer to search for a product's relevant information to create a picture of the

consequences of purchasing the product for evaluation, the consumer's involvement with a product will eventually affect his or her intention to purchase the product (Richins and Bloch, 1986). This research, therefore, assumes that if a consumer is highly involved with eco-friendly packaged food products, he or she would be more likely to make more eco-friendly packaging purchase decisions.

Kim, Kim and Park (2010) pointed out that consumers' high involvement with a product would enhance their willingness to purchase the product. Previous research has highlighted that highly-involved consumers tend to use more product cues in their purchase decisions and are interested in learning more about the product category compared to low-involved consumers (Hollebeek *et al.*, 2007). Many studies indicated a considerable positive influence of product involvement on behavioural intentions (Lin and Chen, 2006; Paladino and Ng, 2013; Teng and Lu, 2016). For instance, consumers who are more involved with organic food products have a stronger intention to buy organic food products (Teng and Lu, 2016; Thøgersen, Jørgensen and Sandger, 2012, Vermeir and Verbeke, 2006). Few studies have been reported on consumer involvement with eco-friendly packaged products (Prakash and Pathak, 2017). Hence, this research aims to fill in this gap. Accordingly, this research assumes that different consumers may have different levels of involvement with everyday consumer products such as packaged instant noodles. It argues that a high level involvement with instant noodles in eco-friendly packaging may have positive effects on green intention towards eco-friendly packaging in purchase situations. Therefore, the next research hypothesis is formulated as follows:

*H4: Product involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.2.4 Environmental Knowledge**

This section provides a literature review on environmental knowledge with justifications as to why this factor is included in exploring green purchase intention related to eco-friendly packaging. Environmental knowledge is referred to as an individual's ability to understand and evaluate the consequences of his or her actions on the environment (Haron, Paim and Yahaya, 2005; Newton *et al.*, 2015). Some GCB studies offer evidence that one of the major influencing factors on green purchase behaviour is environmental knowledge (Lee, 2010; Mostafa, 2007). This research is in line with a research call by Joshi and Rahman (2015) that more research is to be undertaken in emerging markets to examine the impact of environmental knowledge on green purchase intention.

Research on the relationship between environmental knowledge and consumption behaviour has produced inconsistent findings (see Boulstridge and Carrigan, 2000; Díaz-Sieffer *et al.*, 2015; Muller and Taylor, 1991; Paul and Rana, 2012; Pothitou, Hanna and Chalvatzis, 2016; Samarasinghe and Samarasinghe, 2013; Smith and Paladino, 2010; Suki, 2013; Thøgersen, 2009; Yadav and Pathak, 2016; Zabkar and Hosta; 2013). Several studies show that environmental knowledge is an important predictor of green purchase decisions. For example, Thøgersen (2009) found that environmental knowledge has positive effects on consumer adoption of eco-labelled products. Likewise, Zabkar and Hosta (2013) stated that environmental knowledge have a positive influence on environmentally conscious behaviour while Pothitou, Hanna and Chalvatzis (2016) reported the same positive impact in energy saving behaviour. These findings coincide with Smith and Paladino (2010), Paul and Rana (2012), Suki (2013) and Yadav and Pathak (2016) who confirmed the influence of environmental knowledge on consumers' intentions towards organic products. These studies indicate that consumers with environmental knowledge are able to distinguish between green products and conventional ones, and as a result, they may form favourable intentions to purchase green products. However, some extant studies reported that environmental knowledge is not significantly related to environmentally friendly behaviour (Boulstridge and Carrigan, 2000; Muller and Taylor, 1991). In the context of a developing market, Samarasinghe and Samarasinghe (2013) found that environmental knowledge does not have a significant impact on green purchase intention of Sri Lankan consumers. Furthermore, the relationship between environmental knowledge and environmentally significant behaviour has been disputed as well (Díaz-Sieffer *et al.*, 2015). The inconclusiveness from the abovementioned findings leads to one of the research objectives to further examine the relationship between environmental knowledge and green purchase intention in the context of Vietnam.

To measure the concept of environmental knowledge, it is necessary to make clear the type of knowledge this research is measuring. Several authors have made a distinction between two types of environmental knowledge, which are termed as objective knowledge and subjective knowledge (e.g., Aertsens *et al.*, 2011; Pagiaslis and Krontalis, 2014). This classification of knowledge has been supported by many other researchers (Flynn and Goldsmith, 1999; Goh and Balaji, 2016; Tan 2011). By definition, objective knowledge can be understood as the content and organisation of knowledge of the facts stored in human memory, thereby indicating what a person actually knows about a subject, for instance, a product (Tan, 2011). In contrast, subjective knowledge refers to consumers' perceptions of what and how much they know about a type of product and thus it is subjective by nature depending on individuals (Brucks, 1985; Dodd *et al.*, 2005; Tan, 2011). There are often discrepancies between subjective knowledge and objective knowledge because individuals

may not precisely estimate how much they actually know (Aertsen *et al.*, 2011). One person may have the required knowledge to make decisions; however, he or she may not feel well informed because the right choice is not always clear. Moreover, a person may show higher levels of subjective knowledge when by objective knowledge they are not. Due to this difference, subjective and objective knowledge are distinctive factors which have different impacts on behaviours (Ellen, 1994, Aertsens *et al.*, 2011). Hence, the research adopts the view of differences between objective and subjective knowledge.

To further investigate the two different types of knowledge on consumer behaviour, it would be necessary to use two different measurements. Some authors have applied the two measurement scales of environmental knowledge based on objective and subjective knowledge constructs (e.g., Aertsens *et al.*, 2011; Ellen, 1994). With regard to objective knowledge, prior studies found that it has a positive correlation with green purchase behaviour (Tanner, Kaiser and Kast, 2004; Tanner and Kast, 2003; Tilikidou and Delistavrou, 2006). However, subjective environmental knowledge is reported to be more appropriate in determining green behaviour than objective knowledge (Goh and Balaji, 2016). While consumers may use both objective and subjective knowledge in the consumer decision making process, subjective environmental knowledge is more impactful (Goh and Balaji, 2016). Extant research reported that the influence of subjective knowledge on green behaviour is significantly higher compared to objective knowledge (Ellen, 1994). Furthermore, Aertsen *et al.* (2011) supported that subjective knowledge more strongly motivates green purchase behaviours than objective knowledge. In a multi-country study, Vicente-Molina, Fernández-Sáinz and Izagirre-Olaizola (2013) demonstrated that subjective knowledge was the most impactful knowledge factor related to environmental behaviours across the market contexts of the USA, Spain, Mexico and Brazil. These findings indicate that subjective knowledge has proved to be more positively associated with behaviour than objective knowledge. A recent study by Jaiswal and Kant (2018) in India, however, disconfirmed the relationship between perceived or subjective environmental knowledge and green purchase intention. Thus, prior green consumption literature has reported discrepancies in the findings relating to consumers' subjective environmental knowledge in different market contexts. Hence, this research aims to further explore this factor in the context of Vietnam. As this research investigates green purchase intention related to eco-friendly packaging, the relevant subjective environmental knowledge required would be about eco-friendly packaging. Subjective knowledge of eco-friendly packaging is therefore assumed to have some effects on green purchase intention related to eco-friendly packaging. To apply for this research, the more perceived knowledge of eco-friendly packaging, the higher level of purchase intention for instant noodles in eco-friendly packaging. Hence, this research considers subjective environmental knowledge related

to eco-friendly packaging and its relationship with green purchase intention. The fifth research hypothesis is thus proposed below:

*H5: Subjective environmental knowledge concerning eco-friendly packaging is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

On another note, as discussed in Section 3.2.1, environmental involvement is hypothesised to influence environmental knowledge. This research assumes that environmental involvement is related to consumer motivation to collect and process relevant information about environmental issues and environmentally friendly products, thereby, increasing environmental knowledge about related environmentally friendly products. According to Vakratsas and Ambler (1999) and Silayoi and Speece (2004), highly involved consumers evaluate information more carefully which could lead to their knowledge of relevant subjects. In this research, this type of knowledge is assumed to be subjective knowledge of eco-friendly packaging. Therefore, H1 is now read as follows:

*H1: Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging.*

For efficiency and to avoid repetition, from this section onwards, the term subjective environmental knowledge is used to indicate subjective knowledge of eco-friendly packaging. As hypothesis 1 is formed to reflect the impact of environmental involvement on subjective knowledge related to eco-friendly packaging (see Section 3.2.1), there might also be an indirect effect of environmental involvement on green purchase intention through subjective environmental knowledge. This could be tested later in research result analysis (see Chapter 7).

### **3.2.5 Perceived Financial Constraints**

This section presents arguments which support the inclusion of perceived financial constraints in the preliminary conceptual framework of this research. The MAO model posits that individual consumers may face resource constraints in terms of money or knowledge to practise green behaviours and these constraints cause consumers to make trade-off decisions (Phipps *et al.*, 2013). As indicated by Moser (2015), consumers are willing to integrate environmental actions into their everyday shopping behaviour and place high importance on environmentally friendly attributes of products, for example, when they buy food products (Gadema and Oglethorpe, 2011). Green purchase behaviour, however, does not simply happen. Behaviour also depends on non-

motivational factors such as opportunities or resources, which may facilitate or constrain consumers to display purchase behaviour (Ajzen, 1991). Hence, this research examines relevant resources which would impact green consumption behaviour (GCB).

One of the resources needed to make green purchases is finance. Aertsens *et al.* (2009) identified perceived ability as income – the financial resources of consumers. Some other authors used the term “budget constraints” or “financial pressure” or “perceived financial constraints”, arguing that income constrains grocery budgets (Collins *et al.*, 2015; Hoch *et al.*, 1995). In the context of GCB, some types of environmentally friendly products are organic food, energy saving lamps, solar thermal heating systems, green electricity (Nuttavuthisit and Thøgersen, 2017; Welsch and Kuhling, 2011; Young *et al.*, 2010) and eco-friendly packaged products (Prakash and Pathak, 2017). Several studies have focused on the relationship between consumers’ budgets and purchases of environmentally friendly products, such as organic food consumption. For example, Aertsens *et al.* (2009) indicated a positive impact of income on the readiness to buy organic products. Lockie *et al.* (2002) also reported that more Australians consume organic food when their incomes increase. However, research specifically looking at potential impacts of perceived financial constraints on eco-friendly packaged products is still lacking. This research therefore wants to explore if perceived financial constraints are related to a food product concerning eco-friendly packaging, particularly in the context of Vietnam.

This research assumes that perceived financial constraints have an association with green purchase intention. One way to reason about the effects of consumers’ financial budgets is that the level of confidence of a consumer in his/her ability to purchase products with his/her financial budgets has positive relationships with purchase intention (Baker *et al.*, 2002). Although a consumer may have a favourable attitude towards a particular behaviour, he or she might not have the intention to accomplish the behaviour when perceiving difficulties to do so (Chen, 2007; Kim and Chung, 2011). The intention of a consumer to buy organic food, for example, is weaker because of factors such as price and money (Vermeir and Verbeke, 2006). Furthermore, particularly with reference to frequently purchased goods, consumers who believe they lack the necessary financial resources (i.e., perceived financial constraints) to buy green products are less likely to have strong intentions (Carrington, Neville and Whitwell, 2014). This research takes this position to explore the association (if any) between perceived financial constraints and green purchase intention in frequently purchased goods like instant noodles in eco-friendly packaging.

In this research, the term perceived financial constraints is used and is defined as a consumer's perceived constraints in financial resources that he or she has available for spending on goods and services. When consumers consider green purchases, green products are often perceived as being priced higher than conventional ones (Moser, 2015). As a result, perceived higher price for a green product is a barrier to GCB, given the effects of perceived financial constraints (Gleim *et al.*, 2013; Litvine and Wüstenhagen, 2011; Meise *et al.*, 2014). At this point, this research emphasises that perceived financial constraints refer to perceived limitations in terms of financial resources (i.e., monetary resources that a consumer perceives as available) and not product price because price indicates product value and not perceived financial constraints. In this way, this research assumes that perceived financial constraints can be considered as a barrier that could negatively affect purchase intention for green products. If consumers perceive a high level of financial constraints, they may become more price-sensitive when purchasing green products, considering the perceived premium price associated with green product options. Hence, this research explores if perceived financial constraints affect grocery buying related to frequently purchased items such as a food product in eco-packaging having perceived premium prices. As instant noodles are frequently bought, the frequencies of purchases may cause consumers having high perceived financial constraints more anxiety, if eco-friendly packaged alternatives are perceivably priced higher. Hence, the sixth research hypothesis is formulated:

*H6: Perceived financial constraints are negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.2.6 Perceived Availability of Alternatives**

This section presents arguments based on prior studies about the inclusion of perceived availability of green alternatives in this research. Knowledge on availability of product alternatives is necessary to lead purchase decisions as consumers move through the decision making process (Quester, Pettigrew and Hawkins, 2011). Consumers' perceived availability of green alternatives refers to how easily they think the product can be obtained (Vermeir and Verbeke, 2006, 2008). In practice, the availability of green products in consumers' preferred channels can trigger consumers to expend more effort to search for green alternatives for purchases (Bhate and Lawler, 1997). It could be argued that if green alternatives are perceived hard to locate in the market because of limited availability, it may, to some extent, affect the intention to buy. Hence, this research wants to explore the potential influence of this factor on green purchase intention related to instant noodles in eco-friendly packaging.

Studies examining the impact of perceived availability of alternatives on purchase intention have produced inconsistent results. For example, Gleim *et al.* (2013) stated that perceived product availability is identified by consumers as one of the main barriers to green consumption behaviour. Product information relating to availability of green alternatives would thus be an influential factor in purchase intention (Andrews and Allen, 2016). Low availability of green products is found to negatively affect green purchase behaviour (Andrews, 2016). In line with this, lack of information about green alternatives is reported to cause a gap between consumer environmental concern and actual buying behaviour (Ginsberg and Bloom, 2004). Furthermore, Vermeir and Verbeke (2008) found that perceived availability of alternatives does influence purchase intentions. In other words, if consumers perceive that sustainable products are easily available, they will be more likely to consider buying sustainable alternatives. However, the findings in the recent literature on the impact of perceived availability of green alternatives produced insignificant results. For instance, Zhen and Mansori (2012) reported a weak relationship between availability and purchase intention. The discrepancies in prior research findings about perceived availability and its association with green purchase intention lead to the need to explore this factor further. Moreover, to the knowledge of the PhD researcher, no studies have been reported on the relationship specifically between perceived availability of a food product in eco-friendly packaging and green purchase intention in the GCB literature and this research wants to fill this gap.

This research argues that Vietnamese consumers may be interested in eco-friendly packaged instant noodles; however, their purchase decisions may be made within certain constraints such as perceived availability of product alternatives. In this research, perceived availability of product alternatives is seen as the extent to which consumers can easily locate and obtain an eco-friendly packaged noodle product for consumption. Perceived unavailability of eco-friendly packaged alternatives poses a constraint for a consumer motivated to buy a noodle product in eco-friendly packaging. In other words, low perceived availability of eco-friendly packaged options might be negatively associated with purchase intention. This argument is in line with Gleim *et al.* (2013) and Kim *et al.* (2012) who reported that perceived market situations are significant antecedents of GCB.

In short, this research builds on earlier arguments about perceived constraints in terms of product availability. Specifically, this research is based on prior research findings from Andrews (2016) and Andrews and Allen (2016) that low availability of green products negatively affects green consumer behaviour. Accordingly, this research includes perceived availability of eco-friendly packaged product choices in investigations. It predicts that perceived availability of product choices with eco-

friendly packaging may influence green purchase intention for instant noodles in eco-friendly packaging. That means, the easier the perceived availability is, the stronger purchase intention may become and vice versa, the lower the perceived availability, the lower level of purchase intention. Hence, the seventh research hypothesis is outlined as follows:

*H7: Increased perceived availability of eco-friendly packaged alternatives is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.2.7 Perceived Time Pressure**

This section explores perceived time pressure in relation to opportunities presented to consumers to purchase eco-friendly products. In daily purchase activities, many consumers may face with time pressure because of busy lifestyles. The MAO model (Ölander and Thøgersen, 1995) identifies time pressure as one factor that influences opportunity for consumers to make purchases. Most consumer purchases of fast moving goods such as packaged foods are made in grocery shopping which can happen in supermarkets, convenience stores and grocery shops. Grocery shopping is actually an essential and routine type of consumer purchase behaviour. In this research, grocery shopping is considered as shopping trips when consumers purchase packaged instant noodles. This research stands on the premise that time pressure may cause consumers to do grocery shopping under time constraints.

Time pressure may negatively affect purchase behaviour. In this research, the concept of perceived time pressure reflects the degree to which people perceive that they are busy (Verhoef and Langerak, 2001). Theoretically, time pressure is considered as the perceived cost of time due to scarcity (Godinho, Prada and Garrido, 2016). In practice, “it is only when the available time to complete a task is perceived as insufficient or limited that time pressure begins to manifest itself and induce feelings of stress” (Thomas, Esper and Stank, 2010, p. 288). This subjective definition of time pressure, which is subject to individual appraisal, has important implications on behaviour (Godinho, Prada and Garrido, 2016). In a shopping context, perceived lack of time may serve as a filter affecting how consumers process information (Xu-Priour, Cliquet and Palmer, 2017). First, the exact duration of time available to individual consumers to decide may significantly influence their purchase intentions and decisions. Second, since time pressure is dependent on subjective perceptions, the way in which time pressure is induced may consequently change intention as well as decision-making behaviour of individual consumers. It can be thus predicted that perceived time pressure might, to some degree, impact green purchase intention.

Studies on the effects of time pressure in the GCB literature have been scarcely reported. Extant research treated time pressure as a factor influencing consumers' decision making in a store environment (e.g., Herrington and Capella, 1995; Iyer, 1989; Vermeir and Van Kenhove, 2005). Recent research has reported the effects of time pressure on different shopping behaviours, such as impulse buying (Hu and Qin, 2014), grocery shopping (Collins *et al.*, 2014), online shopping (Godinho, Prada and Garrido, 2016; Xu-Priour, Cliquet and Palmer, 2017) and consumer behaviour in shopping malls (Lloyd *et al.*, 2014). The above-mentioned studies however were not undertaken in the field of GCB. Furthermore, recent GCB literature has not reported any studies on the effects of time pressure related to green purchase intention. In this research, daily food choices are examined and most consumer daily food choices involve limited time resources (Grunert *et al.*, 2010) and imply a certain degree of urgency (Samson and Voyer, 2014). Hence, this research posits that time pressure is likely to affect daily GCB of Vietnamese consumers, such as buying eco-friendly packaged instant noodles.

To summarise, it is predicted that consumers with more perceived time pressure will have to process information fast to have quick decisions within a limited timeframe perceived to be available for their grocery shopping trips. This research assumes that consumers who experience high levels of perceived time pressure will be in a hurry when doing grocery purchase activities. Therefore, in a grocery shopping trip, a consumer's sensitivity to time pressure will influence his/her purchase intention when it comes to buying a food product (instant noodles) in eco-friendly packaging. Hence, the eighth research hypothesis is formulated:

*H8: Perceived time pressure is negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.2.8 Perceived Descriptive Norms**

This section explains the proposed inclusion of perceived descriptive norms in this research, as one research objective is to explore the potential impacts of external social influences on green purchase intention. Based on prior literature, it argues that descriptive norms might be related with green purchase intention.

Descriptive norms can be used to explain many behaviours that occur in social contexts as individuals may learn by modelling others. By definition, descriptive norms reflect a person's

perceptions of others' behaviours, based on his or her observations of how people act in a given situation (Cialdini, Reno and Kallgren, 1990). Descriptive norms motivate behaviour mainly because of their capacity to make salient the apparently more adaptive or appropriate behavioural options in a specific context (Fornara *et al.*, 2011). Several studies have reported the influential effects of descriptive norms on a wide range of behaviours. For instance, Kinzig *et al.* (2013) reported descriptive norm as a prevailing norm of behaviours in social behavioural change strategies relating to pro-environmental behaviours, such as recycling and reducing product usages. Reese, Loew and Steffgen (2014) emphasised that descriptive norms have a strong impact on pro-environmental behaviour. Moreover, descriptive norms affect what consumers purchase (Goldsmith and Clark, 2012) or whether they recycle (Fornara *et al.*, 2011; Nigbur, Lyons and Uzzell, 2010), use public transport in place of private cars (Kormos, Gifford and Brown, 2014), or save energy (Nolan *et al.*, 2008) and conserve water (Richetin *et al.*, 2016). Several other researchers have found the ability to predict pro-environmental behaviours to be significantly increased through the inclusion of descriptive norms (Bissing-Olson, Fielding and Iyer, 2016; Kormos, Gifford and Brown, 2014; Lapinski *et al.*, 2017). In light of these findings, this research adopts descriptive norms as an antecedent to predict Vietnamese consumers' green purchase intention relating to instant noodles in eco-friendly packaging.

The immediate social contexts are important for descriptive norms to produce impacts. In GCB research, Bissing-Olson, Fielding and Iyer (2016) found that the immediate social context in which other people's environmental behaviour can be observed and/or perceived (i.e., descriptive norms) has a major role in forming environmental actions. It accurately centres on the actual behaviours of significant people (Heath and Gifford, 2002), leading to the outcomes that individuals are more likely to believe and follow what significant others are doing or have done (Shi, Fan and Zhao, 2017). Moreover, descriptive norms more likely motivate behaviour in the immediate social context in which people can observe and model others' behaviours (Smith *et al.*, 2012). Thus, it is reasonable to explore if the information about the behaviour of others (i.e., descriptive norms) affects intention and behaviour (Smith *et al.*, 2012). In this research, the assumption is that perception of what most others are doing in the immediate context (i.e., descriptive norms) causes people to behave in a similar manner, even when the behaviours are as morally neutral as choosing a consumer product (Cialdini, Reno and Kallgren, 1990). Therefore, choosing an eco-friendly packaged food product may also be influenced by descriptive norms of what others are doing in the immediate social context.

Within the category of descriptive norms, a further distinction can be made between two sub-types. Descriptive subjective norms focus on the social influence of perceived significant others (e.g., family members, relatives and friends), whereas descriptive local norms centre on the social influence of those who share the same social-physical context (e.g., neighbours and co-workers) (Fornara *et al.*, 2011; Kormos, Gifford and Brown, 2014). This research looks at descriptive norms from both perspectives, subjective and local, to examine whether and how a person's perception of what significant others and those in his/her physical surroundings do will influence his/her intention and behaviour. Therefore, the instrument designed to measure descriptive norms needs to include items about consumers' significant others as well as those in consumers' physical surroundings (see Chapter 6). Accordingly, the ninth research hypothesis is outlined below:

*H9: Perceived descriptive norms are positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.*

### **3.3 MEASURING GREEN PURCHASE INTENTION**

This section describes green purchase intention as the dependent variable to be explored in this research. Purchase intention is defined as a consumer's conscious plan to make an effort to purchase a product (Spears and Singh, 2004). Green purchase intention is conceptualised as the tendency of a consumer to prefer eco-friendly products over conventional ones (Nik, 2009). Alternatively, it is simply defined as the possibility of a consumer's green buying decisions (Chen and Chang, 2012). These definitions share the common ground that considers the willingness and preference of consumers for green purchase decisions. In this research, green purchase intention is defined as the possibility of a consumer to consider buying green products. Specifically, green purchase intention is examined in relation to eco-friendly packaged instant noodles. It is thus specifically defined in this research as the possibility and willingness of a consumer to buy eco-friendly packaged instant noodles.

In the consumer behaviour literature, purchase intention has become an important factor in predicting purchase behaviour. The concept of green purchase intention has also been an important research topic in the GCB literature. Ramayah, Lee and Mohamad (2010) affirmed that green purchase intention is a significant factor leading to actual purchase. Purchase intention has been used as the direct substitute to predict purchase behaviour because of the inevitable difficulty of measuring actual behaviour (Ajzen and Fishbein, 1977; Ajzen, 1985; Moser, 2015). However, researchers have noticed that consumer responses to self-stated intention questions do not always

correlate with actual purchase figures (Hassan, Shiu and Shaw, 2016; Morwitz, 1997, 2001; Sun and Morwitz, 2010). Furthermore, behavioural measures often fall short, as many studies use self-reported behaviours or do not distinguish behaviours from behavioural intentions (Barber, Bishop and Gruen, 2014). Across ethical consumption contexts, including green consumption, researchers have identified the gap between what consumers think, what they intend, and what they actually buy (Carrington, Neville and Whitwell, 2010; Hassan, Shiu and Shaw, 2016). Moreover, intentions may change over time and therefore can cause a weak association with behaviour (Hassan, Shiu and Shaw, 2016). To avoid this disadvantage, a lot of studies have been focused on purchase intention rather than self-reported behaviour. As a result, green purchase intention research has been conducted in several product categories, such as green products (D'Souza, Taghian and Khosla, 2007), organic food (Hartmann and Apaolaza-Ibanez, 2012; Laroche, Bergeron and Barbaro-Forleo, 2001; Michaelidou and Hassan, 2008; Seyfang, 2007), organic and green personal care products (Kim and Chung, 2011; Ling, 2013), reusable products (Ramayah, Lee and Mohamad, 2010) and eco-friendly packaged products (Prakash and Pathak, 2017). This research takes the same perspective to conduct investigations into green purchase intention in relation to a food product (instant noodles) in eco-friendly packaging.

There have been several ways to measure purchase intention in the green consumption literature (see Backhaus *et al.*, 2005; Barber *et al.*, 2012; Didier and Lucie, 2008; Khan and Kirmany, 2015; Prakash and Pathak, 2017; Sun and Mozwitz, 2005). Firstly, purchase intention can be measured by the expressed behavioural intention to purchase, based on a measurement scale which consists of positively worded questions relating to green buying behaviours (Backhaus *et al.*, 2005; Barber *et al.*, 2012; Sun and Mozwitz, 2005). Nevertheless, this type of measure may produce a halo-effect that causes research participants to over-rate their behavioural intentions (Barber *et al.*, 2012; Schlosser, 2005). In academic research, measuring green purchase behaviour has been quite difficult and challenging (Follows and Jobber, 2000). The main reason is that by nature, measures have been often normative, which may cause an exaggerating degree of self-reported green behaviour (Follows and Jobber, 2000). To prevent this inflation in self-reported responses, this research examines not only behavioural intention but also related factors which show consumers' intentional commitment, such as willingness to pay and shopping effort. In other words, this research explores Vietnamese consumers' willing to pay and shopping effort for eco-friendly packaged instant noodles in association with their self-reported behavioural intention.

This research assumes that consumers' commitment to their intention can be expressed in willingness to pay and shopping effort. Willingness to pay can be a practical way to look at the

green purchase intention of consumers. In GCB literature, many authors measure willingness to pay for green products (Barber *et al.*, 2012; Didier and Lucie, 2008; Khan and Kirmany, 2015; Prakash and Pathak, 2017). In addition, there is another way to look at purchase intention by measuring shopping effort. In order to be green consumers, they need time and space in their personal lives, which need a lot of compromises in busy lifestyles (Young *et al.*, 2010). Everyday green purchase often involves trade-off decisions, resulting in a “motivational and practical complexity of green consumption” (Moisander, 2007, p. 404). To show green purchase commitment, consumers may expend more effort in shopping for green products. Thus, shopping effort can reflect the level of commitment to buy as a result of behavioural intention. Shopping effort for eco-friendly packaging was examined in an extant study by Ellen (1994) and was replicated in Biswas *et al.* (2000)’s and Konuk, Rahman and Salo (2015)’s. In this research, further attempts are made to examine not only willingness to pay but also shopping effort of Vietnamese consumers for instant noodles in eco-friendly packaging. It is assumed that once Vietnamese consumers form behavioural intention, they will be more likely to pay and spend shopping effort for instant noodles in eco-friendly packaging. The following sections provide discussions on potential effects of green behavioural intention on willingness to pay and shopping effort.

### **3.3.1 Green Purchase Intention and Willingness to Pay**

This section presents arguments reflecting the potential association between green purchase intention and willingness to pay. This research assumes that if consumers appreciate the environmental benefits of eco-friendly packaging and form strong enough purchase intention, they will be more willing to pay for eco-friendly packaged instant noodles. It assumes that when consumers are aware of environmental impacts of conventional packaging and motivated to buy eco-friendly packaged options, they might be willing to pay extra for eco-friendly packaging to reduce negative impacts of their consumption.

Willingness to pay can be associated with green purchase intention of consumers in both developed and emerging markets. In GCB literature, there have been several studies measuring consumers’ willingness to pay in developed market contexts (e.g., Barber *et al.*, 2012; Biswas and Roy, 2015; Didier and Lucie, 2009; Krystallis and Chryssohoidis, 2005; Laroche, Bergeron and Barbaro-Forleo, 2001; Tully and Winer, 2014). For example, Didier and Lucie (2008) found that organic and trade fair labels increase willingness to pay of French consumers. Krystallis and Chryssohoidis (2005) reported consumer willingness to pay for organic food in Greece. Similarly, Laroche, Bergeron and Barbaro-Forleo (2001) measured willingness to pay for biofuels and used the results

to segment the consumer market into willing to pay and not willing to pay segments. Tully and Winer (2014) also confirmed consumer readiness to pay for socially-responsible products, with the finding that social norms may increase the proportion of participants who are willing to pay a premium. The above-mentioned studies are consistent in the findings that consumers in developed countries do express willingness to pay for eco-friendly products.

In emerging market contexts, wider consumer behaviour literature shows that consumers tend to prefer goods manufactured in an environmentally sustainable manner (Wang, Yam and Tang, 2013; Zhao *et al.*, 2014). However, research on willingness to pay for environmentally friendly product attributes is still in its infancy in emerging markets (Shuai *et al.*, 2014). For instance, only a few studies in India investigate willingness to pay for green product alternatives (e.g., Khan and Kirmani, 2015; Triveli, Patel and Savalia, 2015). One example is Triveli, Patel and Savalia (2015)'s study which reported different levels of willingness to pay for green products from different consumer segments with different levels of environmental concern. In Vietnam, there have been no reported studies on willingness to pay for green product alternatives or on the relationship between green purchase intention and willingness to pay. Hence, this research explores whether and how green purchase intention is related with willingness to pay for eco-friendly packaging.

In sum, this research is based on prior research findings that confirmed willingness to pay for green product alternatives. It further argues that to form green purchase intention with willingness to pay for green products, this process may start on an everyday decision making basis with an everyday green product such as an eco-friendly packaged food product. Willingness to pay shows a higher level of commitment to turn behavioural intention into actual behaviour. In this way, behavioural intention may positively impact on willingness to pay. That is, the higher level of green purchase intention, the more willing consumers are to pay for eco-friendly packaging. The hypothesis developed to capture the relationship between green behavioural intention and willingness to pay is thus developed as follows:

*H10: Green purchase intention is positively related to willingness to pay for instant noodles in eco-friendly packaging.*

### **3.3.2 Green Purchase Intention and Shopping Effort**

This section presents the discussion on the potential relationship of green purchase intention on shopping effort for green products. It argues that there is another way to look at purchase intention

by measuring shopping effort. To behave as green buyers requires time, space and personal effort (Young *et al.*, 2010). Every purchase has resource impact implications (Moser, 2015). Thus, the level of commitment to act on green purchase intention may require resources or shopping effort for green products. In this research, shopping effort is described as the level of effort and attention expended for buying eco-friendly packaged instant noodles.

Some studies have examined consumers' shopping effort for green products (e.g., Ellen, 1994; Konuk, Rahman and Salo, 2015). One example of an extant study measuring shopping effort for eco-friendly packaging is Ellen (1994). Ellen (1994) includes a measure of shopping effort with two items: (1) Choosing products in packaging that is environmentally safe means spending a lot more time shopping; (2) Shopping for products in recycled packages requires a lot of extra effort. Some investigations using the measure of shopping effort by Ellen (1994) or its modified measure include Biswas *et al.* (2000) and Konuk, Rahman and Salo (2015). For example, in their studies on green behavioural intention across Turkey, Finland and Pakistan, Konuk, Rahman and Salo (2015) included an item on shopping effort in the survey (I will make effort to buy this white goods brand because it is environmentally friendly). The item had factor loadings ranging from 0.78 to 0.94, indicating satisfactory reliability. This supports the measurement of shopping effort intended for this research.

There have been inconsistent findings related to shopping effort for green products. Thøgersen, Jørgensen and Sandger (2012) investigated the level of purchase involvement expressed for green attributes of products. The studied product was milk (organic milk and conventional milk) and the context was an ordinary shopping situation in a Danish supermarket. The data revealed that consumers do not spend effort when choosing a greener everyday product option (Thøgersen, Jørgensen and Sandger, 2012). In Singapore, however, an extant study by Shamdasani, Chon-Lin and Richmond (1993) reported that green consumers not only show willingness to pay premiums but also expend more effort to adopt green purchase behaviour. The findings of these two studies appear contradictory to each other. This might be because Shamdasani, Chon-Lin and Richmond (1993)'s study only explored shopping effort for general green products and not a specific green everyday product as in the study by Thøgersen, Jørgensen and Sandger (2012). Furthermore, research on the relationship between green purchase intention and shopping effort for green alternatives has been rarely reported. Hence, this research explores shopping effort for an eco-friendly packaged food product to gain a more accurate understanding of green purchase behaviour. In Vietnam, there is a variety of choices of packaged instant noodles with many brands: the market leader Vina Acecook alone has more than 20 brands, not mentioning the other 49 companies in the

instant noodle market (Vietnam Investment Review, 2017). Given many choices of instant noodle brands in the market, consumers may be overwhelmed with information overload in their grocery shopping trips. Thus, consumers who have a tendency to buy greener options may need to spend more shopping effort. It would be useful for marketers to know whether or not consumers spend effort to buy their eco-friendly packaged instant noodle alternatives, should they be available in store outlets. The eleventh hypothesis captures the relationship between green purchase intention and shopping effort, as detailed below:

*H11: Green purchase intention is positively related to shopping effort for instant noodles in eco-friendly packaging.*

### **3.3.3 Shopping Effort and Time Pressure**

This section reflects arguments about the potential relationship of perceived time pressure on shopping effort. In the context of the Vietnamese market, given the rapid emergence of consumerist dynamic and busy lifestyle in urban areas, many consumers may not have sufficient time to buy in a greener manner. Taking this point, another research aspect which is useful to explore is how shopping effort can be affected by perceived time pressure. The economic value of a person's time is due to the value placed on its limited nature as a resource (DeVoe and Pfeffer, 2011). DeVoe and Pfeffer (2011) stated that the value of time reflects in human behaviour, where busy consumers place higher economic value on time. As a consequence, consumers may perceive time as a scarce resource and therefore feel more time pressured. This research assumes that customers who put more economic value in time due to their limited time resources will be those who experience high levels of perceived time pressure and will behave accordingly in their purchase activities. Consequently, perceived time pressure may produce negative effects on shopping effort.

This research assumes that packaged instant noodle purchases often occur in grocery shopping trips, which fall into habitual purchase behaviours. In habitual purchase behaviour, time pressure is a determinant of consumers' purchase behaviour (Biel, Dahlstrand and Grankvist, 2005). That means, under time pressure, consumers may display different levels of engagement in the purchasing process. In grocery shopping for packaged instant noodles, this research predicts that consumers with perceived time pressure will have a tendency to make purchase decisions more quickly. In this manner, they may not be able to process product information sufficiently for a sound purchase decision (Collins *et al.*, 2014). As a result, consumers may not spend extra shopping effort to find eco-friendly packaged alternatives under time pressure. With regard to buying eco-friendly

packaged instant noodles, consumers may need time to look for eco-friendly packaged alternatives. Under time pressure, the shopping effort needed for environmental purchases may not be sufficiently conducted. However, the relationship of perceived time pressure on shopping effort is not adequately explored in GCB literature. No existing work on eco-friendly packaged products has reported about the relationship between perceived time pressure and shopping effort. Hence, this research puts forward a hypothesis on the relationship between perceived time pressure and shopping effort. It predicts that because of perceived time pressure, consumers will feel pressured in their grocery shopping trips and in this manner, perceived time pressure will reduce shopping effort consumers might have otherwise exerted on their grocery purchasing. The next hypothesis is therefore written below:

*H12: Perceived time pressure is negatively related to shopping effort for instant noodles in eco-friendly packaging.*

### **3.3.4 Summary of the Intended Measurement of Green Purchase Intention, Willingness to Pay and Shopping Effort**

Section 3.3.1 and 3.3.2 presented arguments for the measurement of behavioural purchase intention and its potential associations with willingness to pay and shopping effort for instant noodles in eco-friendly packaging. It is indicated that prior studies have explored willingness to pay for green products with inconsistent findings. It also points out that shopping effort for green products has not been explored in association with behavioural purchase intention. On the other hand, Section 3.3.3 explores the potential relationship between shopping effort as the possible outcome of behavioural purchase intention and perceived time pressure. There have been no known empirical studies as of to date which investigate behavioural purchase intention and its effects on willingness to pay and shopping effort as well as relationships between perceived time pressure and shopping effort. This research, therefore, aims to fill these gaps and sets out investigations to explore these potential relationships.

## **3.4 THE CONCEPTUAL RESEARCH MODEL**

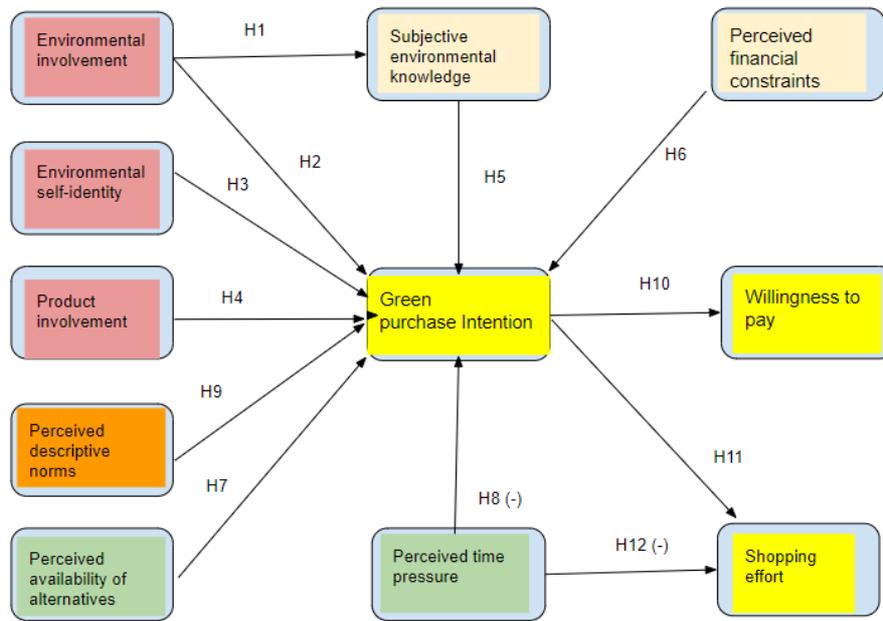
This section presents the development of the conceptual research model, based on the discussion and hypotheses developed in Section 3.2 and Section 3.3. To understand consumers' green purchase intention, the conceptual model is built on the directions of the MAO approach (Ölander and Thøgersen, 1995) and partly on the focus theory of Normative Conduct (Cialdini, Reno and

Kallgren, 1990). To achieve research objectives, a holistic approach is used to include both internal and external factors which may impact on green purchase intention. Furthermore, this research considers green purchase intention from multiple perspectives ranging from behavioural intention to willingness to pay and shopping effort. This research also advances the investigation by examining green purchase intention relating to packaged instant noodles. Section 3.4.1 presents a visual representation of the preliminary conceptual research model and Section 3.4.2 provides a summary of the research questions and hypotheses.

### **3.4.1 The Conceptual Research Model**

The conceptual research model is built, based on the direction of motivation, ability and opportunity of the MAO approach with the inclusion of variables identified from the literature review. Accordingly, this research does not use all variables suggested in the MAO model. Instead, based on an extensive literature review to identify relevant antecedent variables relating to motivation, ability and opportunity, the preliminary conceptual model is developed.

Figure 3-1 shows the antecedent factors identified in each of the directions, motivation, ability and opportunity, of the MAO approach. This model includes variables identified and hypothesised to have relationships. For example, in the direction of motivation, three factors are identified from the literature review: environmental involvement, environmental self-identity and product involvement. In terms of ability, subjective environmental knowledge and perceived financial constraints are selected. In the direction of opportunity, the literature review in Section 3.2 identified two factors, namely, perceived availability of alternatives and perceived time pressure. The antecedent factors are not necessarily built as sub-constructs of motivation, ability and opportunity. Rather, these antecedent factors are examined directly in association with green purchase intention in the causality flow. Social influences in the form of perceived descriptive norms are also included for the purpose of this research. In addition, green purchase intention is predicted to have positive relationships with willingness to pay and shopping effort for instant noodles in eco-friendly packaging. Research hypotheses are developed to capture potential associations among the factors in the conceptual model (see Section 3.2, Section 3.3). Overall, Figure 3-1 is a visual representation of the preliminary conceptual research model, which is modelled to reflect the assumed relationships among the identified variables.



**Figure 3-1: The Preliminary Conceptual Research Model**

It must be noted that the conceptual research model visually shows that green purchase intention serves to mediate the relationships between antecedent factors and willingness to pay and shopping effort. Antecedent factors are thus modelled to only have indirect effects on willingness to pay and shopping effort through purchase intention. Within the research scope, no hypotheses are formed to capture this potential chain of effects. This is examined in the research result analysis in Chapter 7 although there are no related hypotheses.

### 3.4.2 Research Questions and Research Hypotheses

Section 3.2 identified relevant internal and external antecedent factors that may affect green purchase intention. These antecedent factors include environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived financial constraints, perceived time pressure, perceived availability of alternatives, and perceived descriptive norms. Particularly, green purchase intention is considered to be in potential relationships with willingness to pay and shopping effort for a food product in eco-friendly packaging. In this research, the studied product is packaged instant noodles. Following the MAO approach, this research predicts that motivation and ability characteristics of individual consumers and opportunities presented to them, combined with social descriptive norms, can directly be associated

with green purchase intention. In addition, it examines whether and how these factors have impacts on green purchase intention. Thus, the key research question is put forward below:

*Research question (RQ): How do internal psychological and external contextual social factors influence consumers' green purchase intention for a packaged food product (packaged instant noodles) with regard to eco-friendly packaging?*

Specifically, the major research questions are sequenced as below:

*RQ1: What do consumers perceive to be eco-friendly packaging?*

*RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

*RQ3: What factor has the most significant influence on green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

Little research has explored whether and how green purchase intention may affect willingness to pay and shopping effort. Therefore, two more questions are developed so as to capture this research gap, as shown below.

*RQ4: How does green purchase intention affect willingness to pay for instant noodles in eco-friendly packaging?*

*RQ5: How does green purchase intention affect shopping effort for instant noodles in eco-friendly packaging?*

Research question 1 is addressed and research question 2 is also partly explored in the first phase of this research, which is explained in Chapter 4. Twelve preliminary hypotheses are developed for the remaining four research questions and summarised in Table 3-1.

**Table 3-1: Research Questions and Hypotheses**

| <b>Research Questions</b> | <b>Research Hypotheses</b>  |
|---------------------------|---|
| RQ1                       | To be addressed in phase one of the research – exploring consumer perceptions of eco-friendly packaging   |
| RQ2, RQ3                  | H1: Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging.<br><br>H2: Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging. |

| Research Questions | Research Hypotheses  |
|--------------------|--|
|                    | <p>H3: Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H4: Product involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H5: Subjective environmental knowledge concerning eco-friendly packaging is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H6: Perceived financial constraints are negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H7: Increased perceived availability of alternatives is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H8: Perceived time pressure is negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H9: Perceived descriptive norms are positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> |
| RQ4, RQ5           | <p>H10: Green purchase intention is positively related to willingness to pay for instant noodles in eco-friendly packaging.</p> <p>H11: Green purchase intention is positively related to shopping effort for instant noodles in eco-friendly packaging.</p> <p>H12: Perceived time pressure is negatively related to shopping effort for instant noodles in eco-friendly packaging.</p>   |

### 3.5 CHAPTER SUMMARY

The chapter provided a literature review to identify relevant antecedents of green purchase intention, including environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived financial constraints, perceived time pressure, perceived availability of alternatives, and perceived descriptive norms. The literature review was

conducted to pre-determine antecedents of green purchase intention, which were used to develop the preliminary conceptual research model. A summary of preliminary research hypotheses was also given. The following chapter (Chapter 4) describes the research methodology, including the overall research approach and the research procedures used to examine the research questions. In addition, Chapter 4 provides an overview of research design and details the research methodology for phase one of the research. Chapter 5 reports the findings of phase one and Chapter 6 describes the research design for phase two of this research.

## **CHAPTER 4 - RESEARCH DESIGN OVERVIEW & PHASE ONE: QUALITATIVE RESEARCH DESIGN**

### **4.1 INTRODUCTION**

This chapter provides an overview of research design and details the research design used in phase one of this research. First, Section 4.2 presents the research paradigm towards the phenomenon of green purchase intention. Selected research methods are described in Section 4.3. This research followed a sequential two-phase mixed methods design. Phase one collected qualitative data via focus group interviews to explore consumers' perceptions of eco-friendly packaging and to validate antecedents of green purchase intention which were identified in Chapter 3. Phase two used online surveys to collect quantitative data for testing the hypotheses formulated from the literature review and phase one's findings. Section 4.4 describes data collection method, sampling technique, participant recruitment, data collection and analysis in phase one. Ethical considerations for phase one are discussed in Section 4.5. Section 4.6 summarises the chapter.

### **4.2 RESEARCH PARADIGM**

The concept of research paradigm is discussed in this section. The selection of the research paradigm adopted in this research is also justified. For any research, the starting point of methodology is to choose a research paradigm. For many years, researchers have been engaging in a debate about the best research paradigm that should be used in academic studies (Johnson and Onwuegbuzie, 2004; Johnson, Onwuegbuzie and Turner, 2007). Quantitative purists (Maxwell and Delaney, 2004) articulated assumptions that are in line with what is well known as positivist philosophy. To elaborate, the positivist paradigm is derived from the natural sciences and treats research as independent observation of events occurring within a system (Fisher, 2004). One of the important assumptions of positivism is that social reality is independent of researchers and exists regardless of whether or not researchers are aware of it (Hunt, 2003). As a consequence, social observations can be made, leading towards some objective truth, that means, time-and-context-free generalisations are desirable and possible (Nagel, 1986). These observations are most often gathered by means of surveys and reported in terms of their aggregate values, such as means and standard deviations (Nagel, 1986).

An alternate research paradigm comes from one intellectual tradition: phenomenology. Phenomenology refers to the way in which humans make sense of the world (Saunders, Lewis and

Thornhill, 2012). The phenomenological paradigm attempts to understand human behaviour by focusing on meanings rather than measurement (Neuman, 2006). The fundamental aim of phenomenological philosophy is to gain an appreciation of individuals' experiences through the consciousness of the experiencer (Giorgi, 2009). The challenge for phenomenological researchers is to find ways into the world of research participants to understand their points of view.

Between these two approaches (positivist and phenomenological paradigms) sits the pragmatic ontology. Pragmatic ontology can be used to understand situations in real-world contexts, rather than seeking an understanding of antecedents in an experimental setting or seeking to identify a universal truth (Creswell, 2009; Mackenzie and Knipe, 2006). Pragmatism is defined by Ormerod (2006, p. 892) as a "philosophical doctrine that can be traced back to the academic sceptics of classical antiquity who denied the possibility of achieving authentic knowledge regarding the real truth and taught that we must make do with plausible information adequate to the needs of practice". In particular, Johnson and Onwuegbuzie (2004, p.16) argued for the application of pragmatic philosophy in social research, emphasising that "Taking a pragmatic and balanced or pluralist position will help improve communication among researchers from different paradigms as they attempt to advance knowledge. The bottom line is that research approaches should be mixed in ways that offer the best opportunities for answering important research questions." The practical application of the pragmatic paradigm is that it is a problem-centred approach which is not totally locked into a particular research philosophy (MacKenzie and Knipe, 2006). In this sense, research design and methodology may take a multitude of forms including quantitative, qualitative, and mixed methods research depending on what the researcher judges will most effectively produce credible knowledge claims, given available data, possibilities of analysis and available resources (Biddle and Schafft, 2015). In sum, with pragmatism, the focus is on the research problem rather than on the techniques used (Creswell, 2009). Thus, the research objectives guide the pragmatist to the methodology, rather than prescribing specified research techniques. In this current PhD research, different methodologies were employed to answer the research questions, as explained below.

- *RQ1: What do consumers perceive to be eco-friendly packaging?*

To answer research question one, this research explored consumers' perceptions of eco-friendly packaging in general and particularly in the packaged instant noodle product category. Therefore, an investigation was undertaken into research participants and their viewpoints about eco-friendly packaging. This required interviews to obtain and to interpret deep insights from research participants to make sense of their perspectives.

- *RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

In order to answer this question, literature review was conducted to determine potential antecedents affecting green purchase intention. Accordingly, in the first phase of this research, research participants' opinions were explored to validate the inclusion of variables which were pre-identified from the literature review. From participant insights, the process of theory building happened with a research model built and refined and research hypotheses formulated and reformulated. The second phase also contributed to the answer to research question two by quantitatively testing research hypotheses.

- *RQ3: What factor has the most significant influence on green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*
- *RQ4: How does green purchase intention affect willingness to pay for instant noodles in eco-friendly packaging?*
- *RQ5: How does green purchase intention affect shopping effort for instant noodles in eco-friendly packaging?*

To answer these questions, it is necessary to operationalise the research model by conducting a quantitative study to explore relationships between variables identified. To generate a research strategy to collect data, the researcher may use existing theories to develop hypotheses which are tested to be confirmed partly or wholly, or to be rejected (Saunders, Lewis and Thornhill, 2012). The outcome of this process leads to further theoretical development for further research. The emphasis is on quantifiable observations based on statistical analysis (Neuman, 2006). In this direction, this research used rigorous measures and objective research to test hypotheses by carefully analysing quantitative data from determined measures.

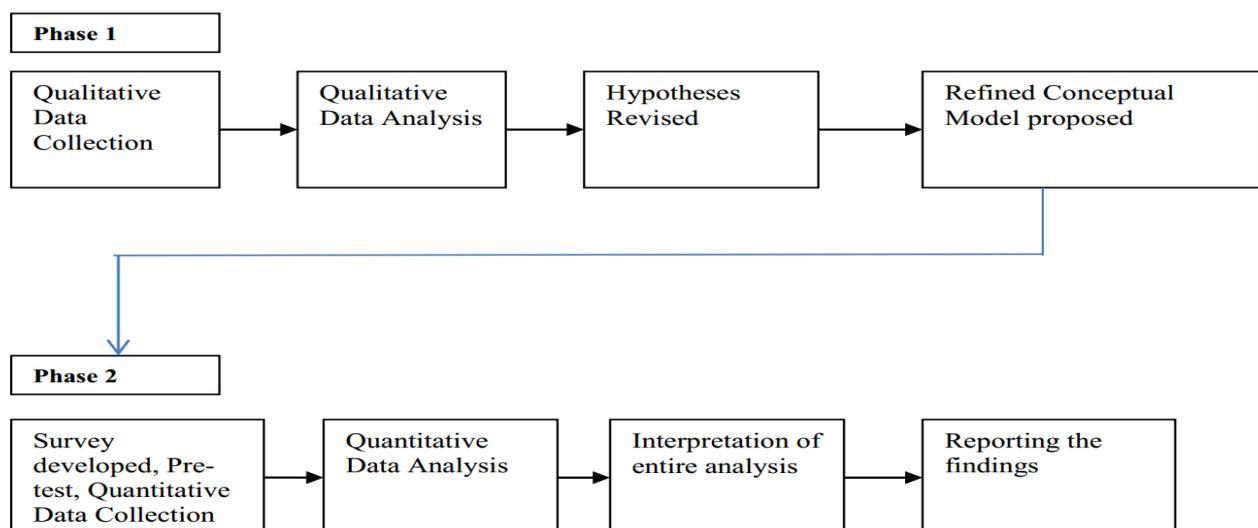
In short, as a result of the above mentioned considerations, pragmatism was the research paradigm which best fit all the questions to be addressed in this research. Pragmatism allows the researcher to be flexible to choose methodology that best fits the research objectives (Saunders, Lewis and Thornhill, 2012). The most important reason why this choice was made came from the research questions. To answer different research questions, qualitative and quantitative methods were adopted in their turn and so the overall position was to stand in different perspectives to answer different research problems. Hence, the research philosophy applied in this research was pragmatism, allowing a mixture of positions to answer the research questions. Both qualitative and

quantitative methods were used, and both text data and numerical data were collected for the purpose of this research.

In terms of research methods, this research adopted sequential research design with a mixed methods approach. The potential benefits of this research approach are that “such a design may be undertaken when a researcher intends to conduct a primarily quantitative study, but needs to begin with initial qualitative data collection so as to identify or narrow the focus of possible variables” (Creswell, 2009, p.208). A mixed methods approach offers advantages and minimises disadvantages of both qualitative and quantitative methods (Creswell, 2012). It also allows for a level of breadth as well as depth of data to be achieved within a research, and can help improve the generalisability of research findings (Mayoh and Onwuegbuzie, 2015) and the validity of the research conclusions (Singleton, Straits and Straits, 2005). Moreover, this approach can provide a full picture of social phenomena under investigation from different perspectives (Creswell, 2012). Given these considerations, a mixed methods approach was therefore applied in this research to enable a more accurate understanding of consumers’ green purchase intention for eco-friendly packaged instant noodles in the Vietnamese market.

### 4.3 RESEARCH PROCEDURES

The research followed a mixed methods approach, using a sequential design recommended by Creswell (2012) with two phases. The visual model for sequential two-phase mixed methods procedures applied is illustrated in Figure 4-1.



**Figure 4-1: Visual model of sequential mixed-methods procedures  
(developed for this research)**

The primary question of this research was:

- *How do internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

In an emerging market context, green purchase intention for eco-friendly packaging could be influenced by several internal and external factors different from the influencing factors in a developed market context. Using the context of Vietnam, this research was underpinned by the MAO approach, based on which factors relating to motivation, ability and opportunity were identified. These factors were assumed to potentially affect Vietnamese consumers' green purchase intention for eco-friendly packaged instant noodles. The primary research question was decomposed to make four sub-research questions as already discussed in Section 3.4.2, Chapter 3.

Phase one of this research involved a qualitative study which used focus group interviews to explore consumer perceptions of eco-friendly packaging and to validate variables included in the research model. Research design for phase one is described in Section 4.4. The purpose of phase one was to provide consumer insights of eco-friendly packaging. In addition, phase one was the step to qualitatively examine the proposed research model's potential to predict green purchase intention. The first research question to be addressed in phase one was:

- *RQ1: What do consumers perceive to be eco-friendly packaging?*

Phase one also partly contributed to the answer of the second research question by validating the pre-determined variables of the proposed research model. These variables were identified from the literature review (see Chapter 3). The second research question was:

- *RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

Within this research, a qualitative study was conducted in phase one to determine and validate the inclusion of variables that could be studied in more breadth quantitatively in phase two. The literature review in Chapter 3 served as an anchor for this qualitative phase to stay focused on the research topic. This research therefore gave more weight to the quantitative phase (phase two), compared to the qualitative phase (phase one). Hence, this mixed-methods research approach ensured that deductive research was conducted in phase one with an appropriate level of contextual relevance by being located within the lived experiences of research participants. In this thesis, Chapter 5 reports phase one's findings, based on which to refine the first conceptual research model developed in Chapter 3. In phase two, the refined research model after phase one was to be

quantitatively examined by data collected from a survey to determine the degree to which the model might predict green purchase intention for instant noodles in eco-friendly packaging. In addition, the relationships of green purchase intention with willingness to pay and shopping effort were explored. Research design for phase two is presented in Chapter 6. The questions examined in phase two are listed below:

- *RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*
- *RQ3: What factor has the most significant influence on green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*
- *RQ4: How does green purchase intention affect willingness to pay for instant noodles in eco-friendly packaging?*
- *RQ5: How does green purchase intention affect shopping effort for instant noodles in eco-friendly packaging?*

In summary, this research used a mixed-method approach to enable the operationalisation and testing of an integrative model of green purchase intention related to a food product in eco-friendly packaging. A mixed methods research was applied to fulfil two main objectives: 1) Explore consumer perceptions of eco-friendly packaging; 2) Generate and test hypotheses for relationships between antecedent factors and green purchase intention for packaged instant noodles with regard to eco-friendly packaging.

#### **4.4 RESEARCH DESIGN: PHASE ONE**

This section outlines phase one which was undertaken to further inform the development and operationalisation of the research model. It describes the methods used to conduct this qualitative phase (phase one). It also justifies the need to apply the methods selected in phase one.

Testing an integrative model of green purchase intention related to instant noodles in eco-friendly packaging required exploratory research into consumer perceptions of eco-friendly packaging and factors influencing green purchase intention in the context selected for this research. Recently, a few studies have explored consumers' evaluations of eco-friendly packaging in developed market contexts (Koenig-Lewis *et al.*, 2014; Magnier and Cri e, 2015; Scott and Vigar-Ellis, 2014). Neither public information nor academic research on Vietnamese consumers' perceptions of eco-friendly

packaging was available at the time of this research. Hence, this research explored consumer perceptions of eco-friendly packaging and involved Vietnamese consumers in investigations.

Initial findings in the literature review discussed in Chapter 3 demonstrated a range of antecedent factors which could influence green purchase intention. These factors included environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived time pressure, perceived financial constraints, perceived availability of alternatives, and perceived descriptive norms. However, it was unclear whether these factors might well predict green purchase intention with regard to instant noodles in eco-friendly packaging in the Vietnamese market context. Moreover, it was not apparent what Vietnamese consumers perceived to be eco-friendly packaging particularly for packaged instant noodles. Therefore, the qualitative research in phase one was undertaken to provide consumer insights about a unique research circumstance of everyday purchase decisions in Vietnam on the topic of eco-friendly packaging. These insights provided information for the necessity to further develop the research model. The expected outcomes of this phase were the identification of consumers' perceived characteristics of eco-friendly packaging, and the validated antecedents of green purchase intention relevant to the Vietnamese research context of packaged instant noodles.

#### **4.4.1 Qualitative Data Collection Approach**

In order to collect data for the purpose of refining the research model and formulating the research instrument in phase two, six focus group interviews were conducted in phase one. To maintain consistency of the focus group interviews, the discussion theme and the sequence of questions were prepared and tested before proceeding with the official focus group interviews. Focus group questions were built around the subject on consumer perceptions of eco-friendly packaging. Some questions were related to antecedent factors derived from the preliminary research model of green purchase intention. To comply with ethical standards, the PhD researcher used the informed consent form and the discussion guide for the focus group interviews (see Appendix 1 and Appendix 2). Chapter 5 details the findings from focus group interviews conducted in phase one.

The choice of focus group was made, based on considerations of the characteristics of the method, the research topic and the resources available to the PhD researcher. In qualitative research, individual and focus group interviews are the two equally effective data collection methods, particularly to gain deep insights from the subjects (Crabtree *et al.*, 1993). When choosing which data collection methods to use, researchers need to consider sensitiveness of the topic, group

composition and interaction, the required depth of responses, and related resources such as time, money and training. In this research, focus group interviews were selected first because they encourage free flowing discussions among small groups of participants and the sharing of perceptions in an open and tolerant environment (Saunders, Lewis and Thornhill, 2012). Second, the topic was not individually sensitive. Third, the topic required group interaction for the exchange and sharing of consumer insights. Finally, the PhD researcher has experience conducting focus group interviews from several years working in marketing for different organisations.

The group interviews had a flexible structure, allowing the researcher the ability to identify and explore consumer insights related to eco-friendly packaging and potential factors impacting green purchase intention. To achieve the flexibility level desired for the focus group interviews, the questions were open-ended to encourage sharing insights and perspectives from participants. As individuals might have different experiences and perceptions of eco-friendly packaging and green purchases, the researcher should be able to use probing questions to facilitate the discussion so that participants felt comfortable to share their own viewpoints about different dimensions of eco-friendly packaging. Also, consumer insights on factors potentially affecting green purchase intention were sought to help formulate key constructs to be tested quantitatively in phase two of this research.

Focus group participants were selected on the basis that they shared common characteristics related to the topic being discussed. They were all active buyers of packaged instant noodles in the Vietnamese market (i.e., Vietnamese consumers who bought and used packaged instant noodles for the latest three months). There were six focus group interviews organised in the two largest cities of Vietnam, Ho Chi Minh City and Hanoi. The focus groups were conducted in June 2014, allowing sufficient time to conduct qualitative data analysis, to incorporate research findings into the research model and to reformulate research hypotheses for quantitative testing within the timeframe of the PhD program.

#### **4.4.2 Qualitative Sample Size and Data Collection Procedures**

In methodology literature, there are no clear guidelines as to sample sizes required for a qualitative study. According to Mason (2010), the final choice of sample size in qualitative research is at the researcher's discretion but the general principle is saturation in data collection. For most studies, three focus groups are sufficient to identify all of the most prevalent themes within the data set (Guest, Namey and McKenna, 2017). More focus groups might be used to validate the findings

from the first three groups. Once there are no new viewpoints raised, indicating saturation point, no further focus groups are needed (Zikmund and Babin, 2007). In this research, six focus group interviews were conducted with no new viewpoints raised after four interviews.

The next sampling decision was the types of sampling. The sampling strategy in qualitative research is usually chosen based on the methodology and topic (Higginbottom, 2004). Creswell (2009) identified commonly used types of qualitative sampling, including convenience, purposive, theoretical, selective, within-case and snowball sampling. Whichever type of sampling is used, the sample must be appropriate and consist of participants who best represent or have knowledge of the research topic in order to provide useful and relevant data (Creswell, 2009). Purposive sampling is the most widely used method in content analysis studies because this type of sampling seeks relevant information from knowledgeable participants for the research purpose (Elo *et al.*, 2014). Hence, purposive sampling was adopted in phase one of this research.

To summarise, in phase one of this research, purposive sampling was used, with six focus group interviews. Samples were recruited from a consumer panel of a market research company. Selection criteria were communicated before samples were selected to make sure appropriate participants were recruited. There were four criteria: participants must be aged from 20 to 55 years, resided in Ho Chi Minh or Hanoi, active buyers in the packaged instant noodles product category within the latest three months and willing to spend two hours with a group interview. The screening of suitable participants identified 120 potential participants for focus groups. Emails providing information about the purpose of the research were sent to potential participants to invite voluntary participation. Upon indicating the willingness to attend, each potential participant was telephoned to confirm and another email was sent to inform the time and location of the focus groups with directions for parking. To encourage willingness to attend the focus groups, a shopping voucher valued at 150,000 VND (approximately 6.5 USD) was offered to each attending participant at the end of each interview session.

The focus group structure was designed so that it could facilitate the discussion while maintaining the focus of the topic (see Appendix 2). The focus group structure was first tested with a small convenience sample of five business students at an off-shore campus of an Australian university. In spite of this non-probability sampling, it still offered some advantages of pretesting (Singleton, Straits and Straits, 1993) and enhanced the confidence of the researcher. Five students were invited for the pre-test group interview because of their availability and their willingness to participate. The pre-test group interview was outside classroom time in a private meeting room. This was to open

discussions and expressions of as many ideas as possible relating to the research topics (eco-friendly packaging and green purchase intention) within the duration of two hours. After the pre-test interview, the participants were asked for feedback on the focus group structure and related logistics. The researcher took notes of the feedback. From the feedback given by the pre-test participants, no change to the focus group procedure was deemed necessary, except the suggestion that food and beverage should be provided. Therefore, all the six focus group interviews took place as planned and food and beverage were offered in each group interview to facilitate a comfortable atmosphere. Details of the interview process and the interviewed participants are described in Chapter 5.

#### **4.4.3 Qualitative Data Analysis Process**

This section describes the qualitative data analysis process, including storing, transcribing and translating data of phase one. Details of data analysis are given. Justifications for data analysis methods are also provided.

##### **4.4.3.1 Storing, Transcribing and Translating Qualitative Data**

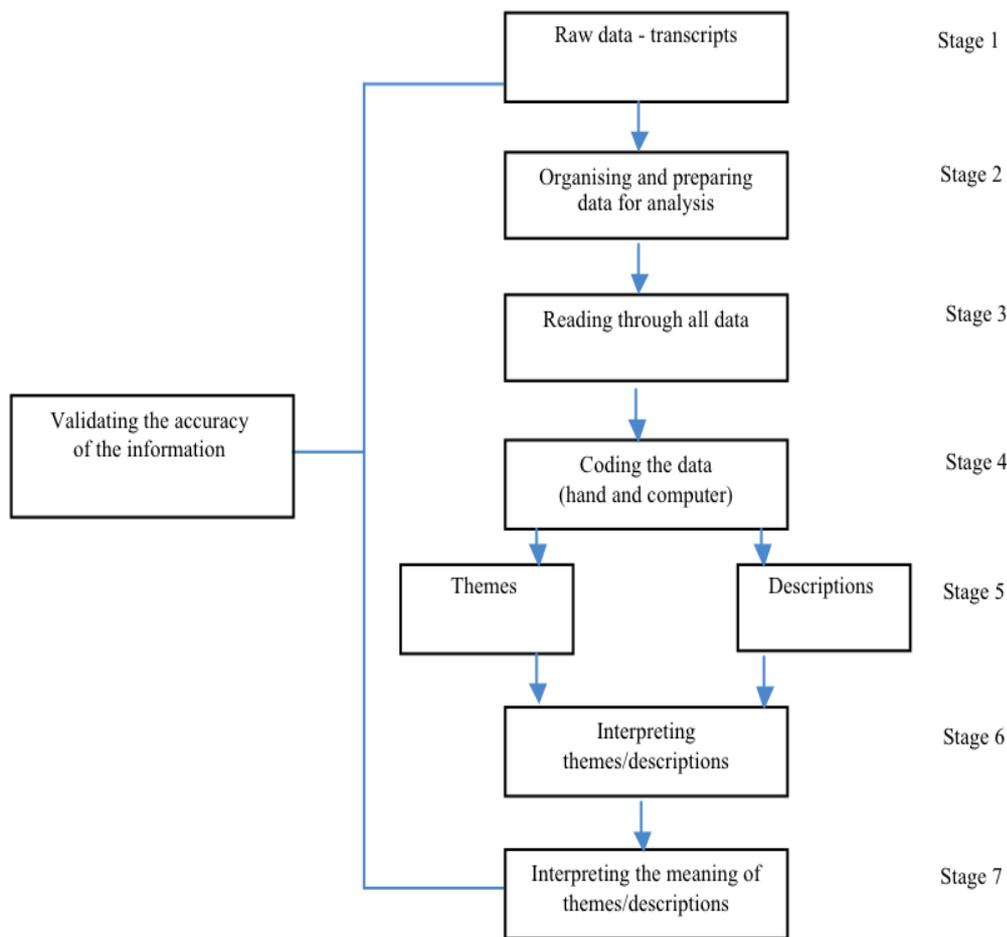
Focus group interviews were audio recorded and the files were password protected and saved in a secure storage server. Transcriptions of the files were undertaken by the researcher with assistance of one casual assistant, who was only hired for the week of focus group interviews on an hourly rate within RMIT Vietnam research support scheme. Each focus group transcript was stored separately in a file under a specified name. Because all focus group interviews were conducted in Vietnamese, the transcripts were translated into English by one professional translator. The documents were back-translated into Vietnamese by the researcher. Finally, the two versions were double checked by one bilingual academic staff to ensure equivalence in the meaning. Equivalence was important between the versions of English and Vietnamese transcripts for qualitative analysis. In translating transcripts, where there were no directly equivalent words, long descriptions were used to counter the lack of clarity (Brennan *et al.*, 2015). In these cases, the researcher provided multiple alternative words for the translators (Brennan *et al.*, 2015). Some overlapping words identified as synonyms or different expressions with the same semantic meanings were also refined and reduced in the translating process (see Table 5-4 in Chapter 5). When agreement was reached and translation was finalised, the researcher concentrated on the English versions of transcripts for data analysis to ensure consistency, because the theories used and the thesis to be written were both in the English language.

#### 4.4.3.2 Analysing Qualitative Data

In the qualitative analysis, data was interpreted using both inductively and deductively based procedures. There were valid reasons for adopting this approach in phase one of the current research. First, the focus groups commenced as an exploratory project seeking to set the stage for quantitative data collection and analysis, which is, to generate a direction for further work in phase two of this research. Data collected from phase one was analysed to explore consumer perceptions of eco-friendly packaging and thus, an inductive approach was used. Second, data was also analysed, using a deductive approach, to validate the inclusion of variables relating to green purchase intention pre-identified from the literature review in order to refine the conceptual research model and reformulate research hypotheses.

Coding or categorising data was vital in phase one of this research as findings were used as input for the second phase. In categorising data, the researcher is supposed to convert original data into analytical categories (Yin, 2009). A framework is needed to ensure that analytical categories make a coherent set for analysis (Yin, 2009). According to Strauss and Corbin (1998), qualitative data can be categorised into three categories: (1) terms emerging within the collected data, (2) actual terms expressed by research participants, and (3) terms identified from existing theory. In phase one, terms were used to interpret consumer perceptions of eco-friendly packaging and its key dimensions. Many terms emerged from the focus group interviews and some were actual expressions of the participants. Other terms from existing theories were used to indicate categories for each pre-selected theme or concept, based on the literature review. These themes or concepts were the pre-selected variables in the conceptual research model developed in Chapter 3. They provided direction for data categorisation in phase one's data analysis process.

With respect to the choice of manual or electronic coding, it depends on the size of the project, the funds and the time available and the inclination of the researcher (Basit, 2003). In this research, the choice was made to do manual coding, because of the time availability and the strengths of the researcher as a bilingual academic. Qualitative data were systematically analysed in order to "understand and interpret the meanings and experiences of the informants" (Spiggle, 1994, p. 492), using the process as described in Creswell (2009) and depicted in Figure 4-2.



**Figure 4-2: Data analysis in qualitative phase of this research (Adapted from Creswell, 2009)**

Upon receipt of the raw data (stage 1), focus group transcripts were organised into folders for each group (stage 2). Then, multiple readings of transcripts for each group were undertaken (stage 3), together with the focus group notes taken during each interview. The readings helped to gain a good appreciation of the context and level of awareness and understanding that research participants expressed about eco-friendly packaging. The main focus was on identifying different dimensions of eco-friendly packaging applied in packaged instant noodles. In addition, attention was paid to the language used by research participants to describe factors which might affect their purchase intention related to instant noodles in eco-friendly packaging.

In stage 4, the Cut-and-Paste method was used. This is a quick and cost-effective technique for analysing a transcript of a focus group interview (Stewart *et al.*, 2007). The first step was to go through the interview transcripts and identify relevant sections (words, phrases, sentences,

paragraphs) that corresponded to the research questions. Colour-coded symbols were used to mark different themes within the text in Microsoft Word program. From the preliminary reading, classifications of major themes were developed, and sections in the transcripts related to each theme were marked.

In stage 4, there were two sub-phases of coding: the first related to consumers' perceptions of eco-friendly packaging, and the second to the factors impacting and relating to green purchase intention. The coding for consumers' perceptions of eco-friendly packaging was conducted in an inductive manner. In this sense, not a single piece of data was pre-coded until it was collected and seen how it functioned in its context. Attention was paid to expressions used by research participants about eco-friendly packaging to identify concepts or items. Then, in stage 5, the identified items were interpreted and organised into main themes or categories based on their relationships with eco-friendly packaging.

For the second sub-phase of coding in stage 4 to validate factors impacting and relating to green purchase intention, a deductive method was used. Stage 5 was repeated for this validating process. At this stage, the researcher used a deductive analysis procedure suggested by Yin (2009). A deductive method was used because a provisional pre-selected list of codes was already created prior to fieldwork. This list came from the key variables in the preliminary research model: environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived financial constraints, perceived time pressure, perceived availability of alternatives, perceived descriptive norms, purchase intention, willingness to pay and shopping effort. The researcher read through all transcriptions of group interviews to determine key terms and participants' used words and quotes to help explain the categories matching with the pre-selected concepts or themes. In this research, these pre-selected concepts or themes were the key variables of the preliminary research model presented in Chapter 3.

Stage 6 of analysis began once the whole manual coding process was complete. The coded copy of the transcribed interviews were cut and sorted so that all materials relevant to each major theme were placed together. The relevant pieces of transcribed texts were used as supporting materials, and incorporated into the final interpretative analysis. This cut-and-paste process was conveniently done, using Microsoft Word. Analysis was like a review to identify any other frequently occurring words that could be potential relevant concepts relating to the two main themes, namely, eco-friendly packaging and antecedents of green purchase intention. In this way, thematic analysis was conducted as it could be used to analyse classifications and present themes identified within the data

(Boyatzis, 1998). There are justifications for thematic analysis in phase one of this research. First, thematic analysis is capable to point out factors that influence any issue generated by the participants (Miles and Huberman, 1994). Second, the flexibility of thematic analysis allows both inductive and deductive methodologies (Hayes, 1997), which were used in the coding process of qualitative analysis in this research. The outcomes of thematic analysis were as follows: twelve elements of eco-friendly packaging were noted and ten out of eleven variables in the preliminary research model were validated (see Chapter 5).

Stage 7 of analysis involved interpreting the meanings of themes. At this stage, identified themes were relabelled to represent concepts related to eco-friendly packaging and green purchase intention. The final list of concepts was generated for the theme of eco-friendly packaging. Also, the final list of key variables impacting and relating to green purchase intention with supporting materials from six focus group interviews produced the revised research model.

#### **4.5 ETHICS AND CONFIDENTIALITY IN PHASE ONE OF THE RESEARCH**

Prior to undertaking phase one, ethical approval was sought from RMIT University, Business College Human Ethics Advisory Network (BCHEAN). The ethics approval number is 16912. Accordingly, sampling frame was obtained via Cimigo, a market research company operating in Vietnam. Cimigo follows the ethical Code of Practice on Market and Social Research laid down by European Society for Opinion and Marketing Research (ESOMAR). A copy of the National Statement on Ethical Conducts in Human Research by National Health and Medical Research Committee (NHMRC) was also made available to Cimigo so that they could refer to it when recruiting participants. Emails were sent to potential participants to generate interest in the research. Once a sufficient sample was confirmed for focus group interviews, emails were sent to them to provide further details - objectives of the research, the research approach, the method for collecting, reporting and storing participant responses, contact details of the researcher and academic supervisors, the date(s) and venue(s) of focus groups. An informed consent was signed by each participant at the beginning of each interview (see Appendix 1). The interviews were audio recorded and participants were advised of the recording and their permission gained before the discussion proceedings.

The Australian Marketing and Social Research Society (AMSRS) guidelines regarding the practices of interviewing, observing, recording and handling images of research participants were strictly followed in qualitative data collection of this research. The anonymity of participants was protected.

No video materials were collected. All research data, such as interview audio files and transcripts were kept in locked cabinets in the researcher's office and destroyed after 5 years since the research completion as required by ethics standards at RMIT. Participants were advised that research data and findings would be disseminated to professional communities, but in no way would it be possible to identify individuals engaging in the research process. This research strictly followed ethical frameworks relating to human research of RMIT University. Details are available at <http://www1.rmit.edu.au/browse/Our%20Organisation%2F;ID=getcoac7sf66;STATUS=A>

#### **4.6 CHAPTER SUMMARY**

The chapter supplied an overview of research design and a detailed discussion of the methods employed to collect and analyse data in phase one of this research. It justified why a pragmatic research paradigm was the most appropriate. The choice of pragmatic paradigm made up the foundation for methodologies of the two phases in this research – qualitative research (phase one) and quantitative research (phase two). Accordingly, a two-phase sequential mixed methods design was used for the purpose of this research. Phase one used qualitative research to explore consumer perceptions of eco-friendly packaging and to validate factors that could influence green purchase intention with regard to instant noodles in eco-friendly packaging. Data collection and analysis procedures of phase one were also detailed. In phase two, a quantitative approach was adopted to examine the research model and test the hypotheses. Chapter 5 reports the findings of phase one. Chapter 6 presents the research design for phase two and Chapter 7 reports the result analysis of phase two of this research.

## **CHAPTER 5 – PHASE ONE: QUALITATIVE RESEARCH FINDINGS**

### **5.1 INTRODUCTION**

The chapter discusses findings from phase one of this research. Phase one employed the focus group interview approach to explore different characteristics of eco-friendly packaging in consumers' perceptions and to validate variables impacting and relating to green purchase intention which were identified from the literature review and incorporated into the preliminary research model. Section 5.2 and Section 5.3 describe the interview process and the profiles of research participants respectively. Regarding qualitative research findings, Section 5.4 discusses consumer perceptions of eco-packaging; Section 5.5 details the validation of antecedents of green purchase intention; Section 5.6 describes the validation of dependent variables in the research model. Section 5.7 presents the updated hypotheses and the revised research model as a result of phase one's findings. Finally, Section 5.8 supplies a summary of the chapter.

### **5.2 THE INTERVIEW PROCESS**

This section details the interview process in phase one. The focus group interviews were undertaken, before and independently, of the online survey data collection in phase two of this research. Three focus groups were organised in Ho Chi Minh City and three in Hanoi. All focus group interviews were conducted in Vietnamese. The venues were rented from a market research company to have professional facilities for the audio recordings and observations. Informed consent forms were signed at the beginning of each focus group interview (see Appendix 1). The focus group interviews were structured with three parts as detailed below:

- Part 1: The researcher focused on exploring consumers' perceptions of eco-friendly packaging. This part concentrated on the identification of different dimensions of eco-friendly packaging that consumers perceived important to them. Participants were asked to discuss dimensions of packaging which they considered to be eco-friendly. Also, they were asked to identify different types of eco-friendly packaging applicable for packaged instant noodles, and to discuss the beliefs they held about eco-friendly packaging associated with purchase and disposal behaviours.
- Part 2: This part concentrated on identifying different types of packaging used for instant noodles in the Vietnamese market and discussing the environmental characteristics of each. To

help with the discussions, twenty packets of instant noodles were brought to the interviews so that the participants could see and inspect the real products. These packets were readily available locally as of the interview dates.

- Part 3: This final part paid attention to antecedent factors potentially affecting green purchase intention with regard to instant noodles in eco-friendly packaging. Participants were given free time to talk about their lived experiences and their viewpoints about buying packaged instant noodles. The focus was on the factors associated with green purchase intention.

Food and beverage were provided in the interviews to make the participants feel comfortable to stay until the end. When each focus group interview ended, each participant was thanked for his or her time and input for the research and offered a small incentive (which was a shopping voucher valued at 150,000 VND – equivalent to 6.5 USD).

Audio recording of all six focus group interviews was carried out at the venues. The participants were advised of the audio recordings and their permission gained before the interview proceedings. Microphones for the digital voice recorder were placed in the interview rooms to make sure all participants' voices were audible.

The group interviews were facilitated by the PhD researcher. Using a guideline provided by Wilson (2003), the researcher brought together a group of people unknown to each other, built a rapport between them, focused their discussions on appropriate topics and ensured that all participants had an equal opportunity to contribute. One assistant, who was present in the observation room, took notes to record key points made by each participant. This assistant was casually hired only for the recordings of focus group interviews on RMIT Vietnam research support scheme.

### **5.3 FOCUS GROUP PARTICIPANTS' PROFILES**

There were 36 participants in total, including 23 females and 13 males. Eighteen participants resided in Ho Chi Minh City, and the other eighteen resided in Hanoi. Each focus group had six participants. Focus groups usually consist of participants who have been selected because they are homogeneous in some respects (Hydén and Bülow, 2003). In this research, there were three respects to be considered in organising focus groups: (1) participants were residing in the same location (Ho Chi Minh City or Hanoi); (2) participants were active buyers of packaged instant noodles in the last three months; (3) participants were in the same age groups. The main reason why the focus groups

were arranged in relevant age groups was that participants would find it more comfortable to share experiences and express their opinions with people of their age groups. Social conventions in Vietnam dictate that addressing people is different depending on age (Dang, 2017; Stokes, 2014), which leads to younger people using titles of honour for older people. For example, to address older people, Vietnamese people might substitute something like “aunt”, “uncle”, “grandmother” as the equivalent for “you” in English (Nosowitz, 2017). Likewise, older people use personal pronouns such as “son” (young man) or “daughter” (young woman) to interact with younger people in Vietnamese. This occurs in place of the closest equivalent words “I” and “you” in English. This social convention in addressing people by age may lead to younger people’s socially expected reverence and deference to older participants. Consequently, this could potentially lead to younger participants not sharing competing views or opinions with older participants. Moreover, younger participants would be more likely to submit to the views expressed by older participants. This power asymmetry by age is particularly pronounced in the Vietnamese social context. Therefore, it would be more comfortable for research participants to talk to people of their age groups to get the most honest responses of all participants. The focus groups were thus arranged according to age (20-25 years old – 2 groups, 26-30 years old – 1 group, 31-35 years old – 1 group, 36-45 years old – 1 group, 46-55 years old – 1 group). Participants came from diverse occupational backgrounds, such as office workers, students, housewives, traders, doctors, and self-employed. Hence, they brought different perspectives into the discussions. Table 5-1 provides the interviewed participants’ profiles. Table 5-2 and Table 5-3 present the sex composition and age structure of the focus groups respectively.

**Table 5-1: Demographic profiles of the focus group participants**

| Group number | Age Group       | Participant number | Occupation               | Age | Sex    |
|--------------|-----------------|--------------------|--------------------------|-----|--------|
| 1            | 36-45 years old | 1                  | Trader                   | 37  | Female |
|              |                 | 2                  | Tailor                   | 41  | Female |
|              |                 | 3                  | Housewife                | 43  | Female |
|              |                 | 4                  | Trader                   | 38  | Female |
|              |                 | 5                  | Tailor                   | 38  | Female |
|              |                 | 6                  | Housewife                | 43  | Female |
| 2            | 26-35 years old | 7                  | Security staff           | 34  | Male   |
|              |                 | 8                  | Shop owner               | 29  | Male   |
|              |                 | 9                  | Office worker            | 32  | Male   |
|              |                 | 10                 | Housewife                | 35  | Female |
|              |                 | 11                 | Customer service officer | 26  | Female |
|              |                 | 12                 | Accountant               | 27  | Female |

| Group number | Age Group       | Participant number | Occupation               | Age | Sex    |
|--------------|-----------------|--------------------|--------------------------|-----|--------|
| 3            | 20-25 years old | 13                 | College student          | 22  | Male   |
|              |                 | 14                 | College student          | 23  | Male   |
|              |                 | 15                 | IT staff                 | 24  | Male   |
|              |                 | 16                 | College student          | 21  | Male   |
|              |                 | 17                 | Accountant               | 24  | Female |
|              |                 | 18                 | College student          | 24  | Female |
| 4            | 46-54 years old | 19                 | Office worker            | 49  | Female |
|              |                 | 20                 | Housewife                | 46  | Female |
|              |                 | 21                 | Fashion trader           | 49  | Female |
|              |                 | 22                 | Craftsperson             | 52  | Female |
|              |                 | 23                 | Doctor                   | 49  | Female |
|              |                 | 24                 | Housewife                | 50  | Female |
| 5            | 26-30 years old | 25                 | Accountant               | 28  | Female |
|              |                 | 26                 | Sales staff              | 28  | Female |
|              |                 | 27                 | Office worker            | 27  | Female |
|              |                 | 28                 | Housewife                | 29  | Female |
|              |                 | 29                 | Office worker            | 27  | Male   |
|              |                 | 30                 | Office worker            | 26  | Male   |
| 6            | 20-25 years old | 31                 | Fashion trader           | 24  | Male   |
|              |                 | 32                 | Mobile phone sales staff | 24  | Male   |
|              |                 | 33                 | Electric bike trader     | 21  | Male   |
|              |                 | 34                 | Office worker            | 24  | Male   |
|              |                 | 35                 | Bank clerk               | 22  | Female |
|              |                 | 36                 | Accountant               | 24  | Female |
|              |                 |                    |                          | N   | 36     |

**Table 5-2: Sex composition of the focus groups**

| Gender | Number | Per cent |
|--------|--------|----------|
| Male   | 13     | 41.5     |
| Female | 23     | 58.5     |
| Total  | 36     | 100      |

**Table 5-3: Age structure of the focus groups**

| <b>Age groups</b> | <b>Number</b> | <b>Per cent</b> |
|-------------------|---------------|-----------------|
| 21-25 years old   | 12            | 33.3            |
| 26-35 years old   | 12            | 33.3            |
| 36-45 years old   | 6             | 16.7            |
| 46-54 years old   | 6             | 16.7            |
| Total             | 36            | 100             |

Table 5-2 shows that there were more female participants (58.5 per cent) in the focus group interviews, reflecting the consumption practices reported by Nielsen (2016) that there was greater female influence in purchasing household products. Females remain the key decision makers in household grocery shopping; however, the trend is that more men play a buyer role especially when it comes to emergency needs as well as special occasions (Nielsen, 2017). Thus, 58.5 per cent of female and 41.5 per cent of male participants in the focus group interviews might well represent the grocery shopping trends of Vietnamese consumers. In addition, the new demand for convenience among Vietnamese consumers is being led by predominantly time-poor young shoppers in making everyday food and grocery purchases (Nielsen, 2015). As this research was focused on an everyday food product (packaged instant noodles), a majority of participants (66.6 per cent = 33.3 + 33.3) were young adult age groups from 21 to 35 years old (see Table 5-3). Thus, the participant profiles reflected the characteristics of a young population, with the median age from 28 to 31 years old (Central Intelligence Agency US, 2017a). Moreover, the majority (66.7 per cent = 33.3 + 16.7 + 16.7) of interviewed participants were 25-54 years old, reflecting the biggest age group in the Vietnamese population (Central Intelligence Agency US, 2017a). Hence, the sample in phase one of this research accurately reflected the age characteristics of the population as well as the current grocery shopping trends. This ensured that the insights from the group interviews would provide useful input for phase two of this research.

#### **5.4 CONSUMER PERCEPTIONS OF ECO-FRIENDLY PACKAGING**

This section presents a detailed analysis of dimensions of eco-friendly packaging expressed by focus group participants. The participants were encouraged to explain, in their own words, what they perceived to be eco-friendly packaging. In the coding process, attention was paid to expressions used by research participants to describe eco-friendly packaging. A manual approach

was used to analyse qualitative data to identify the concepts emerging from the focus group interviews (see Chapter 4).

First, themes were developed from the opinions research participants shared in the group interviews. Theme development commenced with the generation of a set of potential themes (Boyatzis, 1998). The first list emerged with twenty two (22) concepts which were labelled as items in the analysis process. Each of the items was reviewed carefully by re-examining the context in which participants expressed their understanding of eco-friendly packaging to identify themes. As emphasised by Clarke and Braun (2014), themes do not simply emerge from the data; the researcher does not simply search the data for the themes residing within them. Rather, the researcher makes active, interpretative choices in generating codes and in constructing themes (Clarke and Braun, 2014). Related to thematic analysis, the researcher made interpretative decisions to develop relevant themes which could capture and represent all the ideas expressed by the interviewed participants. The main themes extracted and interpreted were based on Boks and Stevels (2007)'s work that identified three different categories of eco-friendliness characteristics of eco-friendly packaging: governmental, scientific and consumer eco-friendliness. First, governmental eco-friendliness is related to legal requirements as to how to manufacture or recycle materials, which is related to manufacturing technology. Second, scientific greenness considers environmental consequences of packaging throughout the full cycle from manufacturing to disposal. The scientific category is often considered as the most objective to measure the actual environmental impact of a product (Magnier and Cri , 2015). Third, the consumer category addresses consumers' perceptions of eco-friendliness of packaging and their expectations for eco-friendly packaging to be accepted in the market. In this qualitative analysis, packaging eco-friendly characteristics were analysed within the three above-mentioned categories related to manufacturing technology and eco-friendliness of packaging. Reading and re-reading transcripts for coding and thematic analysis were based on the input from focus group participants. Overall, the themes constructed were based on Boks and Stevels (2007)'s work and on the researcher's interpretation of the group interviews.

Next, the codes and coded data were carefully examined to identify similarity and overlap (i.e., patterns of similar semantic meanings) among items. In case of overlap (i.e., items with similar semantic meanings), decisions were made to remove overlapping items to reach a refined list of distinct items that were found to be related to constructed themes. In total, ten overlapping items were removed to create a refined list of twelve items (see Table 5-4). To ensure meaningful interpretation, the themes constructed from focus groups must work together to tell a rich and complex story about the data relating to research questions (Clarke and Braun, 2014). The

researcher ended this phase with a set of candidate themes, with all the relevant coded data collated for each theme, and with a figurative representation of the relationships among the identified themes, i.e., a “thematic map” of the analysis (see Table 5-5 for the themes and Figure 5-1 for the thematic map).

**Table 5-4: Overlapping items**

| Items retained                                    | Items removed due to overlap in semantic meanings         |
|---|---|
| có thể sử dụng lại – reusable                     | có thể sử dụng nhiều lần - can be used many times         |
| không độc - non-toxic                             | không gây độc - non-poisoned                              |
| bao bì vì môi trường – eco-friendly packaging     | bao bì xanh – green packaging                             |
| có thể tái chế - recyclable                       | có thể được tái chế - can be recycled                     |
| bao bì tối thiểu - minimal packaging              | càng ít bao bì càng tốt - as little as possible packaging |
| giá cả phù hợp - affordable prices                | giá cả đừng cao quá - not too high prices                 |
| thiết kế hấp dẫn - attractive design              | thiết kế bắt mắt - eye-catching design                    |
| bao bì dư thừa – excessive packaging              | bao bì quá nhiều – too much packaging                     |
| dễ phân hủy – easily decomposed                   | nhanh tan rã – quickly broken down                        |
| khả năng bảo vệ sản phẩm - protective performance | có thể bảo vệ sản phẩm – ability to protect product       |

The final coding led to the main themes in defining the characteristics of eco-friendly packaging, based on the responses of the focus group participants. The twelve retained items were categorised into three main themes: (1) packaging materials, i.e., characteristics of materials used to manufacture eco-friendly packaging, (2) manufacturing technology, i.e., characteristics of the package manufacturing process and (3) market appeal, i.e., characteristics related to how eco-friendly packaging can appeal to consumers. The three extracted themes are visually presented in a thematic map (see Figure 5-1). Table 5-5 describes the items that were identified, extracted and categorised into the three themes.



**Figure 5-1: Thematic Map - Consumer perceptions of eco-friendly packaging**

**Table 5-5: Consumer Perceptions of Eco-friendly packaging**

| <b>Item</b>   | <b>Theme</b>             |
|---|--------------------------|
| Biodegradable   | Packaging Material       |
| Non-toxic   | Packaging Material       |
| Easily decomposed                                       | Packaging Material       |
| Reusable  | Packaging Material       |
| Recyclable  | Packaging Material       |
| Paper-based   | Packaging Material       |
| Minimal   | Packaging Material       |
| Production should do no harm to the environment         | Manufacturing technology |
| Natural/organic sources of materials used in production | Manufacturing technology |
| Raw materials locally available used in production      | Manufacturing technology |
| Affordable prices                                       | Market appeal            |
| Attractive design                                       | Market appeal            |
| Protective performance                                  | Market appeal            |

The following sections present the three themes of eco-friendly packaging applied for packaged instant noodles in Vietnamese consumers' perceptions, namely, packaging materials (Section 5.4.1), manufacturing technology (Section 5.4.2) and market appeal (Section 5.4.3).

#### **5.4.1 Packaging Materials**

Throughout all six focus group interviews, consumer expectations for packaging materials emerged as a dominant theme. This is consistent with the point raised by Lindh *et al.* (2016) that sustainable packaging development often starts with packaging materials. Similarly, findings from prior studies indicate that consumers strongly rely on material cues to form judgements on packaging sustainability (Lindh, Olsson and Williams, 2016; Lindh *et al.*, 2016; Magnier and Crié, 2015). In the focus groups, participants associated eco-friendly packaging with their expectations for packaging materials and the need to use material resources in a sensible way to satisfy the needs of the current and future generations. Most participants were aware of eco-friendly packaging and perceived that eco-friendly packaging was not abundant in the market as they expected. This was demonstrated in comments such as:

*I've heard a lot about the concept of eco-friendly packaging. It seems that there is not an abundant supply of eco-friendly packaging in the market. We need to think of the environment not only for today but also for the future. (Participant 3, Housewife)*

*I know about eco-friendly packaging. The bad thing is there are not as many eco-friendly packages in the market as I think there should be. (Participant 26, Sales staff)*

Discussions on perceived expectations of packaging materials revealed consumer insights from the environmental perspective. Many participants placed a high priority on easy decomposition at disposal, non-toxic solutions and biodegradability. These expectations reflected consumers' definitions of eco-friendly packaging, such as:

*I think eco-friendly packaging should be biodegradable. Plastic bags are very difficult to decompose, well, it might take years. (Participant 17, Accountant)*

*To me, eco-friendly packaging is the one which (1) can be easily treated at disposal, (2) does not pollute the environment and (3) is biodegradable. (Participant 22, Craftsperson)*

*To me, the most important is that eco-friendly packaging should be safe and non-toxic to humans. If packaging incorporates artificial colours, it will do harm to our health. (Participant 1, Trader)*

A few participants were concerned about excessive packaging which could leave more packaging for a long time in the environment and thus might do more harm to the environment. Minimal packaging, therefore, was another attribute of eco-friendly packaging raised by the participants. For example:

*Time for eco-friendly packaging to get decomposed should be short. So we need as little packaging as possible. (Participant 14, College student)*

*Too much packaging can get us to throw out more waste and do more harm to the environment. (Participant 21, Fashion trader)*

Recyclability was another criterion which participants perceived important to eco-friendly packaging. Many participants thought that recyclability made packaging less harmful to the

environment because this attribute helped reduce package production. Some participants mentioned that they collected used packages to sell to trash collectors, assuming that these used packages could be recycled for the same or different usage purposes. This point was in line with Lindh *et al.* (2016)'s finding that in packaging, consumer attention is often focused on the package and its recyclability. Young (2008) also found that consumers across developed and developing countries (the UK, the US, Germany and China) associated eco-friendly packaging most with recycling. This finding was reflected in the group interviews, such as:

*To me, eco-friendly packaging should be not only non-toxic, easily decomposed but also recyclable. (Participant 32, Mobile phone sales staff)*

The concept of recycling is not new to the Vietnamese people, especially to urban residents. For instance, during the years from 2006 to 2009, the 3R (reduce, reuse, recycle) initiative funded by the Japan International Cooperation Agency (2009) was implemented by Hanoi City Urban Environmental Company. This might be the main reason why the participants mentioned recyclability as one criterion for packaging materials to be eco-friendly, although they felt the government lacked the system to support recycling.

Discussions on materials that made up eco-friendly packaging went further to reusability of packaging materials. Many participants emphasised that packaging materials should also be reusable. The characteristic of reusability could be understood in two ways: some are reused in their entirety as packages, and parts can be developed for a second use (Lindh *et al.*, 2016). In terms of reusable packaging, participants might assume reusability of the packaging as being able to be used for another purpose, such as reproduction or construction. One overall comment was made by the participants to define eco-friendly packaging as follows:

*I share the same views with other people here. First, eco-friendly packaging must be easily biodegradable. Second, such packaging must be reusable (used several times or used for reproduction). Third, it must not contain toxic substances. (Participant 35, Bank clerk)*

These consumer insights reflected some common perceptions of consumers in other countries about eco-friendly packaging. As reported by Lewis and Stanley (2012), market research in the UK revealed that consumers' perceptions of eco-friendly packaging reflect packaging disposal issues, including biodegradability, recyclability and reusability. Magnier and Crié (2015) also found that most consumers associate eco-friendly packaging with perceived recyclability and biodegradability.

Likewise, for South African consumers, the most commonly associated benefits with eco-friendly packaging are recyclability and reusability (Scott and Vigar-Ellis, 2014). These benefits helped define eco-friendly packaging from the perspectives of focus group participants.

In terms of what types of packaging materials perceived to be eco-friendly, many participants cited paper-based packaging. This point was in line with the finding by Lewis and Stanley (2012) that paper bags and cardboard boxes were rated by consumers as the most environmentally friendly. Some examples from the focus group interviews are listed below:

*The first and most important thing about eco-friendly packaging is that it should be made from paper. (Participant 36, Accountant)*

*I share the same view: First thing comes to my mind about eco-friendly packaging is that it is made from paper. (Participant 33, Electric bike trader)*

Most other participants also agreed that paper-based packaging was the most eco-friendly. The main reason they raised was that paper was more easily decomposed, compared to other types of packaging materials. As a consequence, to their knowledge, paper-based packaging might cause fewer negative environmental impacts. Some participants gave specific examples about local brands in the market to illustrate that paper packaging was the most eco-friendly. For example:

*To us, paper packaging is the most eco-friendly because it is easily decomposed while leaving less negative impact on the environment. Production costs of paper packaging are also lower. Paper is softer than plastic, so it is decomposed in the soil more easily. (Participant 19, Office worker)*

*The package of Miliket instant noodles is made from paper. I think it is the most eco-friendly package in the market. (Participant 24, Housewife) (Miliket is a brand of packaged instant noodles in the Vietnamese market).*

Consumers' perception of paper as the most eco-friendly packaging material in the group interviews was consistent with what was found in earlier studies. For example, Allegra, Zarba and Muratore (2012) found that consumers regard paper-based packaging as one of the most eco-friendly materials. Similarly, Lindh, Olsson and Williams (2016) reported that 79 per cent of consumers consider paper-based packaging materials as the ones with the least negative environmental impact

and therefore the most environmentally advantageous. Steenis *et al.* (2017) also found that consumers judge paper-based packaging as more sustainable than plastic packaging. Moreover, consumers' environmental awareness is driving the demand of paper packaging for food products because it is both economically and environmentally appealing (Furlong, 2015). That helps explain why most participants considered paper packages as the most eco-friendly.

Some participants in the interviews showed preference for plastic packaging, though they were well aware of its adverse environmental impacts. One participant (participant 14, college student) said that he preferred plastic packaging despite knowing plastic was not good for the environment. A few participants even thought that plastic packaging might be eco-friendly, for example:

*I still wonder if plastic packaging is eco-friendly. Maybe it is. (Participant 5, Tailor)*

Some participants even shared that they liked plastic packaging the most. These consumer insights showed that there were still people who preferred plastic packaging for food products. This triggered the question why plastic packaging was more appealing to some consumers. Several interviewed participants shared positive feedback about the market appealing characteristics of plastic packaging. Many participants indicated the likelihood of choosing plastic packaging over other types of packaging because of its attractive colourful graphic design and its protective performance. For example:

*I choose plastic packaging. It is eye-catching and attractive with colourful images. (Participant 26, Sale staff)*

*I agree. Paper packages look boring. Plastic packages have more colourful images and so are more appealing to me. (Participant 28, Housewife)*

*Paper packages cannot protect the product as well as plastic packages. For example, instant noodles in a paper package become wet after a short period of time while instant noodle in a plastic bag can last longer. (Participant 19, Office worker)*

*Plastic bags are more colourful and keep instant noodles longer. (Participant 24, Housewife)*

*Plastic packaging provides better protection. I might consider that. (Participant 26, Sales staff)*

*I often buy plastic packages as they keep instant noodles crispy for longer time. (Participant 36, Accountant)*

These quotations indicate that there are still consumers who make purchase decisions based on the appealing characteristics of the package such as colour and protective performance. This could trigger a need for research into the use of packaging for food products and its effects on consumers' purchase preferences, which was not covered in this research. In addition, the colourful design and the protective performance of packaging could be a topic of further research to gain a fuller understanding of how consumers evaluate packaged foods. Section 5.4.3 discusses more on the market appealing characteristics of packaging as emerged from the focus groups in phase one of this research.

In regard to consumers' ability to distinguish between eco-friendly packaging and conventional ones based on labelling, most participants seemed to have difficulties. The participants were shown different environmental symbols on labelling of all types of packaging for instant noodles that were available in the Vietnamese market at the time of the focus groups. Some examples of symbols shown were the recycling symbol, paper symbol, green dot symbol, and recycling plastic symbol. Most participants did not understand the meanings of the environmental symbols used on labelling. This is quite comparable with a study conducted in Ireland by Broderick, Bouchier-Hayes and Larkin (2015). Irish consumers' understanding of packaging has been fluctuating over time, with 60.7 per cent of people having difficulty understanding environmental labels in 2009, 59.2 per cent in 2011 and 61.4 per cent in 2013 (Broderick, Bouchier-Hayes and Larkin, 2015). The following comments were extracted from the group interviews:

*I did notice there were environmental symbols on labelling, but it was a long time ago and now I have forgotten their meanings. (Participant 1, Trader)*

*I notice the environmental symbols on packaging but I do not understand them. (Participant 21, Fashion trader)*

*I do not notice environmental symbols when buying packaged instant noodles. Even if I notice them, I do not understand what they mean. (Participant 30, Office worker)*

*Recently, I have heard a lot about eco-friendly packaging but I do not really pay any attention to environmental symbols on labelling. (Participant 5, Tailor)*

The lack of attention paid by consumers to information provided on the label in the purchase process was shown clearly in the focus groups. This is similar to Mancini *et al.* (2017)'s finding that there remains a problem when the consumer gives little attention to environmental labels on packaging, in spite of the appearance of consumer attention to the environment. This issue could be caused by application of rules of thumb in purchase decisions. As stated by Mancini *et al.* (2017), this might be because consumers have an overload of information or because they tend to make decisions based on heuristics, such as brand or price as a surrogate indicator for good quality.

The fact that all participants showed confusion as to how to understand environmental labels corresponds with some previous studies on the same topic. For instance, earlier research has shown that consumers are confused with the various labels applied to depict eco-friendly packaging (Juwaheer, Pudaruth and Noyaux, 2012; Pickett-Baker and Ozaki, 2008). Consumers still lack the knowledge of eco-labels to exercise environmentally conscious purchase decisions, especially at the retail point of purchase (Thøgersen, 2000, 2005). Scott and Vigar-Ellis (2014) also found that consumers in South Africa were not sure how to read labels to identify eco-friendly packaging. This might be because the average consumer does not have sufficient knowledge of the labelling system. Furthermore, the lack of unified global standards in labelling might cause consumer confusion (Harvey, 2014). Therefore, this problem is common to consumers in many markets, not only to Vietnamese consumers. This implies that many consumers make decisions based on inaccurate knowledge and that subjective knowledge may be higher than objective knowledge. Accordingly, this research was focused on measuring subjective knowledge (i.e., what consumers think they know about eco-friendly packaging) and not objective knowledge (i.e., the facts consumers know about eco-friendly packaging) (see Section 3.2.4).

In summary, the participants perceived eco-friendly packaging as being biodegradable, recyclable, reusable and non-toxic. A majority of the participants rated paper-based packaging as the most eco-friendly. They also thought that plastic packaging was less eco-friendly. The reasons why consumers perceived packages made from paper as superior to plastic in terms of eco-friendliness were not covered by this research. In this research, some participants were found to show preference for plastic packaging even though they were aware of its adverse environmental impacts.

The reason why they preferred plastic packaging is discussed further in Section 5.4.3. In addition, although participants could express what they perceived to be eco-friendly packaging, many of them struggled to tell the difference between more or less eco-friendly packaging by reading the labels on the product package.

#### **5.4.2 Manufacturing Technology**

Manufacturing technology emerged as the second theme relating to eco-friendly packaging in the focus groups. In the participants' view, eco-friendly packaging should come from an eco-friendly manufacturing process, and from the use of natural and organic sources of raw materials. There were opinions about sources of materials used to produce packaging that could reduce negative impacts on the environment, for instance:

*Eco-friendly packaging should come from the choice of raw materials: materials used to produce eco-friendly packaging must be environmentally friendly. (Participant 29, Office worker)*

*I agree that packaging materials must be environmentally friendly. So we should use more natural sources of materials. (Participant 26, Sales staff)*

*Packaging materials should have natural sources such as paper, banana leaves or organic materials. The more natural materials are used to produce packaging, the more likely such packaging becomes biodegradable and environmentally friendly. (Participant 17, Accountant)*

*Packaging manufacturers should do research on materials which can turn their products into environmentally friendly. (Participant 22, Craftsperson)*

In such statements, the participants raised the point of choosing raw materials as inputs of manufacturing activities. These concerns about raw materials being used for package manufacturing correlate to what was stated in Palombini, Cidade and De Jacques (2017) that raw packaging materials are often associated with environmental issues. Furthermore, the focus group participants desired opportunities for the manufacturing process to be improved in order to minimise negative environmental impacts. Most participants insisted that the process to manufacture packaging should

not pollute the environment. Many participants underlined the need to use an environmentally friendly manufacturing process, such as:

*The manufacturing process must be simplified, to reduce cost and minimise adverse consequences to the environment. (Participant 26, Sales staff)*

The above quotation showed that consumers were aware of the importance of the package manufacturing process. Some participants stated that manufacturing activities could be harmful to the environment. This concern coincided with the viewpoint raised by Palombini, Cidade and De Jacques (2017) that regardless of the volume of raw materials and energy used in the production process, packaging manufacturers do not always consider environmental issues. In the focus group interviews, many participants agreed that they were concerned about the manufacturing process and questioned what happened in the process of producing packaging. Therefore, they expressed a desire not to suffer any negative environmental impacts from the manufacturing process. This consumer desire was found to be consistent with what was reported in Scott and Vigar-Ellis (2014) that consumers expected packaging manufacturers to adopt an eco-friendly manufacturing process. There were many expressions in the focus groups about this theme and the following opinion from one participant well summarised consumers' perceived attributes of the manufacturing process:

*In my opinion, the three most important things about eco-friendly packaging are: (1) use materials which take shorter time for decomposition, (2) simplify the manufacturing process to not pollute the environment and (3) make more use of natural and organic materials such as paper, bamboo and banana leaves. (Participant 17, Accountant)*

In the absence of expert knowledge on the manufacturing process, the participants simply delegated environmental responsibilities to manufacturers and policy makers. There was not much emphasis on consumer responsibility. Most participants said that it was the responsibility of manufacturers and the government to take action, such as:

*Frankly speaking, in Vietnam, both manufacturers and consumers have not yet had adequate concern on the manufacturing process. Of course, manufacturers have to take the main responsibility. (Participant 1, Trader)*

*The most important thing is how many manufacturers actually respond and take some actions towards environmental protection. How can consumers do anything about it? In foreign*

*countries, the governmental authorities are very strict: they impose punishment in case manufacturers violate environmental regulations. This forces manufacturers to become more focused on environmental issues. This doesn't happen in Vietnam. We are just consumers and have no clue what is going on in the manufacturing process. (Participant 2, Tailor)*

*In my own opinion, manufacturers should act towards environmental protection first by introducing more eco-friendly packaging to the market. As consumers, we can support them in our purchase decisions. (Participant 24, Housewife)*

These consumer opinions expressed the belief that the government did not adequately address consumer concerns. They also believed that manufacturers were not doing enough to comply with environmental legislations relating to manufacturing. The focus group participants showed distrust and disappointment about production practices in the country. They did not think the authorities were reinforcing environmental compliance in terms of manufacturing activities. While sustainable consumption and production has become the most pressing challenge among emerging sustainable development goals (Tseng, Chiu and Liang, 2017), consumer distrust in the government's role provides implications for governance issues, which were not covered in this research.

The focus groups revealed that consumers were concerned about the manufacturing process for packaging and wanted to have eco-friendly technology. This supports De Medeiros and Ribeiro (2017)'s finding that greener production technology was the most frequently mentioned attribute when consumers considered buying green products. However, the participants in phase one of this research expressed quite general expectations about eco-friendly manufacturing technology. They only used general terms such as advanced and new technology, for example:

*Manufacturers have to apply advanced technology for new packaging. (Participant 15, IT staff)*

*I think manufacturers should stop producing plastic and use new manufacturing technology. (Participant 16, College student)*

Consumer understanding of manufacturing technology seemed to be limited in the focus group interviews and they struggled to share what they knew about technology. As pointed out by Esbjerg *et al.* (2016), one of the challenges to the acceptance of new products based on new technologies is consumers' limited understanding of technologies. When it comes to packaged products, the choice

of a more eco-friendly package involves several aspects, in which the manufacture process of different packaging types may vary (Almeida *et al.*, 2017). Furthermore, it would be difficult to account for the use of energy and materials to estimate which one is the least harmful to the environment (Almeida *et al.*, 2017). The technological aspects of manufacturing might be beyond an average consumer's knowledge. Hence, it can be assumed that not many consumers can understand manufacturing technology. Consumers' limited understanding of manufacturing technology is, therefore, not unique to the Vietnamese market.

Overall, consumers expected that eco-friendly packaging should come from an eco-friendly manufacturing process, using new and advanced technology. There was limited discussion on the manufacturing technology although there were vocally strong opinions about what was expected by the participants for an eco-friendly manufacturing process. This could be because the participants had limited knowledge of packaging technology. Moreover, technological terms were not always easy to understand for consumers. However, consumer expectation regarding manufacturing technology somehow reflected what consumers generally expected of eco-friendly packaging. In short, there were consumer expectations for eco-friendly packaging not only at consumption and disposal activities but also during the manufacturing process.

### **5.4.3 Market Appeal**

The next theme relating to consumer considerations of eco-friendly packaging in the focus groups was about market appeal. In this research, market appeal is defined as the ability of a packaged food product to attract consumers' attention at point of purchase. Many participants said that they would often base their packaged instant noodle decisions on the market appealing characteristics of the product package. To help the participants evaluate the market appeal of common types of packaging used for instant noodles, twenty real products were shown in the focus groups for their inspection. Since this research was focused on bag-type instant noodles, only bag types were brought into the interviews. In the Vietnamese market as of the dates of focus groups, there were mainly two bag types made from paper and plastic. In total, there were ten paper packets and ten plastic packets of instant noodles used in the focus groups. Examples of the products used in the focus groups are shown below for illustration:

**Table 5-6: Examples of plastic and paper packages of instant noodles**

| Plastic packages  | Paper packages   |
|---|--|
|  <p>Hao Hao instant noodle package</p>   |  <p>Vi Huong instant noodle package</p>   |
|  <p>Gau Do instant noodle package</p> |  <p>Miliket instant noodle package</p> |

Source of images: Nguyen, Anh Thu, 2018. Examples of packaged instant noodles in Vietnam 2018. JPEG files.

In the participants’ perceptions, product packages should be appealing in the marketplace. Most participants said that regardless of whether packaging was eco-friendly or not, it should be attractively designed and affordable. Many participants emphasised that they made packaged instant noodle buying decisions based on the physically attractive appearance of packaging. Colour and images were found to be used on packaging in order to attract consumer attention, and proved to be effective, such as:

*Many times I cannot refuse an eye-catching colourful packet of instant noodles, so I finally come back to the shelf and pick up one packet. (Participant 1, Trader)*

*We are often attracted first by a colourful graphic design. (Participant 2, Shop owner)*

*A nice eye-catching graphic design looks more appealing. (Participant 7, Security staff)*

*Packaging should be clean and cool. Cool means colourful. I like bright colours on packaging. (Participant 28, Housewife)*

*Nice design of graphics on packaging will strongly influence my purchase decisions. (Participant 19, Office worker)*

*The colourful graphic images on the package absolutely influence my product choice. (Participant 29, Office worker)*

Attractive design of packaging in the form of graphic images was highly favoured in all focus groups. This observation contradicted what was reported in Martinho *et al.* (2015) that packaging design is not an important factor to the consumer. However, prior research found that aesthetically appealing packaging designs can increase consumer desire for a product (Norman, 2005), encourage willingness to pay a premium (Bloch *et al.*, 2003), increase preference over well-known brands (Reimann *et al.*, 2010), and enable more direct comparison of alternatives as well as attract the consumer's attention (Venter *et al.*, 2011). Moreover, the participants' preference for attractive graphic designs reflected the finding in Magnier and Crié (2015) about the importance of the aesthetics of packaging to consumer purchase decisions. This was also consistent with Mueller, Lockshin and Louviere (2010) who found that a graphic label format was the most important attribute after price. Similarly, Celhay and Trinquocoste (2015) and Vilnai-Yavetz and Koren (2013) reported that graphic formats had positive impacts on package choice and purchase intention. Tait *et al.* (2016) also found great effects of graphic images on packaging on consumer choice of packaged food products. These findings were consistent in acknowledging the effects of graphic images on consumer preferences for colourful packages.

One point to note from the focus groups is that the participants hardly mentioned that colourful packages could be environmentally harmful because of the ink used to create attractive graphical designs. The only exception was participant 1, a trader, who stated that packaging could harm human health if it incorporated artificial colours. However, this participant did not really talk about how colourful packages could be environmentally more harmful. No other participants expressed

any opinions about this topic. The focus group participants might not be knowledgeable about the technical and chemical aspects of colourful graphic designs for packaging. Furthermore, in practice, consumers often use sensory discrimination to evaluate a food package. Hence, sight could be one of the most important factors affecting how consumers make decisions when buying a packaged food product. There is evidence that a consumer's sensory experiences are influenced by the colour of a package (Spence and Velasco, 2018). Also, there is evidence that attractive graphical images on packaging can influence consumer purchase intention (Simmonds and Spence, 2017). This may raise a question relating to how consumers make trade-offs between different product attributes such as aesthetical packaging, nutrition and price of a packaged food product. This question is not within the current research scope and is acknowledged as a research limitation (see Chapter 9).

Related to the market appeal of eco-friendly packaging, the participants expressed dissatisfaction about the aesthetically poor appearance of biodegradable and paper packages. This is similar to Magnier and Crié (2015)'s finding that eco-friendly packaging is often perceived as less appealing by consumers, because of its simplicity and lack of colours. Many participants made negative comments on the lack of attractiveness of biodegradable and paper packaging, such as:

*In the eyes of Vietnamese consumers, a biodegradable package is not attractive at all. (Participant 22, Craftsperson)*

*I do not like paper packages because they are so plain and ugly-looking to me. A paper package does not make the food product look good at all. (Participant 2, Tailor)*

The participants shared more positive feedback about the market appealing characteristics of plastic packaging. Many participants indicated the likelihood of choosing plastic packaging over other types of packaging, because of its abundant availability in the market and its attractive colourful graphic design. For example:

*80 to 90 per cent of the Vietnamese people buy in the same way: Plastic packaging for instant noodles is so readily available and we buy them. (Participant 21, Fashion trader)*

*I buy plastic packages of instant noodles. They are eye-catching and attractive with colourful images. (Participant 26, Sale staff)*

In addition to attractive graphic design, many participants highlighted brand name as another important attribute which might affect their decisions. To most participants, a well-known brand indicated quality and thus was one of their evaluative criteria. In their opinion, a good graphic design of the package combined with a well-known brand was influential at point of purchase, for instance:

*Eco-friendly packaging such as paper packaging is boring because of dull colours and poor graphic images. At point of purchase, a nice graphic design of package plus a well-known brand will affect our buying decisions. (Participant 17, Accountant)*

When asked about the most well-known brand in the market, most participants mentioned Hao Hao. Hao Hao is a brand of Vina Acecook, a Japanese-owned instant noodle company operating in Vietnam. Being the market leading brand, Hao Hao occupies roughly twenty five (25) per cent of the market share (Vietnam News, 2016b) and contributes 60 per cent of total revenues to Vina Acecook (Vietnam Net, 2017b). It is the number one brand in the middle market segment and its brand recognition is very high at 100 per cent to Vietnamese consumers (Vietnam Net, 2017b). In the focus groups, all of the participants knew Hao Hao. To them, a well-known brand was more appealing at point of purchase. For example:

*In most of my grocery shopping trips, I often buy Hao Hao instant noodles. (Participant 10, Housewife)*

*Me too, I choose Hao Hao products. My mother often buys a full case of Hao Hao instant noodles. (A case contains 48 packets of instant noodles). (Participant 13, College student)*

*When it comes to a famous instant noodle brand, we will say: Hao Hao. It might be due to Hao Hao's long presence in the market that makes consumers recall the brand in just a second. (Participant 17, Accountant)*

*Of course, I buy Hao Hao instant noodles and I buy a lot. For other brands, I only buy two packets on a trial basis. (Participant 19, Office worker)*

*I have bought Hao Hao instant noodles for many years and still do. (Participant 21, Fashion trader)*

This consumer insight was found to be similar with what was reported in Schuitemai and de Groot (2015)'s that there is a trade-off between the influences of product attributes on purchase decisions. That is, consumers tend to focus on egoistic product attributes first (i.e., to fulfil self-serving motives such as a nice design and a well-known brand). Thus, green product attributes may be less important. These product attributes – a nice design and a well-known brand – were also emphasised by many focus group participants.

Another issue noted in the focus groups is that most participants raised concerns about the protective performance of packaging. Many of them stressed that packaging should be able to protect the product and that this attribute might also influence their purchase intentions. This point of view supported the concept of sustainable packaging in Verghese and Lewis (2007) that packaging materials should be carefully selected to provide sufficient protection to the product while maintaining the effective use of materials with the lowest environmental impact. As pointed out by Lindh *et al.* (2016), the important packaging function is to protect, which was also reflected in many participants' expectations for eco-friendly packaging. While agreeing that paper packaging could be the most eco-friendly, most participants commented that it was not as effective in protecting the quality of instant noodles, compared to plastic packaging, for example:

*I do not think a paper package can protect the product. Paper packaging is easily torn out and damages the product's quality. Plastic packaging provides better protection. I might consider that. (Participant 26, Sales staff)*

*I think paper packaging can easily get wet and cannot protect instant noodles. So I do not want to buy a paper package and prefer a plastic one. (Participant 18, College student)*

This consumer evaluation of the protective performance of packaging was on line with what was reported in prior studies. For example, consumers perceived that eco-friendly packaging might not protect the product as well as a conventional one and therefore degrade products' properties (Magnier and Crié, 2015). Moreover, Luchs *et al.* (2010) found that environmental benefits would not always positively influence consumers' perceived values of products. In other words, the extent to which environmental consideration increases consumer desirability may depend on the benefits consumers most desire when evaluating a packaged food product to buy. In practice, high functionality of the package is one of the important benefits considered by consumers (Martinho *et al.*, 2015). In this research, it was demonstrated by focus group participants that an eco-friendly package should protect the product as well as a conventional one.

As the discussions evolved, the participants raised opinions about the price of eco-friendly packaging. Most participants were very vocal that eco-friendly packaging must be economically viable and reasonably priced. From their perspectives, eco-friendly packaging, which should satisfy all of their requirements, was perceived to be more expensive and to lead to increased consumer costs. To most participants, the decision to buy instant noodles packaged environmentally was an economic one driven by affordability.

*At the point of purchase, price will decide. The average price should be 3,000 VND per packet (0.13 USD) (Participant 20, Housewife)*

*I will vote for eco-friendly packaging if it costs the same price (no more than 3,000 VND = 0.13 USD) and it is safer for humans and the environment. (Participant 13, College student)*

*For me, the price is very important. The average market price is only from 2,500 to 3,000 VND (0.11 to 0.13 USD) for a packaged instant noodle product. No matter how attractive the packaging is, the price should be affordable to encourage a trial. (Participant 15, IT staff)*

Price concern was found in Magnier and Crié (2015) who reported that eco-friendly packaging is perceived by consumers to be more expensive and as a consequence, many consumers do not express the willingness to pay. Similarly, Martinho *et al.* (2015) found that low price is one of the most important aspects in consumers' consideration. However, consumers in South Africa seemed to have long-term perspectives as they believed that eco-friendly packaging would save money because it was reusable (Scott and Vigar-Ellis, 2014). In contrast, price concern for eco-friendly packaging signifies short-term consumer perspectives in Vietnam.

In terms of acceptable market price, the participants voluntarily shared that the common price for a packaged instant noodle product was 3,000 VND (0.13 USD). Consumers' acceptable market price (i.e., 3,000 VND – 0.13 USD) was considered as a reference price point for marketers. It was noted that quite a few participants expressed willingness to pay a premium for instant noodles packaged environmentally. Yet, some participants said that they were ready to pay only if they were satisfied with the market appealing characteristics of the package. This consumer insight is also found in an extant study by Krystallis and Chryssohoidis (2005) that consumers will not be willing to pay any premiums until they are entirely convinced that the product satisfies the criteria they use for

evaluation at point of purchase. In this research, a well-known brand, an attractive design and the protective performance of a package were referred to as common consumer criteria when buying a packaged instant noodle product. However, how consumers make trade-off decisions when it comes to buying eco-friendly packaged instant noodles was beyond the research scope. This could be considered as a research limitation.

In summary, the focus group participants shared the view that market appeal would include price, brand and packaging (design and protective performance) at point of purchase. This viewpoint was similar to what was reported by Grunert, Hieke and Wills (2014) that product attributes such as price, brand and packaging can produce influences on choice behaviour. As this research was focused only on consumers' purchase intention for packaged instant noodles with regard to eco-friendly packaging, brand image or price was not explored within the research scope.

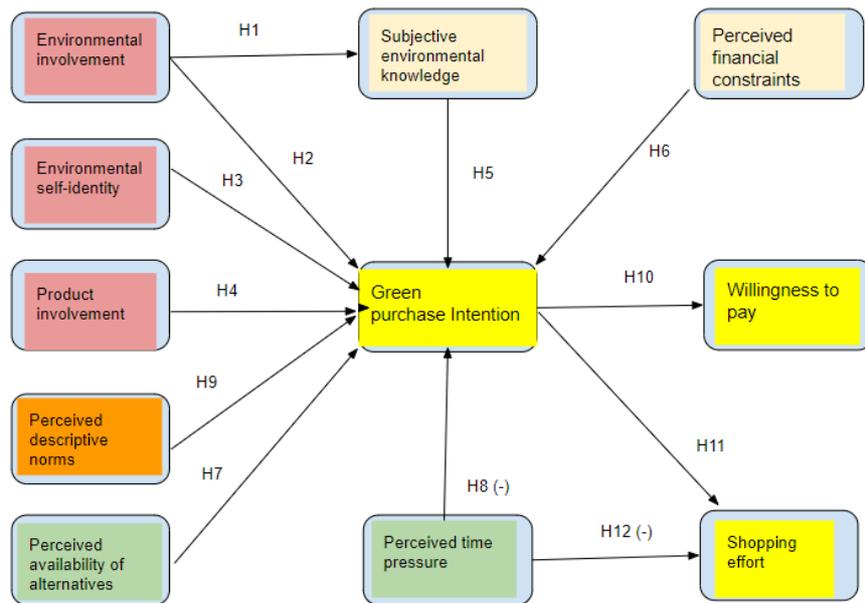
#### **5.4.4 Summary of Findings about Consumer Perceptions of Eco-friendly packaging**

Overall, the findings from phase one showed that consumers in Vietnam perceived eco-friendly packaging in terms of three dimensions, namely, packaging materials, manufacturing technology and market appeal. It was evident from the focus group interviews that the participants found it easier to discuss the themes related to packaging materials and market appeal than the theme related to manufacturing technology. Still, there were some strong opinions about the adverse impacts of the package manufacturing process on the environment, indicating some level of importance consumers attached to manufacturing technology. Moreover, the participants shared their expectations for eco-friendly packaging in terms of market appeal related to attractive graphic design. Most participants used their subjective evaluation of packaging materials to determine eco-friendly packaging. Their understanding of eco-friendly packaging was more related to after-consumption (such as biodegradability, recyclability, reusability), and to market appeal (such as aesthetics, protective performance and price). Knowledge of environmental labels to identify between more or less eco-friendly types of packaging was shown to be limited. These consumer insights could be useful input for packaging managers and marketers, which are acknowledged in Chapter 9. In addition, it is noted that the three dimensions of eco-friendly packaging (packaging materials, manufacturing technology and market appeal) as emerged through the focus groups were used to answer research question one. The dimensions of eco-friendly packaging were not integrated into the research model for investigations within the current research scope. The investigations based on the modelling were conducted to answer RQ2, RQ3, RQ4 and RQ5 (see Section 4.2, Chapter 4, Chapter 7, Chapter 8 and Chapter 9).

## **5.5 ANTECEDENTS OF GREEN PURCHASE INTENTION**

This section presents the findings from the focus groups relating to antecedent factors affecting green purchase intention for instant noodles in eco-friendly packaging. In the qualitative data analysis, a deductive approach was followed, with the purpose to validate and revise the conceptual research model developed for quantitative research in phase two. In this research, literature review was undertaken to provide a direction and foundation to build the preliminary conceptual model of green purchase intention. In line with this, a deductive content analysis was conducted, with the coding process beginning with a list of concepts borrowed from the disciplinary literature. The list of pre-determined concepts included the following variables: environmental self-identity, environmental involvement, product involvement, subjective environmental knowledge, perceived financial constraints, perceived availability of alternatives, perceived time pressure and perceived descriptive norms. This deductive process validated all antecedent variables except for perceived financial constraints. In addition, the dependent variables were identified as green purchase intention, willingness to pay and shopping effort.

The subsequent sections provide a discussion on the validation of the factors included in the conceptual research model - reproduced (see Figure 5-2), following the direction of motivation, ability and opportunity of the MAO approach. Antecedents relating to consumer motivation, namely, environmental self-identity, environmental involvement and product involvement, are presented in Section 5.5.1. Section 5.5.2 discusses the validation and invalidation of antecedents relating to ability, which are subjective environmental knowledge and perceived financial constraints. Section 5.5.3 provides a discussion on validating antecedents relating to opportunity: availability of alternatives and perceived time pressure. Section 5.5.4 presents the validation of perceived descriptive norms.



**Figure 5-2: The Preliminary Conceptual Research Model –Reproduced from Chapter 3**

### 5.5.1 Environmental Self-identity, Environmental Involvement, Product Involvement

The content analysis identified and validated three factors relating to consumer motivation towards green purchase activities, namely, environmental self-identity, environmental involvement and product involvement. First, environmental self-identity emerged from multiple readings of the focus group transcripts, hand-coding and deductive logic methods. Explicit statements that the participants made about their self-identity reflected their self-image from an eco-friendly perspective. Many participants associated their self-identity as an eco-friendly person with environmental behaviours: no littering, no smoking, saving energy and water, and careful purchasing. Careful purchasing is similar to the concepts of responsible consumption (Fisk, 1974) and frugal consumption (Pepper *et al.*, 2009), which reflect the growing importance that consumers place on being an environmentally conscious consumer. For instance:

*I am very environmentally conscious. I choose and buy products carefully because I care about the environment. (Participant 36, Accountant)*

Being environmentally conscious might influence the way in which consumers purchase, use and dispose of products and packaging. Recycling and reuse were some environmental behaviours that interviewed participants strongly associated with green consumption behaviour. Most participants considered themselves environmentally conscious by doing daily chores to protect the environment.

Many participants cited examples of their behaviours to reflect their environmental self-identities, including 3R (reduce, reuse and recycle) activities, such as:

*I do a lot of small things to protect the environment. For example, I turn lights off when not in use. I do not litter. I do not smoke. (Participant 34, Office worker)*

*I am an environmentalist. I always remind my family members to dispose of waste at a designated time to protect the environment. (Participant 31, Fashion trader)*

*I am environmentally friendly. I do not litter. I remind my family members to switch off electronic equipment when not in use. I also save clean water. (Participant 28, Housewife)*

*I love the environment. I do more environmentally friendly actions. For example, I reuse plastic bottles several times to reduce waste. I sell used packaging for recycling. (Participant 18, College student)*

Only a few participants did not describe themselves as environmentally conscious. For instance, one participant said: *“I am not as environmentally friendly as other people here. I still buy plastic bags. I do not think that my use of plastic bags is too much to worry about”* (Participant 8, Shop owner). This indicated that there might be different consumer segments in terms of environment self-identity. Hence, it reinforced the research objective to explore the association that environmental self-identity may have with green purchase intention.

To summarise, the group interviews validated that environmental self-identity could be included for further investigations in phase two. As most participants expressed different levels of environmental consciousness, it triggered the need to explore if it would influence green purchase intention. Hence, it was worthwhile to quantitatively examine the effects (if any) that environmental self-identity would have on purchase intention relating to instant noodles in eco-friendly packaging in phase two.

Second, environmental involvement was expressively evident in the focus group interviews. A majority of participants expressed their levels of environmental involvement in thinking and action. Most participants were not only conscious that their consumption would cause environmental problems but also acted to reduce their environmental impacts. This phenomenon was

conceptualised as environmental involvement (Matthes, Wonneberger and Schmuck, 2014). For the participants, the environment was linked with human health and living conditions, such as:

*I believe the environment is very important to humans. Unhealthy environment such as polluted air and contaminated food affects human health. (Participant 11, Customer service officer)*

*Environment is everything surrounding us. If the environment is polluted, we will die young, so I am very concerned about the environment. (Participant 33, Electric bike trader)*

Specific behaviours that the participants related to environmental involvement were the purchase and usage of eco-friendly grocery bags. Some participants also mentioned that they reduced plastic bag consumption, citing the fact that they accessed the idea from media. For example:

*Recently the term “environment” has become a buzz word on media. We have seen some changes in human behaviours to reduce environmental impacts. When doing grocery shopping, I tend to use reusable grocery bags. I also try to use fewer plastic bags. (Participant 26, Sales staff)*

*There have been some social campaigns about reducing plastic consumption. We are more concerned about environmental issues. My family members remind each other to reduce using plastic bags. (Participant 5, Tailor)*

The discussion revealed that social awareness campaigns run by the government (see Chapter 1) might have produced some social effects among Vietnamese consumers. This might lead to a higher level of awareness of environmental issues in the country and in turn might cause some changes in consumption practices.

Apart from concerns for the current environmental issues, some participants did show serious concerns for future generations. They said that this generation was not doing enough to protect the environment, especially in terms of waste disposal. A few participants considered issues of overusing natural resources as their main environmental concerns. For instance:

*The older generation did not leave behind them as much waste as we have been leaving to our younger generations. We are not doing enough for the environment. (Participant 23, Doctor)*

*We all know overuse of natural resources will harm the environment but still do. We have to act more environmentally. (Participant 19, Office worker)*

The discussion relating to environmental involvement did not receive many opinions from three young participants aged 20-25 years old. It seemed that these three participants were not highly environmentally involved because they did not think they should be responsible for environmental issues. However, these three participants occupied only a small fraction of the focus groups. Hence, environmental involvement was a heated discussion among almost all participants.

In short, the focus groups revealed that many participants were highly involved with the environment, not only in purchasing but also in daily activities, whereas very few expressed low levels of environmental involvement. This finding is in line with what was found in recent studies by Yadav and Pathak (2016) and Prakash and Pathak (2017) that consumers showed different levels of environmental concerns and thus different levels of green purchase intentions. Therefore, it was determined to incorporate environmental involvement into the research model for further testing.

Third, in terms of product involvement, participants showed different levels from very low to very high. Some participants bought the product but did not show high level of involvement with the product, reflected in the low purchase volume and frequency. One participant shared with the focus group as follows:

*I don't eat much instant noodle. I often go to the supermarket about two times per month. Each time, I buy two packs of the same brand. I don't like instant noodles. Buying instant noodles once or twice a month is enough for me. (Participant 26, Sales staff)*

Several other participants showed high levels of product involvement, in terms of their perceptions as well as purchase frequency and purchase volume. To them, packaged instant noodles were essential, convenient and very useful, such as:

*Packaged instant noodles are essential to me. I buy and eat a lot of instant noodles. I often buy a full case of 48 packets. (Participant 29, Office worker)*

*I started eating instant noodles when I was a small kid. I consume instant noodles even more now. You know, in developing countries, people eat instant noodles very often, because noodles taste good, beneficial and are very convenient. Even rich people like eating instant noodles. Frankly speaking, I eat a lot of instant noodles not to save money. I really love it. I eat it a lot, nearly every day. (Participant 34, Electric bike trader)*

Many participants mentioned that they liked to eat instant noodles. Moreover, they liked to buy paper packets as paper packaging was eco-friendly. The adjectives such as essential, convenient, beneficial, necessary and useful were repeated many times in the discussions, for example:

*I eat instant noodles for breakfast, about 5-6 times a week. Every time I feel hungry at night, I eat instant noodles. I often buy paper packages. They become indispensable in my life. Paper-packaged instant noodles are so useful and eco-friendly. (Participant 35, Bank clerk)*

*I always buy paper packs of instant noodles as they are cheap, convenient and eco-friendly. I like to eat instant noodles and I like paper packs as they are eco-friendly. (Participant 19, Office worker)*

*I buy a lot of instant noodles. Packaged instant noodles are necessary products. I like to buy paper packets like Miliket. It tastes delicious and is environmentally friendly. (Participant 11, Customer service officer)*

As shown in the quotations above, it seemed that some consumers were involved with the product itself (i.e., instant noodles) while others might be more distinctly involved with instant noodles in eco-friendly packaging. For example, participant 34, an electric bike trade said: “I started eating instant noodles when I was a small kid. I consume instant noodles even more now. Frankly speaking, I eat a lot of instant noodles not to save money. I really love it. I eat it a lot, nearly every day”. This demonstrates consumer involvement with the product itself. On the other hand, participant 19, an office worker, expressed: “I always buy paper packs of noodles as they are cheap, convenient and eco-friendly. I like to eat instant noodles and I like paper packs as they are eco-friendly.” This is an interesting point to note because it shows in the focus groups that involvement with the product itself and with the product in eco-friendly packaging can drive purchase behaviour. In this research, many participants shared that they were frequently involved with the packaged instant noodle product and some did mention they were more involved with buying the eco-friendly

version of instant noodle packets (i.e., instant noodles in paper packages). Furthermore, the adjectives they used to describe packaged instant noodles, either the product or the product in eco-friendly packaging (such as essential, convenient, necessary, indispensable, beneficial and useful) were indicative of their involvement.

Extant research stated that involvement is an important concept in consumer research and implies attention to something relevant (Ratchford, 1987). Applied for this research, something relevant could be instant noodles and instant noodles in eco-friendly packages, depending on consumer levels of involvement with the noodle product itself or distinctly with eco-friendly packaged noodles. Jain and Srinivasan (1990) developed a measurement of scale to measure product involvement which uses adjectives to describe how relevant a product is to a consumer (such as essential, beneficial, needed). Likewise, Berens, Riel and Bruggen (2005) used the words “essential” and “useful” to describe product relevancy and involvement. Thus, the descriptive adjectives that the focus group participants used correlated with the items used in measurements of product involvement developed by Jain and Srinivasan (1990) and Berens, Riel and Bruggen (2005). Hence, it was determined to include product involvement into the research model for investigations in phase two of this research.

On another note, the focus groups highlighted that consumers might be emotionally involved with low-involvement products such as packaged instant noodles, especially when the product offers essential, useful and beneficial values to them. In this case, packaged instant noodles are frequently consumed products. According to Euromonitor (2017), instant noodle is one of the most frequently consumed products in Vietnam, thanks to its convenience and variety of uses. A survey by Kantar Worldpanel in 2017 also showed that the Vietnamese people buy packaged instant noodles 18 times per year on average (Vietnam Net, 2017). Hence, it might become an essential product of many Vietnamese people due to their busy lifestyle.

Extant studies confirmed that low involvement products tend to be products bought frequently as a routine behaviour (Kumar, Ghosh and Tellis, 1992). Additionally, low involvement products are repeatedly purchased (Pansari and Kumar, 2017). Research shows that a higher frequency of purchase and usage leads to a better understanding of the products that match consumers' preferences (Anderson, 1994). If a frequently bought product matches consumers' expectations and preferences, this could lead them to make repeated purchases to an extent the product becomes an emotional involvement. This topic might need further research to confirm if emotional involvement is aligned with low involvement products, which is not the aim of the current research. However,

the heated discussion on product involvement in the focus groups did validate its inclusion in the second phase of this research. It emerged in the discussions that consumers were involved with instant noodles and some distinctly with instant noodles in paper packages. It was also noted in the focus groups that there are plastic and paper types of packaging in the instant noodle category although plastic packages are more abundant in the Vietnamese market.

Overall, as validated by the focus group interviews, the three pre-determined factors, environmental self-identity, environmental involvement and product involvement, showed potential relationships with green purchase intention. Hence, this validation led to the decision to incorporate these three factors in the research model for hypothesis testing. The hypotheses that were updated to reflect the relationships of these factors with green purchase intentions are shown in Section 5.7.

### **5.5.2 Subjective Environmental Knowledge and Perceived Financial Constraints**

This section discusses the analysis of the factors identified from the literature review in the direction of ability of the MAO approach, namely, subjective environmental knowledge and perceived financial constraints. The coding process identified several statements from the interviews that reflected subjective environmental knowledge but did not validate the role of perceived financial constraints in relation to buying eco-friendly packaged instant noodles.

First, environmental knowledge emerged emphatically from the focus group interviews. Most participants showed their subjective environmental assessments on what they knew and how much they knew about different types of packaging. Plastic is a commonly-used type of packaging for instant noodles, and many participants knew about plastic packaging and its negative environmental impacts. Some participants expressed their opinions about why they thought paper and biodegradable packaging were more eco-friendly. For instance:

*You know, it is very difficult for plastic to get decayed in landfills. I have been working in a plastic company so I knew that it's quite complicated to produce plastic packaging. We use plastic as raw material: plastic is first put in a machine for flattening, and then get laminated before passing through a printing cycle, then it goes through many other cycles to become finished packaging and ready for use. All costs resulting from these cycles will be factored into the retail price of an instant noodle packet. But what? Finally a plastic packet will end up thrown away to last in landfill for decades. Does this turn out to be very wasteful? (Participant 19, Office worker)*

*I believe plastic bags can be recycled but they can be toxic to humans. Plastic can be melted; therefore, it is dangerous for our health. (Participant 1, Trader)*

*I am sure eco-friendly packaging must not be made from plastic. I know very well that plastic is very toxic, even more toxic than rubber. Recycled plastic is even more dangerous. If a package for instant noodles is made from plastic or from recycled plastic, it will be unsafe for our health. Plastic is inherently noxious. And it is dangerous for us when plastic packaging finally becomes waste. (Participant 22, Craftsperson)*

*In my opinion, paper packaging, for example, a Miliket paper package, easily breaks down in the soil. So paper packaging is more eco-friendly, cleaner and more convenient. Biodegradable packaging is eco-friendly too. (Participant 28, Housewife)*

The focus group participants associated their environmental knowledge of packaging with their environmental concern and their purchase intention. It was observed that those participants who expressed concern for the environment appeared more eager to share what they knew about packaging and eco-friendly packaging. Some emphasised that they were very concerned that the quality of the environment in Vietnam was very bad and that it led them to explore more eco-friendly types of packaging. They also highlighted the need to know better what types of packaging were really eco-friendly and thus suggested that manufacturers should provide information so that consumers could make sound purchase decisions. For example:

*If manufacturers conduct effectively their educational campaigns on eco-friendly packaging, consumers will know more about their eco-friendly packaging and buy it. (Participant 12, Accountant)*

This consumer insight implied that consumers with a higher level of subjective environmental knowledge of eco-friendly packaging might have stronger purchase intentions for eco-friendly packaged instant noodles. This deserved further testing in phase two of this research, when quantitative data was collected to explore if subjective environmental knowledge had an impact on green purchase intention. Therefore, subjective environmental knowledge was validated to be part of the research model for investigations in phase two.

Second, with regard to perceived financial constraints, participants did not agree that finance had anything to do with purchase intention for eco-friendly packaged instant noodles. Most participants expressed no financial constraints as they all thought instant noodles were inexpensive. In their perceptions, everybody could afford it and finance should not be an issue.

*Instant noodles are cheap products and we can afford them very easily. (Participant 32, Mobile phone sales staff)*

*I do not think income is a problem for buying packaged instant noodles as this is a product for everybody, especially for poor people. (Participant 10, Housewife)*

*A few thousand dong is not a big problem to consider. If we buy an expensive eco-friendly product, such as an inverter washing machine, financial constraints will be a big obstacle influencing our intention to buy. For packaged instant noodles, I do not think finance could be a problem. (Participant 22, Craftsperson)*

These consumer insights did not validate the inclusion of perceived financial constraints into the research model. In the participants' opinions, packaged instant noodle was a cheap everyday product at a cost of only 2,000 – 3,500 VND (0.07 USD - 0.15 USD) and thus would not be a big financial issue to consider. Although eco-friendly packages were perceived to be more costly than conventional ones, finance was still not considered as a hindrance for green purchase intention in this case, such as:

*I prefer eco-friendly packaging. The extra cost doesn't matter because instant noodles are inexpensive products. (Participant 28, Housewife)*

This example is consistent with Tanner and Kast (2003)'s finding that perceived monetary barriers did not prove to be a relevant predictor of green purchase behaviour. In the same manner, according to the focus group participants, perceived financial constraints did not seem to pose an obstacle for green purchase intention with regard to instant noodles in eco-friendly packaging. As a result, it was determined that this factor was not incorporated in the research model for further testing.

To summarise, the focus group interviews validated subjective environmental knowledge to be incorporated into the research model. As shown in Chapter 3, prior studies indicated that subjective environmental knowledge has a positive relationship with environmental behaviour (Aertsen *et al.*,

2011; Ellen, 1994; House *et al.*, 2005; Pagiaslis and Krontalis, 2014). Therefore, the decision to incorporate subjective environmental knowledge into the research model was supported.

### **5.5.3 Perceived Availability of Alternatives and Perceived Time Pressure**

This section presents the analysis related to the opportunity factors presented to individuals, which are product availability and time. All of the participants indicated that they often bought packaged instant noodles in their grocery shopping trips. This coincided with the assumption of the research that packaged instant noodle purchases often occur in grocery shopping (see Section 3.3.3). One factor emerging from the group interviews was consumers' perceived availability of eco-friendly packaged alternatives. Many participants expressed concerns that there was not an abundant supply of eco-friendly alternatives for packaged instant noodles. Availability of alternatives was perceived to be the extent of ease in searching and buying a desired eco-friendly product. Most participants stated that it was not easy to find and locate instant noodles packaged in an eco-friendly manner, as indicated in comments below:

*When we want to buy a paper packet, there are not many paper options for the brands we want to buy. I mean, if there are plastic and paper-packaged options for the brand I want, for example Hao Hao, I will pick the paper one, but in reality, plastic packaging dominates the market. (Participant 25, Accountant)*

*If an eco-friendly packaged alternative is available, it's not easy to find because it might occupy a tiny space in the store. (Participant 35, Bank clerk)*

Most other participants agreed that there was limited availability of eco-friendly packages for the leading brands in the market, such as Hao Hao and Gau Do. They stated that there were still a few brands that supplied paper packages, such as Miliket and Vi Huong. In the present market, Miliket and Vi Huong are small local brands whereas Hao Hao, Gau Do and Omachi are in the top three brands of instant noodles in Vietnam (Vietnam Net, 2017b). Miliket and Vi Huong offer most paper packages of instant noodles while the other leading brands supply mostly plastic packages in the market (see Section 1.4.3). This fact was well reflected in the focus group discussions, indicating that the participants had good market knowledge. For instance, participant 21, a fashion trader said: "Most instant noodle products are packaged in plastic bags, except for two brands, Miliket and Vi Huong, which offer an abundance of paper packages. Even the well-known Hao Hao brand provides no paper packages". To almost all participants, instant noodles in paper packaging were

not supplied by the leading brands such as Hao Hao and Gau Do. This might be a negative factor which would affect consumers' green purchase intention regarding eco-friendly packaging. This opinion supports theories showing that unavailability of an eco-friendly product may be an obstacle for green purchase decisions (Ölander and Thøgersen, 1995; Vermeir and Verbeke, 2006). For this research, it provided a consumer rationale for explaining green purchase intention concerning eco-friendly packaged instant noodles, which was quantitatively explored in phase two.

In relation to perceived time pressure, it was found to be associated with shopping effort in the focus group interviews. Most participants overtly indicated that they did not have much time or did not spend much time for grocery shopping due to time pressure. Consumer purchase decisions were made quickly or with limited time. For example:

*I want to buy eco-friendly packaged products but I might not read eco symbols on packaging because I don't have much time. (Participant 16, College student)*

*I am afraid that I don't have time to read the label of the package. My grocery shopping is always made in a hurry. (Participant 23, Doctor)*

*We make our grocery purchase decisions very quickly. We do not spend much time. (Participant 31, Fashion trader)*

*It is ridiculous to spend much time on grocery shopping, because we have so many things to do. (Participant 15, College student)*

*I do not spend time around in the grocery store. I often buy things in a hurry. (Participant 36, Accountant)*

These consumer insights appeared to be consistent with the findings by Tan, Johnstone and Yang (2016) that Australian consumers perceived it is too hard to be green, as they referred to perceived factors which could hinder their readiness to be green. The hindrances could be time pressure and availability of green products in the market (Tan, Johnstone and Yang, 2016). In this research, packaged instant noodles involve daily food choices. As reported in Samson and Voyer (2014), daily food choices are often made under time pressure and urgency. In reality, grocery shopping can become a tiring monotonous routine in a busy life under time pressure. As a consequence, the participants expressed the need to make quick decisions in a hurry for their grocery shopping.

In summary, based on the insights provided by the focus group participants, the two factors, perceived availability of alternatives and perceived time pressure, were proved to be appropriate components in the research model of green purchase intention. Most participants shared that they did not find an abundant supply of eco-friendly packaging in the instant noodle market. Furthermore, they had time pressure for grocery shopping. Their effort to find and locate eco-friendly packaged products to buy was hence negatively affected. Given these consumer opinions, it was also decided to quantitatively investigate the relationship between perceived time pressure and shopping effort in phase two of this research.

#### **5.5.4 Perceived Descriptive Norms**

The section shares the findings from the focus group interviews related to perceived descriptive norms. Extant research holds that the perception of what most others are doing causes people to behave in a similar manner, even when the behaviours are as morally neutral as choosing a consumer product (Cialdini, Reno and Kallgren, 1990). This finding also emerged from the focus groups, where the participants described their environmental experiences and behaviours. Many of them openly expressed that they modelled the majority in their social circles. For example, most participants stated that they modelled their significant others (friends, neighbours) in some behaviours such as reusing packaging after consumption, or actions to protect the environment.

*People are getting more and more in favour of eco-friendly packaging like paper. They even reuse packaging. For instance, after using a water bottle, my friends often keep it for future use. I also do the same thing. (Participant 12, Accountant)*

Many participants mentioned that eco-friendly grocery bags (such as reusable, paper-based and biodegradable bags) were available in many stores and supermarket. They saw others buy and use these types of eco-friendly bags. They modelled other people to do the same thing. For example,

*I see more people buy and use paper, reusable and biodegradable grocery bags. I also do the same thing. (Participant 1, Trader)*

*I notice a lot of shoppers use eco-bags at supermarkets. They encourage customers to use recycled and reusable grocery bags and I also model others to do the same thing. (Participant 26, Sales staff)*

The group interviews revealed that many participants modelled others in buying packaged instant noodles and using reusable grocery bags. Several participants emphasised that thanks to many social campaigns for reusable grocery bags in the country, there has been increasing awareness in their families and communities about reducing plastic packaging consumption. As a result, they found themselves as well as significant others and people in the same community care more about their purchase and consumption activities. For instance:

*People around me start to use more eco-friendly bags when shopping. I find myself and my wife care more about the environment when we go shopping together, especially when we buy packaged food products. (Participant 9, Office worker)*

*Yes, me too. That is why I prefer to buy paper packages of instant noodles. Every time I go shopping in the supermarket, I see people use reusable and paper bags. This does affect my purchase decisions as I pay more attention to packaging when I buy packaged foods. (Participant 10, Housewife)*

*The packaging of Miliket instant noodles is made from paper. Well, you know, many people buy this brand. I think it is the most eco-friendly package in the market and I also buy products of this brand. (Participant 24, Housewife)*

There are two interesting points from these consumer insights. First, the above quotations demonstrate that Vietnamese consumers do model others' behaviours in purchase situations. The participants expressed that they did follow the people around them to do the same thing, such as using eco-friendly bags or buying paper packs of instant noodles. Prior research shows that "follow the crowd" psychology exists in consumer behaviours such as recycling, saving energy, using reusable bags and buying green products (Thøgersen and Ölander, 2003). This "follow the crowd" psychology may serve to explain consumer behaviour towards buying and using eco-friendly grocery bags and eco-friendly food packages as expressed by focus group participants.

Second, using eco-friendly grocery bags may lead to buying eco-friendly product packages due to spillover effects. According to Truelove *et al.* (2014), several studies have found positive correlations among different eco-friendly behaviours that could indicate positive spillover. For instance, Thøgersen (1999) found that recycling was shown to positively related to avoiding excess

packaging as well as the use of reusable bags (Berger, 1997). Engagement in environmental behaviours may encourage changes in people's values and identity, which then may lead to further behavioural changes in line with the revised identity (Whitmarsh and O'Neil, 2010). This research assumes that if consumers see others use eco-friendly bags, they may adopt similar behaviours. If they use eco-friendly bags, they more likely make eco-friendly purchase decisions, including eco-friendly packaged products. As found in Thøgersen and Ölander (2003)'s study, there is an existence of transfer of environment-friendly conduct between behavioural categories. In the focus groups of this research, there was an existence of descriptive norms relating to environmental behaviours such as using eco-friendly bags, especially in grocery shopping. Furthermore, the participants also confirmed that they often bought packaged instant noodles in grocery shopping trips. Hence, it is of particular interest that an assumption could be made about descriptive norms relating to using eco-friendly bags and the behaviour of buying eco-friendly packaged instant noodles in the Vietnamese market context. Based on this assumption, it would be useful to test whether or not descriptive norms around using eco-friendly bags influence green purchase intention related to eco-friendly packaged instant noodles. It was thus decided to include perceived descriptive norms in the research model for further investigations in phase two of this research

## **5.6 DEPENDENT VARIABLES: PURCHASE INTENTION, WILLINGNESS TO PAY AND SHOPPING EFFORT**

The literature review identified three dependent variables – green purchase intention, shopping effort, and willingness to pay. The focus group interviews validated this range of three variables. This section, therefore, reports the analysis and validation of the dependent variables in the proposed research model.

First, in terms of behavioural intention, most participants expressed intention to buy different versions of packaged instant noodles. Participant 13, a college student, said: "I will buy instant noodles in plastic packaging". Participant 19, an office worker, also agreed: "I will buy plastic packages, because to me, they look nice, clean, glossy and water-resistant." Likewise, another office worker (participant 34) stated: "I know plastic packaging is not as eco-friendly as paper packaging but I decide to go for flavour and taste. If my preferred brand Hao Hao switches to paper packaging, I will go with it." It appeared to some participants that their purchase intention was primarily based on the physical appearance of packaging and their favourite brands. On the other hand, behavioural intention for eco-friendly packaged instant noodles was clearly expressed by many participants such as the following:

*For the environment, I will buy eco-friendly packaging. (Participant 23, Doctor)*

*I buy paper packages. They are safer to our health. (Participant 26, Sales staff)*

*I buy instant noodles in paper packages because I eat them instantly. (Participant 27, Office worker)*

A few participants, however, mentioned other factors which could make consumers buy eco-friendly packages, such as knowledge of different types of packaging. To them, a knowledge of environmental symbols might help make a clear distinction between eco-friendly and non-eco-friendly packages. Purchase intention for eco-friendly packaged foods, therefore, could be facilitated accordingly. For example:

*If we understand environmental symbols and know to distinguish eco-friendly and non-eco-friendly packaging materials, we will certainly go for eco-friendly packages. (Participant 25, Accountant)*

Overall, many participants intended to buy eco-friendly packages, though citing different reasons which could lead to their purchase intention. This reinforces the assumption that behavioural intention for eco-friendly packaging does exist in Vietnam and deserves a study to gain a more accurate understanding of green purchase intention relating to eco-friendly packaging in this research.

Second, willingness to pay was less emphasised in the focus group interviews, where many participants showed concern for cost factors. Most participants shared that they believed eco-friendly packaging costs might be higher (see Section 5.4.3). This accords with the findings from Magnier and Crié (2015)'s that packaging eco-friendliness has the reputation to be more expensive in consumers' perceptions. This might be considered as a deterrent to purchases relating to eco-friendly packaging. Some participants did not show a high level of willingness to pay for eco-friendly packaged instant noodles, as cost concern was explicitly high.

*I absolutely don't buy instant noodles packaged more environmentally if the price is 500 VND extra (0.02 USD) for the eco-friendly package. If we buy in bulk, the extra expense will be huge. (Participant 15, IT staff)*

*We only buy instant noodles packaged in a more environmentally friendly manner if the price is cheaper. (Participant 18, College student)*

*I prefer to buy paper packages. First, the paper package is safer for the environment. Second, the price must be cheaper. (Participant 19, Office worker)*

These statements show that many consumers might not be willing to bear any extra costs if eco-friendly packaged options were priced higher. Quite a few participants, on the other hand, expressed some degree of willingness to pay for instant noodles packaged environmentally. They emphasised the importance of human health and the quality of the environment in making purchase decisions related to packaged foods. This consumer insight supported the inclusion of willingness to pay in the research model for further testing with quantitative data in phase two.

*I certainly buy instant noodles in paper packaging if it still offers the same flavour. I am sure I will pick up the paper packages even if paper packaging costs me a little more. (Participant 31, Fashion trader)*

*I prefer eco-friendly packaging because it is better for my health. The extra cost doesn't matter to me. (Participant 27, Office worker)*

*Of course, an instant noodle package with eco symbols will cost us more than a conventionally packaged one. However, I think it is worth paying more to get eco-friendly packaged products. (Participant 23, Doctor)*

*If manufacturers point out environmental consequences of using plastic packaging, consumers will be willing to pay an extra 500 VND or 1,000 VND (0.02-0.04 USD) for an eco-friendly package. (Participant 18, College student)*

The focus group interviews revealed that different participants would be willing to pay for eco-friendly packaged instant noodles with an extra amount from 500 to 1,000 VND (0.02-0.04 USD). On the one hand, this insight could be further tested in phase two of the research relating to willingness to pay. On the other hand, the participants' opinions showed that different behavioural segments might exist in the market. Green consumer segmentation was not covered in the current research scope and might be useful to explore in future research.

Third, shopping effort, the other concept identified in extant research that relates to consumer purchase intention was not strongly expressed in the focus group interviews. Some participants clearly seemed not interested in spending extra shopping effort. This may be because packaged instant noodles are low-involvement products which consumers do not normally spend much effort buying. Yet quite a few participants said that they would spend more effort buying eco-friendly versions of packaged instant noodles.

*Once I am convinced that paper packaging is eco-friendly, I will be willing to shop and buy it. (Participant 34, Office worker)*

*It is helpful to know environmental symbols. Whenever I go shopping, I will spend time to read eco symbols on packaging. (Participant 24, Housewife)*

*I would pay more attention looking for eco-friendly packaging when shopping for packaged instant noodles. (Participant 25, Accountant)*

The fact that participants expressed intended shopping effort for buying instant noodles in eco-friendly packaging validated the inclusion of this concept in the research model. As shopping effort was scarcely reported in the literature on green purchase intention, it would be useful to conduct research to explore this factor and its association with behavioural purchase intention with regard to eco-friendly packaging.

In short, consumer insights from the above analysis supported exploring behavioural purchase intention, willingness to pay and shopping effort together in phase two of research. It would be useful for marketers to have a clearer understanding of how behavioural purchase intention could influence willingness to pay and shopping effort, because potential findings can help them develop effective marketing communication strategies for their eco-friendly packaging options.

## **5.7 UPDATED RESEARCH HYPOTHESES AND THE REVISED RESEARCH MODEL**

Phase one identified three major dimensions of eco-friendly packaging revealed by interviewed consumers. These three dimensions were packaging materials, manufacturing technology and market appeal. Consumers were concerned about packaging materials and their environmental impacts. Consumers also required eco-friendly manufacturing technology as well as market

appealing characteristics of eco-friendly packaging. Furthermore, phase one validated the inclusion of seven antecedents of green purchase intention: product involvement, environmental involvement, environmental self-identity, subjective environmental knowledge, perceived time pressure, perceived availability of alternatives and perceived descriptive norms. Since findings from phase one supported the inclusion of all factors except for perceived financial constraints, only one out of twelve preliminary hypotheses was removed, leaving a total of eleven hypotheses for testing in phase two. The other eleven hypotheses remained unchanged and the number of each hypothesis was updated to reflect the removal of one hypothesis relating to perceived financial constraints. Table 5-7 summarises the updated hypotheses after phase one of the current research.

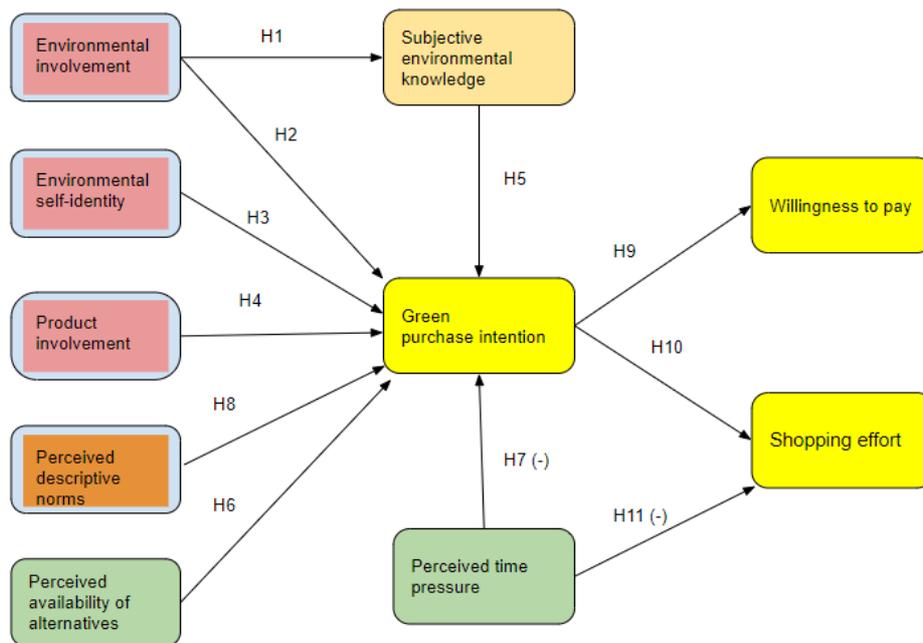
**Table 5-7: Updated research hypotheses**

| <b>Research Questions</b> | <b>Original Hypotheses</b>  | <b>Updated Hypotheses (after phase one)</b>   |
|---------------------------|---|---|
| RQ2, RQ3                  | <p>H1: Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging.</p> <p>H2: Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H3: Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H4: Product involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H5: Subjective environmental knowledge concerning eco-friendly packaging is positively related to green</p> | <p>H1: Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging.</p> <p>H2: Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H3: Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H4: Product involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H5: Subjective environmental knowledge concerning eco-friendly packaging is positively related to green</p> |

| Research Questions | Original Hypotheses  | Updated Hypotheses (after phase one)   |
|--------------------|--|--|
|                    | <p>purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H6: Perceived financial constraints are negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H7: Increased perceived availability of eco-friendly packaged alternatives is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H8: Perceived time pressure is negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H9: Perceived descriptive norms are positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> | <p>purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>Removed</p> <p>H6: Increased perceived availability of eco-friendly packaged alternatives is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H7: Perceived time pressure is negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> <p>H8: Perceived descriptive norms are positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.</p> |
| RQ4, RQ5           | <p>H10: Green purchase intention is positively related to willingness to pay for instant noodles in eco-friendly packaging.</p> <p>H11: Green purchase intention is positively related to shopping effort for instant noodles in eco-friendly packaging.</p>   | <p>H9: Green purchase intention is positively related to willingness to pay for instant noodles in eco-friendly packaging.</p> <p>H10: Green purchase intention is positively related to shopping effort for instant noodles in eco-friendly packaging.</p>  |

| Research Questions | Original Hypotheses  | Updated Hypotheses (after phase one)   |
|--------------------|--|--|
|                    | H12: Perceived time pressure is negatively related to shopping effort for instant noodles in eco-friendly packaging. | H11: Perceived time pressure is negatively related to shopping effort for instant noodles in eco-friendly packaging. |

The conceptual research model is further refined, reflecting the updated hypotheses presented in Table 5-7. Overall, the six antecedents (environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived availability of alternatives and perceived descriptive norms) were hypothesised to positively affect green purchase intention (H2, H3, H4, H5, H6 and H8). Only one antecedent (perceived time pressure) was hypothesised to both negatively affect green purchase intention (H7) and shopping effort (H11). In addition, environmental involvement was hypothesised to be positively related to subjective environmental knowledge concerning eco-friendly packaging (H1). Also, green purchase intention was hypothesised to positively influence willingness to pay and shopping effort (H9, H10). Figure 5-3 is a visual representation of the revised research model for further testing in phase two.



**Figure 5-3: The revised research model (after phase one)**

## **5.8 CHAPTER SUMMARY**

The chapter presented research results from phase one which qualitatively evaluated the proposed green purchase intention model with insights from thirty six (36) focus group participants in Ho Chi Minh City and Hanoi of Vietnam. Overall, in consumer perceptions, there were three main dimensions of eco-friendly packaging, namely, packaging materials, manufacturing technology and market appeal. Consumer insights from the focus groups also validated the seven antecedent variables, namely, environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived time pressure, perceived availability of alternatives and perceived descriptive norms. The three dependent variables: behavioural purchase intention, willingness to pay and shopping effort were also confirmed to be included in the research model. Based on phase one's findings, the hypotheses originally developed in Chapter 3 were updated and the research model was refined. Chapter 6 describes research design for data collection and analysis in phase two to quantitatively examine the research model in the wider consumer context of Vietnam.

## **CHAPTER 6 – PHASE TWO: QUANTITATIVE RESEARCH DESIGN**

### **6.1 INTRODUCTION**

The previous chapter (Chapter 5) discussed the results from phase one which validated a number of antecedents of green purchase intention and the inclusion of dependent factors such as shopping effort and willingness to pay. Phase one also provided consumer insights on key attributes of eco-friendly packaging, which gave useful input for the survey instrument developed to collect data in phase two. This chapter describes the research design for phase two to quantitatively test the refined integrative model of green purchase intention (see Figure 5-3). Section 6.2 justifies the choice of survey approach and Section 6.3 illustrates the development of the survey instrument in phase two. Sampling plan and survey administration are detailed in Section 6.4 and Section 6.5 respectively. Data preparation is described in Section 6.6. Ethical consideration is discussed in Section 6.7. Section 6.8 details the quantitative data analysis method selected for phase two, which is Partial least squares-Structural Equation Modelling. Finally, Section 6.9 summarises the chapter.

### **6.2 RESEARCH DESIGN FOR PHASE TWO**

This section presents the design for the quantitative research conducted in phase two. Experiment and survey are considered as research designs mainly linked to quantitative research (Saunders, Lewis and Thornhill, 2012). Both designs were evaluated to make an appropriate choice to proceed with data collection in phase two of this research.

Research using experiments can take more time and money. The main reason is that to operate experiments, the testing environment should be as close to real life as possible and human errors should be strictly monitored (Saunders, Lewis and Thornhill, 2012). Owing to the strict controlling nature of experiments, experimental research findings could be far from real-life contexts, and as a consequence may be less useful and generalisable for replication (Saunders, Lewis and Thornhill, 2012). Furthermore, experimental research takes more resources to conduct as researchers need to pay all possible attention to develop realistic testing environments (Kothari, 2004). Because of limited resources and time available to the PhD researcher, experimental design would not be practical.

The second data collection method design is survey. Surveys are often applied in correlational research to gather individual responses which can show their opinions, beliefs and attitudes (Creswell, 2012). In correlational research, researchers often want to measure more than two factors in order to detect, describe and explain the effects (if any) which could arise between them (Creswell, 2012). “Depending on the nature of a research problem, correlational research can either be explanatory or predictive” (Creswell, 2012, p.340). This research was of a predictive nature as it was focused on exploring whether and to what extent antecedents could predict green purchase intention. To understand the nature of prediction research in this PhD thesis, it would be useful to know the differences between explanatory and prediction research. The major distinction between explanatory and prediction designs is that the latter extends variable relationships by distinguishing predictors (antecedent or independent) and criterion (dependent) variables (Creswell, 2012). In prediction research, a number of predictors are employed to predict potential effects in dependent variables to determine whether or not and to what extent they are associated (Creswell, 2012). As the research in phase two tested hypotheses involving a number of predictions, correlational designs were appropriate and survey methods were selected as the data collection method.

A survey allows the research to validate the facts and to estimate relationships and predictions guided by the research objectives. Many researchers have adopted survey methods to describe the relationships between antecedents and environmental behaviours (e.g., Parker *et al.*, 2014; Prakash and Pathak, 2017; Vermeir and Verbeke, 2006; Yadav and Pathak, 2016). Survey methods can collect data from large sample sizes to produce generalisable results and simultaneously are easy to administer and record questions and responses (Hair *et al.*, 2009). Therefore, surveys suit this research’s objectives to explore and describe the relationships between the variables in the research model.

With regard to survey methods, Hair *et al.* (2009) listed four different types: person-administered, telephone-administered, self-administered and online surveys. Person-administered and telephone-administered surveys involve more interview biases (Hair *et al.*, 2009) and require more time and money which would not be possible for this research. Furthermore, there is a lack of anonymity in person and telephone-administered types of surveys; this is where online-based surveys excel because they can provide anonymity (Gosling *et al.*, 2004). It is noted that online data collection has some limitations relating to population samples and their non-random nature (Lefever, Dal and Matthiasdottir, 2007). However, randomness is also an issue with other methods of data collection (Lefever, Dal and Matthiasdottir, 2007). Moreover, online surveys offer the advantages of data collection speed and short response time (Ilieva, Baron and Healey, 2002). With the advancement

of technology, self-administered online surveys can be used: participants read the survey questions and record their own responses and this process can take place totally online (Hair *et al.*, 2009). Thus, this method is more effective thanks to low cost per survey and less interviewer bias (Hair *et al.*, 2009). Self-administered online surveys have been used in prior similar research to understand environmental behaviours (e.g., Parker *et al.*, 2014; Prakash and Pathak, 2017). Because of the advantages, and considering the time frame of the PhD program, this research used self-administered online surveys.

This research conducted surveys via a consumer online panel. According to Evans and Mathur (2005), self-administered online surveys can be managed from a consumer online panel. Consumer online panels can be a good platform for online data collection (Anthony, Pitta and Quinones, 2012) in conjunction with online survey tools such as Qualtrics and SurveyMonkey. Doing data collection via consumer online panels, the researcher should navigate around some limitations such as data quality issues due to unreasonably fast response time or extrinsic motivations such as payment (Lowry *et al.*, 2016). To mitigate the limitations, first, this research estimated the average period of time needed to fill up the online survey via a pre-test and an online pilot survey. Time to complete a full survey was expected to be around 15 to 20 minutes. All responses completed in less than 3 minutes were considered too fast and were eliminated (see Chapter 7). Second, to deal with extrinsic motivations to complete the survey due to payment issues, in this research, incentives were not paid to survey participants. Instead, a small incentive (20,000 VND, equivalent to 0.87 USD) was given to each completed response and participants donated it to a charity organisation of their choice via an internet link provided at the completion of the online survey (see Section 6.5).

A limitation of the online survey method is that it limits participants to internet users. This can limit the representativeness of the sample to the population. However, Vietnam is ranked as one of the twenty countries having the highest number of internet users with 53.86 million in 2017, accounting for 55 per cent of the population (Statistica, 2017). 81 per cent of Vietnamese internet users are adults aged 18 and above (Poushter, 2016). Also, Vietnam's literacy rate is high at 97.3 per cent (Dan Tri, 2016). Given the high rates of literacy and internet usage, the potential reach of an online survey is high and hence the possibility of representativeness is more likely. The advantage of online surveys is the possibility of obtaining geographically heterogeneous samples that may not be appropriate when using other traditional data collection strategies (Rudestam and Newton, 2007). Moreover, other data collection methods have several limitations. For example, mail surveys are reliant on the post, difficult to reach and more complicated in processing whereas telephone surveys are expensive and participants are less likely to respond due to trust issues. To compare, online

surveys offer potentially higher reach, low cost per survey and less interview bias. Given the advantages over the limitation, self-administered online surveys via a consumer online panel were adopted in this research.

There are two types of surveys: cross-sectional and longitudinal (Creswell, 2012). The benefit of longitudinal data is the increased statistical power (Yee and Niemeier, 1996); however, the disadvantage is that it demands time. Cross-sectional studies, on the other hand, have the disadvantage of being difficult to make causal inference, yet offer the advantages of being inexpensive and taking up less time to conduct (Levin, 2006). Due to limited time resources within the PhD study time frame, cross-sectional surveys were used for the purpose of this research. Moreover, the low cost per response also added to the decision to do cross-sectional surveys in phase two of this research. Accordingly, the cross-sectional survey in phase two was designed and administered through three steps: survey instrument design (Section 6.3), sampling plan (Section 6.4) and survey administration (Section 6.5).

### **6.3 SURVEY INSTRUMENT DESIGN**

A survey instrument was designed in phase two in a way that the constructs could be quantitatively measured. To develop the instrument used in phase two of this research, a measurement development process was followed through four steps (see Churchill, 1979) as follows:

- Section 6.3.1 describes the specification of the domains of the studied constructs.
- Section 6.3.2 presents the items that capture the constructs.
- Section 6.3.3 outlines the steps to design the survey questionnaire and Section 6.3.4 discusses the use of pilot tests to purify and validate the measures used in the questionnaire.
- Section 6.8.4 presents the assessment of the measures' reliability and validity.

#### **6.3.1 Specification of the Domains of Constructs**

This section provides an overview of all constructs and their measures used in this research. Brennan, Binney *et al.* (2014) emphasised the rule of thumb based on the Handbook of Marketing Scales (Bruner, Hensel and James, 2005) that a usable scale should originate from a reasonable theoretical framework which is generally agreed upon. This helps specify the domains of constructs which involve the theoretical definitions and the items of all studied constructs (Churchill, 1979; Lewis, Templeton and Byrd, 2005). In this research, all the studied constructs were defined and the sources of measurement items of all constructs of the research model were cited (see Table 6.1).

**Table 6-1: Specification of the domain of the constructs and measurement items**

| Domain      | Construct  | Definition/Description  | Sources   | Measurement item source   | Items | Survey question |
|-------------|--|---|---|---|-------|-----------------|
| Motivation  | Environmental involvement  | The concern for the environment and the level of commitment to act environmentally.                                   | D'Souza and Taghian (2005);<br>Matthes, Wonneberger and Schmuck (2014);<br>Mohr, Eroglu and Ellen (1998);<br>Schuhwerk and Lefkoff-Hagius (1995);<br>Schultz <i>et al.</i> (2004) | Schuhwerk and Lefkoff-Hagius (1995)   | 4     | 8               |
|             | Environmental self-identity  | The extent to which a person considers himself or herself as someone who behaves environmentally.                     | Van der Werff, Steg and Keizer (2013, 2014)   | Van der Werff, Steg and Keizer (2013, 2014)                                 | 3     | 9               |
|             | Product involvement  | The level of perceived personal relevance evoked by a product.  | Jain and Srinivasan (1990);<br>Juhl and Poulsen, (2000);<br>Verbeke and Vackier (2003);<br>Jaichkowsky (1984)   | Adapted from Jain and Srinivasan (1990);<br>Berens, Riel and Bruggen (2005) | 3     | 4               |
| Ability     | Subjective environmental knowledge (concerning eco-friendly packaging) | Perceptions of an individual of what and how much they know about eco-friendly packaging.                             | Brucks (1985);<br>Dodd <i>et al.</i> (2005);<br>Haron, Paim and Yahaya (2005);<br>Newton <i>et al.</i> (2015);<br>Tan (2011).   | Adapted from Flynn and Goldsmith (1999)                                     | 8     | 10              |
| Opportunity | Perceived availability of alternatives                                 | Perceived knowledge on availability of product alternatives (eco-friendly packaged instant noodles in this research). | Vermeir and Verbeke, 2006, 2008;<br>Zhen and Mansori, 2012  | Adapted from Vermeir and Verbeke (2008)                                     | 3     | 11              |

| Domain                        | Construct                            | Definition/Description  | Sources   | Measurement item source                                  | Items | Survey question |
|-------------------------------|--------------------------------------|---|---|--|-------|-----------------|
|                               | Perceived time pressure              | The degree to which consumers consider themselves busy.   | Godinho, Prada and Garrido (2016);<br>Verhoef and Langerak (2001)   | Adapted from Putrevu and Ratchford (1998)                | 5     | 7               |
| Social norms                  | Perceived descriptive norms          | Perception of what most others are doing in the immediate context.  | Cialdini, Reno and Kallgren (1990, 1991);<br>Goldsmith and Clark (2012);<br>Reese, Loew and Steffgen (2014) | Adapted from Nolan <i>et al.</i> (2008)                  | 3     | 12              |
| Green purchase intention      | Behavioural green purchase intention | The likelihood that a consumer would buy an environmentally friendly product, including products with eco-friendly packaging. | Chen and Chang (2012);<br>Nik (2009)  | MacKenzie, Lutz and Belch (1986)                         | 3     | 13              |
|                               | Willingness to pay                   | Willingness of a consumer to pay more for environmentally friendly products.  | Barber <i>et al.</i> (2012);<br>Laroche, Bergeron and Barbaro-Forleo (2001);<br>Nik (2009)                  | Adapted from Laroche, Bergeron and Barbaro-Forleo (2001) | 3     | 14              |
|                               | Shopping effort                      | The level of effort and attention expended for buying products with environmentally friendly characteristics.                 | Ellen (1994);<br>Biswas <i>et al.</i> (2000);<br>Konuk, Rahman and Salo (2015)                              | Adapted from Ellen (1994)                                | 3     | 15              |
| Total items in the first pool |                                      |   |   |  | 38    |                 |

As shown in Table 6-1, there are ten constructs to be measured in phase two of this research, following the MAO approach. Phase one validated three factors relating to consumer motivation towards green purchase intention, namely, environmental self-identity, environmental involvement and product involvement. It was found from the focus group interviews that these factors could potentially have associations with green purchase intention.

In terms of consumer ability, the inclusion of subjective environmental knowledge in the research model was pre-determined by a literature review (see Chapter 3) and validated through the analysis of focus group interviews conducted in phase one (see Chapter 5). In the scope of this research, subjective environmental knowledge specifically refers to consumers' subjective knowledge of eco-friendly packaging. It was assumed that subjective environmental knowledge might potentially affect green purchase intention and this assumption was to be tested in phase two.

In relation to opportunity presented to individual consumers to buy eco-friendly packaged instant noodles, phase one validated the inclusion of two factors, perceived availability of alternatives and perceived time pressure (see Chapter 5). Perceived availability was predicted to have a positive relationship with behavioural purchase intention while perceived time pressure could produce a negative effect.

Phase one also validated the measurement of purchase intention in association with willingness to pay and shopping effort (see Chapter 5). In addition, perceived time pressure was predicted to be negatively related to shopping effort for eco-friendly packaged instant noodles. As no prior studies have explored these factors together, this investigation could provide practical input to a more accurate understanding of green purchase intention.

Overall, there were ten constructs to be measured in phase two of the research. The constructs were environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived availability of alternatives, perceived time pressure, perceived descriptive norms, behavioural green purchase intention, shopping effort and willingness to pay. At this stage, there were 38 items in the first pool tentatively used to measure ten constructs of this research, as shown in Table 6-1. The next step was to generate items for measuring variables in the research model (Section 6.3.2).

### **6.3.2 Generating Items to Measure Variables in the Research Model**

In this research, established marketing scales were adopted, following three criteria: (1) all scales have measured the same concepts as in this research; (2) all scales have been empirically established; and (3) all scales were originally developed for testing on consumers as in this research (Schrauf and Navarro, 2005). Since this research was conducted on consumers, all selected established scales should have been designed for consumers. This research examined existing literature to find relevant scales.

All measurement items of the studied constructs in this research had a seven-point Likert scale. The justifications for the use of Likert-type scales are outlined as follows. First, rating scales are one commonly used tool in consumer behaviour research (Dawes, 2008). Second, the range of possible responses for a scale can vary and textbooks on the subject typically portray 5- or 7-point formats as the most common (Malhotra and Peterson, 2006). Third, all scales adopted in this research to measure the studied constructs used the 7-point Likert-type. These scales were used in prior studies with acceptable Cronbach's alpha of 0.70 and above (see Section 6.3.2.1 to Section 6.3.2.5). Fourth, scales adapted from established instruments were revalidated for their face contents and construct validity and reliability, using a pre-test and a pilot test prior to proceeding with data collection. Most importantly, Likert-type scales can help to generate a report on an overall scale and then subscale internal reliability estimates and individual scale items in the analysis (Gleim and Gleim, 2003). In the survey, the 7-point scale was labelled from 1 "Strongly disagree" to 7 "strongly agree" with the positive side on the right to fit the Vietnamese culture. This 7-point structure was built on the comments from research participants of the pre-test and the pilot test before the online survey. The following sections from 6.3.2.1 to 6.3.2.5 describe the development and/or adaptation of the scales of all constructs to be measured in phase two.

#### **6.3.2.1 Environmental Involvement, Environmental Self-identity and Product Involvement**

This section presents the development of measurement scales for three constructs representing motivation: environmental involvement, environmental self-identity and product involvement. In Chapter 3, a consumer's motivation to act environmentally in a product category was argued to be affected by environmental self-identity, environmental involvement and product involvement. In order to ensure validity, the scales for these three constructs were developed, based on established marketing scales and a thorough literature review.

First, scales to measure environmental involvement construct in the literature were reviewed to select a suitable established scale. Extant work shows that environmental involvement has been measured in many aspects. For example, Stone, Barnes and Montgomery (1995) developed Ecoscale with 31 items to measure environmentally responsible consumers. Ecoscale was used to measure four dimensions, namely, the consumer's knowledge and awareness, the consumer's desire and willingness to act, the consumer's ability to act, and the consumer's behaviours (Stone, Barnes and Montgomery, 1995). The current research separated the consumer's knowledge from the consumer's willingness to act and the consumer's ability to act by examining three factors, environmental knowledge, willingness to pay and purchase intention as demonstrated in the research model. Hence, Ecoscale with 31 items were deemed not appropriate for the purpose of this research.

The next scale to be reviewed was environmental concern having 8 items which was developed by Preisendorfer (1996, as cited in Bamberg, 2003). This scale was originally conceptualised as a unidimensional general attitude and therefore did not fit in the current research which determined to measure environmental involvement relating to an individual's level of commitment to environmental issues (Schuhwerk and Lefkoff-Hagius, 1995) (see Section 3.2.1). Hence, the scale of environmental concern was regarded as unsuitable for this research.

The environmental involvement measurement was finally developed for this research, based on the scale originally developed by Schuhwerk and Lefkoff-Hagius (1995). This scale fit the research purpose and had a high reliability level of 0.9 as reported in Schuhwerk and Lefkoff-Hagius (1995). A recent study by Thieme *et al.* (2015) used this environmental involvement scale with four items without any modifications, with Cronbach's alpha at 0.8. In this research, after the pre-test and the pilot test (see Section 6.3.4), the four items were employed to develop question 8 of the survey questionnaire (see Appendix 4). Table 6-2 lists the items used to assess environmental involvement.

**Table 6-2: Generated items for environmental involvement (EnI)**

| Adapted from                        | Construct                       | Items  |
|-------------------------------------|---------------------------------|--|
| Schuhwerk and Lefkoff-Hagius (1995) | Environmental involvement (EnI) | EnI1. I am concerned about the environment.                            |
|                                     |                                 | EnI2. The condition of the environment affects the quality of my life. |
|                                     |                                 | EnI3. I am willing to make sacrifices to protect the environment.      |
|                                     |                                 | EnI4. My actions impact on the environment.                            |

Second, a measurement scale for environmental self-identity was generated for this research. In Dermody *et al.* (2015), the pro-environmental self-identity scale with five items was used. This scale was adapted from Whitmarsh and O’Neill (2010) and Roberts (1996). The scale’s reported reliability in Dermody *et al.* (2015)’s study was 0.77 for China and 0.80 for the UK. However, this scale was not selected because the concept and scale of environmental self-identity used in Van der Werff, Steg and Keizer (2013) proved to be more relevant for this research.

In this research, the scale of measuring environmental self-identity was selected because of consistently higher reliability levels ranging from 0.86 to 0.88. This scale was adapted by Van der Werff, Steg and Keizer (2013), based on prior studies such as Fielding, McDonald and Louis (2008), Terry, Hogg and White (1999). Van der Werff, Steg and Keizer (2013) employed the measures to investigate the relationship between environmental self-identity and environmental intention/behaviour, which is similar to the purpose of this research. The internal consistency results were reported to be positive (with a Cronbach’s alpha of 0.86). In Van der Werff, Steg and Keizer (2014), environmental self-identity was measured again, using three items, with the Cronbach’s alpha at 0.88. Table 6-3 lists three items for the environmental self-identity measures adapted from Van der Werff, Steg and Keizer (2013, 2014), which were applied for question 9 in the final survey of this research (see Appendix 4).

**Table 6-3: Generated items for environmental self-identity (EnSI)**

| Adapted from              | Construct                          | Items   |
|---------------------------|------------------------------------|---|
| Van de Werff (2013, 2014) | Environmental self-identity (EnSI) | EnSI1. Acting pro-environmentally is an important part of who I am.         |
|                           |                                    | EnSI2. I am the type of person who acts in an environmentally-friendly way. |
|                           |                                    | EnSI3. I see myself as an environmentally friendly person.                  |

Third, the measurement scale for product involvement was selected based on a review of some existing scales. The scale of personal involvement developed by Zaichkowsky (1985) to measure a person’s involvement with products was reviewed. This measure “used semantic differential scale to capture the concept of involvement for products” (Zaichkowsky, 1985, p.349) and originally had 20 items. In comparison, the three-item scale of product development constructed by Jain and Srinivasan (1990) seems more fit to this research: it contains similar words as the focus group participants in phase one used to describe their product involvement, such as “essential”, “useful” and “beneficial” (see Chapter 5). Thus, this three-item scale was selected for the survey instrument.

This research adapted the three-item scale of product involvement developed by Jain and Srinivasan (1990) to be specific to the packaged instant noodle product. Jain and Srinivasan (1990, p. 594) defined product involvement as “an unobservable state of motivation, arousal, or interest evoked by a particular stimulus”. The stimulus in this research context was the instant noodle product in eco-friendly packaging, and for efficiency, the term “eco-friendly packaged instant noodles” were used in the survey instrument. The original item wording was adapted to reflect this change because the original items in the scale were generic (see Table 6.4 for a comparison of original items and item wording used for the research purpose). Berens, Riel and Bruggen (2005) measured product involvement with two items adapted from the product involvement scale developed by Jain and Srinivasan (1990). These items were also used in studies by Bhattacharya and Saha (2015) and by Zhou, Poon and Huang (2012) to measure product involvement with satisfactory reliability of more than 0.8. Table 6.4 presents three items modified to measure product involvement in question 4 of the final online survey (see Appendix 4).

**Table 6-4: Generated items for product involvement (PI)**

| <b>Adapted from</b>             | <b>Original construct</b> | <b>Original items</b>   | <b>Adapted items for survey instrument</b>   |
|---------------------------------|---------------------------|---|--|
| Jain and Srinivasan (1990)      | Product involvement (PI)  | Please describe how important _____ is to you:<br>Non-essential ----- Essential/<br>Not beneficial-----Beneficial/<br>Not needed-----Needed | PI1. I find eco-friendly packaged instant noodles essential.<br><br>PI2. I find eco-friendly packaged instant noodles beneficial.<br><br>PI3. I find eco-friendly packaged instant noodles useful. |
| Berens, Riel and Bruggen (2005) |                           | How essential do you find this type of product?<br><br>How useful do you find this type of product?   |  |

### 6.3.2.2 Subjective Environmental Knowledge

This section presents the development of a measurement scale for the subjective environmental knowledge construct, which represents consumers’ ability for green purchases with regard to eco-

friendly packaging. In the online survey, subjective environmental knowledge was assessed by the measurement scale originally developed by Flynn and Goldsmith (1999) which was reported at the reliability level of 0.93. This scale was used in Peschel *et al.* (2016) with the reliability level reported at 0.86. This scale was developed to specifically measure subjective knowledge, which fit the scope of this research, and therefore was chosen.

There were eight original items. Flynn and Goldsmith (1999) stated that there was flexibility in using from three to eight items (see Table 6-5). For example, Flynn and Goldsmith (1999) measured subjective knowledge of fashion, using five items – 2, 4, 5, 6, and 7. In this research, these five items (2, 4, 5, 6, and 7) were selected and modified to reflect the measurement of research participants’ subjective knowledge relating to eco-friendly packaging. A pre-test was used to check reliability of the scales (see Section 6.3.4). After the pre-test, item 7 was dropped, based on the comments of twenty five participants that they found it confusing and redundant and thus many did not answer. The results of the pre-test showed that the composite reliability of the adapted scale after dropping item 7 increased from 0.654 to 0.798. Hence, the final measure used was a four-item indicator reflecting subjective knowledge of eco-friendly packaging. For example, “I know pretty much about eco-friendly packaging”.

Table 6-5 lists the original items in comparison with adapted items employed in question 10 of the final survey instrument (see Appendix 4). To make it consistent with the abbreviations of other constructs such as environmental involvement (EnI) and environmental self-identity (EnSI), subjective environmental knowledge was labelled as EnK in the research model for statistical tests (see Chapter 7).

**Table 6-5: Generated items for subjective environmental knowledge (EnK)**

| Adapted from               | Construct                                | Original items (flexibility of using from 3 to 8 items)   | Adapted items for survey instrument   |
|----------------------------|--|---|---|
| Flynn and Goldsmith (1999) | Subjective environmental knowledge (EnK) | <p>1. I feel quite knowledgeable about____.</p> <p><b>2. Among my circle of friends, I am one of the experts on_____.</b></p> <p>3. I rarely come across with __ I have not heard of.</p> | <p>EnK1: I know pretty much about eco-friendly packaging.</p> <p>EnK2. I do not feel very knowledgeable about eco-friendly packaging.</p> |

| Adapted from | Construct | Original items (flexibility of using from 3 to 8 items)   | Adapted items for survey instrument   |
|--------------|-----------|---|---|
|              |           | <p><b>4. I know pretty much about ____.</b></p> <p><b>5. I do not feel very knowledgeable about __.</b></p> <p><b>6. Compared to most other people, I know less about ____.</b></p> <p>7. When it comes to ____, I really do not know a lot.</p> <p>8. I have heard of most of the new____ that are around.</p> | <p>EnK3. Among my circle of friends, I am one of the experts on eco-friendly packaging.</p> <p>EnK4. Compared to most other people, I know less about eco-friendly packaging.</p> |

### 6.3.2.3 Perceived Availability of Alternatives and Perceived Time Pressure

Opportunity to make environmentally sound purchases could be explored by two factors such as perceived availability of alternatives and perceived time pressure, following the MAO approach. The scales for these two constructs were developed based on established marketing scales for validity.

Concerning perceived availability of alternatives, a review of existing scales was conducted before selecting an established scale for the purpose of the current research. The first scale to measure availability of green alternatives was used in Magnusson *et al.* (2001). Magnusson *et al.* (2001, p.215) measured perceived alternatives of organic foods with a scale having two items: (1) “How likely is it that organic food is available in your supermarket?” (rated from 1 [not at all likely] to 5 [very likely]); (2) “If you would like to buy organic food, how easy/difficult is it for you to find it?” (rated from 1 [very easy] to 5 [very difficult]). However, it was not clear how the scale was developed and therefore it was not selected.

In this research, the scale to measure perceived availability of alternatives constructed by Vermeir and Verbeke (2008) was adapted. Vermeir and Verbeke (2008) used this scale to assess perceived availability of organic food with reported Cronbach’s alpha of 0.8. The original wording was thus modified to fit the current research context. The pre-test results showed the composite reliability of

the adapted scale at 0.89 and as a result, it was finally chosen for developing question 11 in the survey instrument (see Appendix 4). For this question, the 7-point scale was labelled from 1 “Not at all easily” to 7 “Very easily” to fit the wording of the items. Table 6.6 presents three items for measuring perceived availability of alternatives in question 11 of the final survey instrument (see Appendix 4).

**Table 6-6: Generated items for perceived availability of alternatives (PerA)**

| Adapted from               | Construct                                     | Original items   | Adapted items for survey instrument (minor modification)  |
|----------------------------|---|--|---|
| Vermeir and Verbeke (2008) | Perceived availability of alternatives (PerA) | 1. How easily do you believe you could acquire (product)?                    | PerA1. How easily do you believe you can acquire instant noodles packaged in environmentally-friendly packaging?                        |
|                            |   | 2. How easily do you believe you could find (product) in your neighbourhood? | PerA2. How easily do you believe you can find instant noodles packaged in an environmentally friendly way in your neighbourhood?        |
|                            |   | 3. To what degree do you think that (product) is easily available?           | PerA3. To what degree do you think that instant noodles in environmentally friendly packaging are easily available in the local market? |

In terms of perceived time pressure, some existing scales were reviewed before choosing a suitable scale for the survey instrument. First, the scale to measure chronic time pressure used in Kim and Kim (2008) was reviewed. This scale was adapted from Lumpkin and Darden (1982). The items used were: (1) “I always seem to be in a hurry”; (2) “I never seem to have enough time to do the things I want”; (3) “I have plenty of free time” (Kim and Kim, 2008, p.413). This scale, however, did not assess perceived time pressure for grocery shopping as assumed in the scope of this research (see Chapter 3). Hence, it was not selected for adaptation.

In this research, the measurement of perceived time pressure was based on Putrevu and Ratchford’s scale (1998). Cronbach’s alpha reported for this scale was high at 0.90. A recent work by Teng *et al.* (2014) also used the five items that measure time pressure from the work of Putrevu and Ratchford (1998) with Cronbach’s alpha at 0.90. The original item wording for the question on time pressure was about grocery shopping, for example, “I am in a hurry when I do grocery shopping.”

This fit well with the context of this research because buying packaged instant noodles occurs typically in grocery shopping, as confirmed by the focus group participants in phase one (see Section 5.5.3, Chapter 5). The only modification made was the omission of item 5, since the focus group findings in phase one showed that consumers in Vietnam typically do grocery shopping more frequently than just once a week. Furthermore, item 5 is a reversed scored item which was reported to cause confusion by the participants of the pre-test prior to the official online survey (see Section 6.3.4). Table 6-7 details four items used to measure perceived time pressure in question 7 of the survey questionnaire (see Appendix 4).

**Table 6-7: Generated items for perceived time pressure (PerTP)**

| Adapted from                 | Construct                       | Original items  | Adapted items for survey instrument   |
|------------------------------|---------------------------------|---|---|
| Putrevu and Ratchford (1998) | Perceived time pressure (PerTP) | 1. I find myself pressed for time when I go grocery shopping.<br><br>2. I am in a hurry when I do grocery shopping.<br><br>3. I have only a limited amount of time in which to finish my grocery shopping.<br><br>4. I finish my grocery shopping fast because I have other things to do.<br><br>5. I have more than enough time to complete my weekly grocery shopping. (reverse scored) | PerTP1. I find myself pressed for time when I go grocery shopping.<br><br>PerTP2. I am in a hurry when I do grocery shopping.<br><br>PerTP3. I have only a limited amount of time in which to finish my grocery shopping.<br><br>PerTP4. I finish my grocery shopping fast because I have other things to do.<br><br>5. removed |

#### 6.3.2.4 Perceived Descriptive Norms

This section presents the development of the scales to measure perceived descriptive norms in this research. Some existing scales to measure descriptive norms were reviewed to find the relevant scale for the purpose of this research.

In a cross-country environmental behaviour study, Smith *et al.* (2012) used a 3-item scale to measure descriptive norms in energy saving behaviours (e.g., Most people who are important to me will reduce their energy consumption). Nevertheless, it is not clear where the scale originated and how it was constructed. Moreover, a full description of three items of the scale was not provided. Therefore, the scale was not chosen for adaptation in this research.

The second scale to measure descriptive norms was used in Smith *et al.* (2008) to assess the impact on consumers' buying behaviour for soft drinks. This scale consisted of three items as follows: (1) "How many people who are important to you would buy the soft drink you prefer during the next week?" (rated from 1 [none] to 7 [all]); (2) "How likely is it that people who are important to you buy your preferred soft drink?" (rated from 1 [extremely unlikely] to 7 [extremely likely]); (3) "What percentage of the people who are important to you buy your preferred soft drink?" (rated from 1 [none] to 7 [all]) (Smith *et al.*, 2008, p.319). This scale, however, did not really assess perceived descriptive norms in terms of subjective and local perspectives like this research. This research wanted to assess perceived descriptive norms from both perspectives, subjective and local, to examine whether and how a person's perception of what significant others and those in his/her physical surroundings do will influence his/her intention and behaviour (see Chapter 3). Hence, the Smith *et al.* (2010)'s scale did not fit the research purpose and was not selected.

Another measure of perceived descriptive norms was used in Nolan *et al.* (2008) in a study on American consumers' energy conservation behaviours. The scale fit well with this research as it had items to assess descriptive norms from both subjective and local perspectives. The scale had a reported Cronbach's alpha of 0.79 in Nolan *et al.* (2008). This 3-item scale was also used in a study about environmentally friendly consumer choices by Onwezen, Bartels and Antonides (2014) with reported reliability of 0.72 for individualistic countries (Australia, Canada, the Netherlands, the USA, the United Kingdom and Germany) and 0.69 for collectivist countries (Malaysia and Singapore). The original item wording was adapted to suit the purpose of this research. The reason of the adaptation is because the study by Nolan *et al.* (2008) measured perceived descriptive norms in conserving energy while this research aimed to measure perceived descriptive norms relating to using eco-friendly bags (see Section 5.5.4). Focus group participants in phase one of this research reported that people in their social circles increasingly used eco-friendly bags. To reflect the context of Vietnam where consumers increasingly use eco-friendly bags (such as reusable bags, recycled bags or biodegradable bags), the items were modified from the scale derived from Nolan *et al.* (2008) to measure perceived descriptive norms around using eco-friendly bags. Three items (family members, neighbours, city residents) were incorporated into the final adapted scale. In the survey

question (see Appendix 4), the 7-point scale was labelled from 1 (Very rarely) to 7 (Very often) to fit the wording of the items. Table 6-8 shows all three items measuring perceived descriptive norms in question 12 of the online survey (see Appendix 4).

**Table 6-8: Generated items for perceived descriptive norms (PerDN)**

| Adapted from               | Construct                           | Original items   | Adapted items for survey instrument  |
|----------------------------|-------------------------------------|--|--|
| Nolan <i>et al.</i> (2008) | Perceived descriptive norms (PerDN) | 1. How often do you think your neighbours try to conserve energy?        | PerDN1. How often do you think your family members use eco-friendly bags?    |
|                            |                                     | 2. How often do you think residents of your city try to conserve energy? | PerDN2. How often do you think your neighbors use eco-friendly bags?         |
|                            |                                     | 3. How often do you think Californians try to conserve energy?           | PerDN3. How often do you think residents of your city use eco-friendly bags? |

### 6.3.2.5 Green Purchase Intention, Willingness to Pay and Shopping Effort

This section discusses the development of measurement scales for green purchase intention, willingness to pay and shopping effort. Firstly, some scales to measure purchase intention were reviewed. One scale to measure purchase intention was constructed by Baker and Churchill (1977). This scale was used in Brown, Pope and Voges (2003) to measure online purchase intention with reported reliability at 0.95. The original scale consisted of three items: (1) “Would you like to try this product?” (2) “Would you buy this product if you happened to see it in a store?” (3) “Would you actively seek out this product in a store in order to buy it?” (Brown, Pope and Voges, 2003, p.1671). Accordingly, item 3 of this scale seemed to reflect shopping effort. However, this research aimed to measure shopping effort separately from purchase intention. Therefore, it was decided not to apply this scale.

The next review was about the purchase intention scale originally developed by MacKenzie, Lutz and Belch (1986). This scale was reported at a high Cronbach’s alpha of 0.90. In this measurement, a semantic differential scale was applied to measure the stated tendency of a consumer to engage in a specified purchase behaviour (MacKenzie, Lutz and Belch, 1986). This scale was also used in Kulviwat, Bruner and Al-Shuridah (2009) and Cronbach’s alpha indicated a reliability of 0.92. To

elaborate, in this scale structure, purchase intention was measured through 7-point semantic differential scale with three items: (1) “probable vs. improbable,” (2) “likely vs. unlikely,” and (3) “possible vs. impossible.” In this research, the original item wording was modified to reflect intention to buy instant noodles in eco-friendly packaging. Table 6-9 lists three items used to assess behavioural purchase intention in question 13 of the final survey instrument (see Appendix 4).

**Table 6-9: Generated items for behavioural green purchase intention (BI)**

| <b>Adapted from</b>              | <b>Construct</b>                          | <b>Original items</b>  | <b>Items used for survey instrument</b>   |
|----------------------------------|---|--|---|
| MacKenzie, Lutz and Belch (1986) | Behavioural green purchase intention (BI) | Rate the probability that you would purchase the product (in question)<br>1. from 1 Unlikely to 7 likely<br>2. from 1 Improbable to 7 Probable<br>3. from 1 Impossible to 7 Possible | Please rate the probability that you would purchase instant noodles packaged in an environmentally friendly manner.<br>BI1. from 1 Unlikely to 7 likely<br>BI2. from 1 Improbable to 7 Probable<br>BI3. from 1 Impossible to 7 Possible |

Secondly, existing scales to measure shopping effort were reviewed for selecting relevant items to construct this measure for the current research. Ohanian and Tashchian (1992) measured shopping effort by asking research participants to indicate the number of stores that they would visit when purchasing colour televisions, washing machines or business suits. This approach was not relevant for the purpose of this research. The reason is that Ohanian and Tashchian (1992) specifically examined medium and high involvement purchase situations for shopping products and not convenience products like packaged instant noodles in this research.

After the revision, the items measuring shopping effort were obtained from the work of Ellen (1994) with Cronbach’s alpha of 0.79. In a study on green behavioural intention across Turkey, Finland and Pakistan, Konuk, Rahman and Salo (2015) included an item on shopping effort in the survey (I will make efforts to buy this white goods brand because it is environmentally friendly). Two original items from Ellen (1994) were modified to suit the purpose of measuring shopping effort for eco-friendly packaging in this research. The third item was added into the measure, based on a statement taken from the focus groups: “I would pay more attention looking for eco-friendly packaging when shopping for packaged instant noodles”. In phase two of this research, a pilot test was conducted on thirty three (33) participants to test the survey instrument. With the reported Cronbach’s alpha of 0.8 from the pilot test, the modified scale of shopping effort was satisfactorily

reliable to be included in the final survey instrument (see Section 6.3.4). Table 6-10 list all items used to measure shopping effort in question 14 of the survey (see Appendix 4).

**Table 6-10: Generated items for shopping effort (SE)**

| Adapted from | Construct            | Original items  | Adapted items for survey instrument  |
|--------------|----------------------|---|--|
| Ellen (1994) | Shopping effort (SE) | 1. Choosing products in packaging that is environmentally safe means spending a lot more time shopping. | SE1. I would spend more time choosing instant noodles in packaging that is environmentally friendly.           |
|              |                      | 2. Shopping for recycling or products in recycled packages requires a lot of extra effort.              | SE2. I would spend extra effort shopping for instant noodles in environmentally friendly packages.             |
|              |                      |   | SE3. I would pay more attention looking for eco-friendly packaging when shopping for packaged instant noodles. |

The final construct which was measured in the survey is willingness to pay. To explore and measure the potential effect of purchase intention on willingness to pay, this research used a self-administered online survey. According to Sichtmann and Stingel (2007), it can be challenging to measure consumers' willingness to pay when surveyed consumers complete a self-administered survey. In a self-administered survey, research participants are often asked to indicate directly the level of their willingness to pay for the studied product. This approach is simple and easy to use; however, the external validity could be affected due to the fact that respondents can over-report their willingness to pay (Wertenbroch and Skiera, 2002). To mitigate this risk, the instrument used should be well designed with established scales. For example, Biswas and Roy (2015) measured the behavioural intention to pay the price premium for eco-friendly products, using three items adapted from Chen (2014) and Wang, Liu and Qi (2014). The Cronbach alpha reported for this scale in Biswas and Roy (2015) was medium at 0.66. Hence, this scale was not selected for this research.

For the survey instrument of this research, the measure of willingness to pay was adapted from Laroche, Bergeron and Barbaro-Forleo (2001), which had the reliability of 0.8. This scale was also adopted in Krystallis and Chryssohoidis (2005) to measure the willingness to pay for organic food. Hence, this measure with three items was adapted to reflect the context of this research, which is, willingness to pay for eco-friendly packaged instant noodles. Table 6-11 list all items used to measure willingness to pay in question 15 of the final survey questionnaire (see Appendix 4).

**Table 6-11: Generated items for willingness to pay (WTP)**

| Adapted from                                | Construct                |  | Original items  | Adapted items for survey instrument   |
|---|--------------------------|--|---|---|
| Laroche, Bergeron and Barbaro-Forleo (2001) | Willingness to pay (WTP) |  | 1. It is acceptable to pay 10 per cent more for groceries that are produced, processed and packaged in an environmentally friendly way. | WTP1. It is acceptable to pay some extra money for instant noodles that are packaged in an environmentally friendly way.      |
|   |                          |  | 2. I would accept paying 10 per cent more taxes to pay for an environmental clean-up program.   | WTP2. I would accept paying more taxes as a consumer to pay for eco-friendly packaging.                                       |
|   |                          |  | 3. I would be willing to spend an extra \$10 a week to buy less environmentally harmful products.                                       | WTP3. I would be willing to spend extra money to buy instant noodles that are packaged in a less environmentally harmful way. |

### 6.3.3 Questionnaire Design

In phase two of this research, a self-administered online survey was used (see Section 6.2). To ensure participants could self-administer the questionnaire in an online platform, the researcher should design the questionnaire properly. A properly designed questionnaire can also help improve response rate. Moreover, when participants understand the questions and follow the flow of questions easily, the responses will be deemed valid. The sections from 6.3.3.1 to 6.3.3.4 describe the structure of the survey questionnaire, approaches to address response biases and the translation of the questionnaire. Section 6.3.4 discusses pilot testing before the official online survey.

#### 6.3.3.1 Sequencing of Questionnaire Questions

It is most important to design the flow of the questions properly. To do this, a technique introduced by Saunders, Lewis and Thornhill (2012) in sequencing questions was used. Accordingly, questions were sequenced in a way that sounded logical and natural for research participants. In the survey, three questions on personal information were asked at the beginning, followed by questions relating to consumers' motivation, ability and opportunity for green purchases. The questions relating to

behavioural intention, willingness to pay and shopping effort were placed towards the end of the survey. To ensure the validity of the question sequence, in phase two of this research, a pre-test and a pilot test were organised before launching the official online survey (see Section 6.3.4). The full questionnaire consisted of fifteen questions and was estimated to be completed in around 15-20 minutes. Two versions of the survey questionnaire in English and Vietnamese are provided in Appendix 4 and Appendix 5 respectively.

### **6.3.3.2 Explaining the Purpose of the Survey Questionnaire**

The purpose of the survey with an assurance of confidentiality was explained in the email invitation sent out to members of the consumer online panel of Cimigo, a market research company operating in Vietnam. Cimigo was contracted to provide samples for this online survey. The link to the online survey was included in the email invitation so that Cimigo's online panel members could activate it to join the survey. Survey participants remained anonymous because no personal identity information was collected in the survey process. The questionnaires were delivered in electronic form via the Qualtrics link and accompanied by a two-page participant information sheet (see Appendix 3). Both the questionnaire and the participant information sheet were translated from English into Vietnamese (see Section 6.3.3.4). The participant information sheet provided information about the purpose of this research, the investigators and their contact details, the data collection process, the structure and the administration of the survey, and the rights of research participants. This was to ensure participants had all necessary information about the research before making decisions to participate in the survey at their convenience in the survey period.

### **6.3.3.3 Bias Responses and Resolution**

One issue which could concern the researcher was bias response. Therefore, every step was taken seriously to apply procedural remedies in the process of questionnaire design. The common method variance might arise in this current research if antecedent and dependent variables could not be measured separately by different raters. To address this, two measures were used: (1) remedies relating to the procedure of questionnaire design and (2) remedies relating to statistics (Podsakoff *et al.*, 2003). In terms of remedies relating to the survey procedure, first, a pre-test was conducted, followed by a pilot test to check for any unclear or technical items which could cause random responses or subjective interpretation of the meaning of the questions. In the process of survey development, expert opinions were obtained from the PhD supervisors. Volunteer participants in the pre-testing stage gave comments and feedback to clarify the meanings of all questionnaire items

to ensure face validity and content clarity. Second, a participant information sheet was sent to all potential participants and a consent statement was included in the preamble to the survey to inform the purpose of the research. By clicking the start survey button, participants could indicate their consent before responding to the questionnaire. Third, response anonymity was guaranteed to all participants because no personal details which could identify them were collected. In regard to remedies relating to statistics, the Harman's single factor test suggested by Podsakoff *et al.* (2003) was used in the data preparation process (see Section 7.3, Chapter 7). These measures were all used at the researcher's discretion as resolutions for addressing bias responses in phase two of this research.

#### **6.3.3.4 Questionnaire Translation**

The Vietnamese questionnaire survey was used for all surveyed participants because this research was conducted on Vietnamese consumers (see Appendix 5). As the survey questionnaire was first developed in English, translating it into Vietnamese was needed. The PhD researcher's strength was the high proficiency of language skills in both English and Vietnamese. Thus, a parallel translation technique was applied in the translation process. First, the researcher and one professional translator translated the English version into Vietnamese separately and as a result produced two translation versions for comparison. Then a final translation version was reached, based on comparison and discussion. Next, the final translation was reviewed, revised and back translated by another bilingual academic to ensure the authenticity of the translation.

In translating, equivalence was important between the versions of English and Vietnamese survey questionnaires. An important component of semantic validity relates to the equivalence of key constructs measured in the research (Brennan *et al.*, 2015). There are cases in which no precise term exists to convey meaning across languages, and meaning is generated by the context and use of words and terms (Harkness *et al.*, 2004). In the translating process of this research, where there were no direct equivalent constructs, long descriptions were used to counter the lack of clarity (Brennan *et al.*, 2015). For example, the term "environmental self-identity" was translated into Vietnamese, using a long description of "a person's self-image as somebody who is aware of and concerned about environmental issues and acts accordingly to protect the environment". When agreement was reached and translation was finalised, the researcher launched the Vietnamese version of survey so that participants could understand and give their responses. In short, the translation process was conducted with careful consideration of equivalence and understanding to proceed with the self-administered online survey.

### **6.3.4 Pilot Study Testing**

As a measure to reduce bias response (see Section 6.3.3.3) in this research, a pre-test and a pilot survey were organised to collect respondents' feedback about the survey instrument. A pilot test could be used for the purpose of checking the clarity and content validity of the questionnaire (Saunders, Lewis and Thornhill, 2012). First, a pre-test was performed with the Vietnamese questionnaire given to twenty five Vietnamese business students in paper form for checking the meaning of the questions. Several participants left comments about one item relating to measuring subjective environmental knowledge that they found it redundant and thus did not answer. That item was removed, and therefore there were four items remaining in the measurement of subjective environmental knowledge (see Section 6.3.2.2). Other comments were about one item related to perceived time pressure, which was seen as too confusing to understand (see Section 6.3.2.3). The feedback was used to refine the measurement of perceived time pressure and the final survey instrument (see Section 6.3.2.2 and 6.3.2.3). Next, thirty three acquaintances across different age groups and occupations were invited to do an online pilot survey. These volunteer participants were demographically similar to the sample population of the main survey since they were all Vietnamese, active packaged instant noodle consumers and aged from 20 and above. To check the clarity, reliability, validity and comprehension of the questionnaire, the volunteer participants were asked to estimate the amount of time they spent on completing the pilot survey. They also shared whether or not they could understand the instructions easily, and which questions were not clear to them. Other comments were welcome, such as the language used in the questionnaire. There were some comments on the sequence of the questions and the wording of two questions. The feedback given was incorporated into the final versions of the survey questionnaire (see Appendix 4 and 5).

## **6.4 QUANTITATIVE SAMPLING PLAN**

The sampling technique employed in phase two of this research was the probability sampling approach. A random sample was drawn from Cimigo's consumer online panel consisting of consumers across Vietnam. One advantage of this sampling plan is that the likely participants are real and active consumers in the Vietnamese market. As indicated by Tharenou, Donohue and Cooper (2007), co-relational field studies using probability sampling have stronger external validity for generalisability. To ensure generalisability, it is important to increase response rates by follow-up emails and to take measures to reduce method biases by a robust survey design using variables measured in different ways (see Section 6.3.3.3).

Model complexity was another issue in this research. To deal with this issue, the researcher needed to determine an appropriate sample size. According to Tanaka (1987), with a complex model (of more than six factors), the sampling size could vary, depending on the number of factors. To ensure a proper sample size, 200 subjects would be needed for a standard model (Tanaka, 1987). Alternatively, a minimum of five responses would be required for every measured variable (Hair *et al.*, 2009). Accordingly, this research would collect at least five responses per item for a total of 38 items (see Section 6.3.1). As a result of the calculation, at least 190 responses would be required for sufficient statistical analysis for this research. Determining a proper sample size in the sample plan was dependent on a range of considerations. These considerations included statistical criteria for significance, level of statistical power and effect size (Hair *et al.*, 2009). To ensure the precision of the sampling outcome, researchers need to choose a sample size sufficient to avoid sampling errors (Hair *et al.*, 2009). For a satisfactory statistical analysis, the following factors (statistical criteria for significance, level of statistical power and effect size) were carefully considered in phase two of the current research (see Section 6.4.1, 6.4.2 and 6.4.3).

#### **6.4.1 Statistical Criteria for Significance**

As this research involved many variables in the analysis, multivariate techniques were used. Hair *et al.* (2009) stated that all multivariate techniques are based on the statistical inference of the relationships among variables from a randomly drawn sample of the population under consideration and hence, the researcher needs to draw inferences from a sample for the report. In this research, to ensure statistical significance, the rule of thumb is to use 0.05 for level of significance (Hair *et al.*, 2009). This is consistent with the convention in social sciences, in which 0.05 is also the arbitrary rule of thumb (Olejnik, 1984). The higher the degree of significance required, for example, between 0.05 and 0.01, the lower the likelihood of a Type 1 error (Olejnik, 1984). This type of error occurs when the null hypothesis is incorrectly rejected (Kenkel, 1989). Therefore, this research required a 0.05 level of significance to guarantee that statistical significance was met.

#### **6.4.2 Level of Statistical Power**

Statistical power is another factor which should be carefully considered as it affects the sample size needed for hypothesis testing in this research. According to Hair *et al.* (2009), statistical power is the probability that statistical significance is indicated if it is present. Statistical power measures the likelihood of a Type 2 error, which may happen in case the null hypothesis is accepted when it is actually false (Kenkel, 1989). In other words, a relationship may exist although it may not be

detected in the statistical analysis (Brennan, 2000). Different researchers have different viewpoints about the level of statistical power. For instance, Kenkel (1989) adopted the range of 0.50 while Olejnik (1984) insisted that the statistical power should not be lower than 0.70. As this research was of an exploratory nature, it was expected to see the statistical power level of 0.50 at the minimum.

### **6.4.3 Effect Size**

Effect size was considered before conducting data collection. At any given level of statistical significance, the larger the sample size, the greater the power of the statistical test (Hair *et al.*, 2009). However, the issue of too much power also exists for any research, requiring researchers to consider sample size carefully. The probability of achieving statistical significance is also based on the actual magnitude of the effect of interest (e.g., the correlation between variables) in the population, termed the effect size (Hair *et al.*, 2009). When sample size becomes larger, even small effects can become statistically considerable (Hair *et al.*, 2009). Therefore, the researcher must collect a large enough sample size, not too small to be insensitive to effects, nor too large to be overly sensitive to effects. A sample size of 200 or above would be sufficient to detect moderate effects and have a reasonable statistical power at level of significance of 0.05 (Sekaran, 2005). Hence, this research targeted a sample of more than 200 responses to make certain that it met the requirements for effect size.

### **6.4.4 Summary of Sampling Plan**

Section 6.4 described the sampling plan adopted in this research. Overall, this research selected a formula that a minimum of five responses would be required for every measured variable. Using this formula, at least 190 responses would be necessary for suitable statistical analysis in this research. The research required a level of significance of 0.05 to make sure that statistical significance was attained. The statistical power level was at least 0.50 and a sample of more than 200 responses would be satisfactory for this research to meet the requirements for effect size.

## **6.5 ADMINISTRATION OF THE SURVEY**

The online survey was launched in January 2016. Cimigo, a UK-based marketing research agency operating in Vietnam, was contracted to recruit research participants from their Vietnamese consumer online panel. The online survey link via RMIT Qualtrics - a software system that carries out surveys online - was sent to potential participants' emails by the contracted marketing research

company. Due to the confidentiality agreement with that company, email addresses of participants were unknown to the researcher. Three days and one week after the first emails, follow-up emails were sent to consumer online panel members so as to increase response rate. In addition, a small incentive (20,000 VND, equivalent to 0.87 USD) was given to each completed response and participants could donate it to a charity organisation of their choice. A list of charity organisations was included in an online link at completion of the online survey. Research participants could choose to donate the incentive by clicking the link to their selected charity organisation. To ensure the representativeness of the sample, the market research company was requested to recruit online participants in various cities of Vietnam, including Hanoi in the North, Da Nang in the Centre and Ho Chi Minh City in the South. Using the Survey Protection settings available in Survey Options in the Qualtrics system, a password was set to protect the survey, specify a date and time for the survey to close and keep people from taking the survey more than once. Also, the survey was designed to make sure that participants answered all its questions to avoid missing data. Participants could withdraw from the online survey any time simply by turning off the survey link and/or closing the window browser.

Upon closing the survey, data from online questionnaires on RMIT Qualtrics were imported to Statistical Packaged for Social Sciences (SPSS) format, which meets SPSS 20 statistical software requirements for analysis. A naming convention was applied to code data formats and variable names to ensure clarity and consistency in the statistical analysis of phase two.

## **6.6. DATA PREPARATION**

There were four steps of data preparation prior to statistical analysis in phase two of this research: (1) exporting and cleaning data, (2) checking for outliers, (3) testing for normality, and (4) testing for common method bias.

First, the collected data from online surveys was exported into a standardised format to use in statistical analyses. To ensure usable data for statistical analysis, when exporting data from Qualtrics system to SPSS, it is important to detect cases with fast response time because surveys that are completed overly fast may be an indication that the participant has not read all the questions. The issue of completion time in self-administered internet surveys has been highlighted in prior methodological literature (e.g., Leiner, 2013; Lowry *et al.*, 2016; Mason and Suri, 2012; Meade and Craig, 2012; Wang and Strong, 1996). If respondents complete a 15-minute survey in 3 minutes, it is unlikely that they actually read the questions (Leiner, 2013). Completion time is quite

useful in identifying cases of meaningless data (Leiner, 2013). These cases may reduce overall accuracy of data (Wang and Strong, 1996), and may increase type II errors (i.e., not rejecting wrong null-hypotheses, Meade and Craig, 2012). This problem can be addressed by eliminating responses with unreasonably fast response time, because research shows that some respondents put less time and effort into tasks, which might result in a sample that distorts the results of a study (Lowry *et al.*, 2016; Mason and Suri, 2012). In this research, all responses completed in less than 3 minutes were considered invalid and thus removed from the dataset (see Section 7.3.1).

Second, item outliers were checked. Testing for outliers is often undertaken before normality testing for multivariate analysis (Hair *et al.*, 2009). Checking for outliers is important as models may fail to fit the data due to the presence of influential outliers or extreme data points (Hair *et al.*, 2009). Univariate outliers can be detected by visual checking of histograms and plots of individual variables (Pallant, 2007). Multivariate outliers can be discovered by visual inspection based on the “Mahalanobis distance (D) statistic ( $M^2/df$ ), which indicates the distance in standard deviation units between a set of scores for an individual case and the same means for all variables” (Kline 2005, p. 51). In this research, the first step for investigating outliers for the survey items was at univariate level. The second step was to check if the detected univariate outlier cases were also at multivariate levels. Then, decisions were made regarding what items should be removed or retained for further testing (see Section 7.3.2).

Third, test of normality was the next step of data preparation. Normality means that the data is sampled from a normal distributed population (Allen and Bennett, 2010). According to Tabachnick and Fidell (2007), screening continuous variables for normality should be done by either statistical or graphical methods in the data preparation process of any multivariate analysis. Preceding the modelling in this research, data was assessed for compliance with normality assumptions, using SPSS statistical methods. In this test of normality, skewness and kurtosis index were checked. This research used criteria of normality compiled from Hair *et al.* (2009) and Kline (2005). Hair *et al.* (2009) stated that absolute values of skewness and kurtosis exceeding 2.0 and 7.0 respectively are indicative of moderately non-normal distributions. Kline (2005) recommended that absolute kurtosis values greater than 10.0 are indicative of problematic non-normality, and values greater than 20.0 are indicative of serious deviations from multivariate normality. Data collected for this research were checked to ensure they stayed within acceptable normality levels (see Section 7.3.3).

The final step in data preparation was the test of common method bias. To do this test, Podsakoff *et al.* (2003) suggested using the Harman’s single factor test to detect significant bias (if any) in the

final dataset owing to the data measurement method. Accordingly, the result of the unrotated factor solutions is assessed to see the number of factors accounting for the variable tested (Koh and Kim, 2003). Depending on different research areas and topics, the proportion of variance accounted for common method biasness may vary (Podsakoff *et al.*, 2003). For example, in behavioural-related research, common method bias is reported when the co-variance accounted for a single factor is greater than 40.7 per cent (Podsakoff *et al.*, 2003). This research made sure that common method bias was not an issue with the final dataset prior to further descriptive and statistical analysis (see Section 7.3.4). The full data preparation process is reported in Section 7.3, Chapter 7.

## **6.7 ETHICS AND CONFIDENTIALITY IN PHASE TWO OF THE RESEARCH**

Ethical issues were addressed properly in phase two of this research, ahead of online data collection. In compliance with the National Statement on Ethical Conduct in Human Research by National Health and Medical Research Council (NHMRC) and the Australian Code for the Responsible Conduct of Research, as required at RMIT University, permission for conducting quantitative research was obtained. The ethics application relating to quantitative research (phase two) was endorsed by the Business College Human Ethics Advisory Network (BCHEAN) in November 2015. The ethics approval number is 19715. Accordingly, this quantitative data collection was undertaken via a consumer online panel of a market research company – Cimigo.

Cimigo follows the ethical Code of Practice on Market and Social Research laid down by ESOMAR (European Society for Opinion and Marketing Research). Cimigo also abides by the Australian Market and Social Research Society (AMSRS) guidelines which are similar to the ESOMAR guidelines and refer to the ESOMAR guide but have been contextualised for the purpose of this research. The AMSRS guidelines regarding the practices of using incentives given on completion of fieldwork were strictly followed in online data collection of this research. Accordingly, incentives in cash were not directly given to research participants. Instead, for one completed response, participants were instructed to donate 20,000 VND (0.87 USD) to a charity organisation of their choice. Also, no personal data which might identify participants were collected in the online survey. A copy of the NHMRC was made available to Cimigo so that they could refer to and abide by it when recruiting participants. Participants were notified of the research objectives, the research approach, and the method for collecting, reporting and storing data. Participants received an invitation email, including the Participant Information Sheet and the survey link to complete an online survey within approximately 15-20 minutes (see Appendix 3). Following advice of Tharenou, Donohue and Cooper (2007), in order to gain informed consent from research

participants, they were advised of the research purpose; anticipated benefits; data collection methods and procedures; any demands on potential participants, including time duration; the risks of harm (if any); the limitation on the confidentiality of results; the participants' freedom to refuse to participate or to withdraw; information on results of the research; the contact names and numbers for questions/concerns, and the address of the ethics committee. A statement relating to informed consent was also embedded at the beginning of the online survey questionnaire (see Appendix 4 and 5). Volunteer participation in online surveys was expected, and participants were guaranteed the right to either complete or withdraw from the online survey at any time in the survey period.

Research participants stayed anonymous because no personal details were collected. All their responses were kept secure and confidential. Each completed questionnaire was coded on Qualtrics. Data obtained was kept confidential and only aggregated results were mentioned in the research output. Research data were kept in a secured computer in the researcher's office for five years upon completion of the research. After that, all data were destroyed as required by ethics standards of RMIT University. In sum, ethical standards were considered and implemented in the research process, including the reporting of the findings to minimise the possibility that the findings were misleading, while still maintaining ethical standards relating to conducting human research in this research. This research strictly followed ethical frameworks relating to human research at RMIT University. Details are available at

<http://www1.rmit.edu.au/browse/Our%20Organisation%2F;ID=getcoac7sf66;STATUS=A>

## **6.8 QUANTITATIVE DATA ANALYSIS METHOD**

This section discusses the selection of the quantitative data analysis method of this research. It also justifies the application of Partial Least Squares Structural Equation Modelling (PLS-SEM) as the quantitative data analysis method in phase two.

Structural equation modelling (SEM) was considered for use in this research. Gefen *et al.* (2000) stated that SEM is a widely used data analysis method in academic research. The main reason for its wide use is that SEM can examine both the overall fit of a model and the structural model (Chin, 1998). Moreover, SEM can assess the hypothesised structural connections not only among studied variables but also between a studied variable and its respective dimensions or items (Urbach and Ahlemann, 2010). With these analytical features, SEM can be used with flexibility to perform a range of multivariate statistical analyses, including path analysis and factor analysis (Gefen, Straub and Boudreau, 2000; Urbach and Ahlemann, 2010). Researchers can consider two SEM

approaches, namely, co-variance-based approach (CB-SEM) and component-based approach, such as partial least squares (PLS-SEM) (Marcoulides, Chin and Saunders, 2009). There are distinctions between the two SEM approaches owing to their statistical assumptions and the way they treat the measurement models of constructs (Jöreskog and Word, 1982 as cited in Sarstedt *et al.*, 2016). The differences are detailed as below:

- “CB-SEM calculates the co-variances of a set of variables (common variance), and only that variance is included in any solutions derived” (Sarstedt *et al.*, 2016, p.4002). Thus, in CB-SEM, the maximum likelihood (ML) function is used, by which the observed variables need to follow a normal distribution (Chin, 1998; Hair *et al.*, 2011).
- PLS-SEM is different from CB-SEM in the sense that it is used to “account for the total variance in the observed indicators rather than to explain only the correlations between the indicators” (Tenenhaus *et al.*, 2005 in Sarstedt *et al.*, 2016, p.4003). Thus, PLS provides least square estimation for both single and multi-component models (Chin, 1998).

The PLS approach can help avoid several restrictions needed for ML techniques (Fornell and Bookstein, 1982). To select a suitable statistical analysis method for phase two, this research considered the advantages and disadvantages of both CB and PLS approaches and justified the selection as follows.

First, it argues for the advantages of PLS-SEM in statistical analysis. Rouse and Corbitt (2008) stated that PLS-SEM is considered a less rigorous method for investigating relationships between latent variables (LVs) in academic research. Researchers criticised PLM-SEM due to the small sample size argument (Marcoulides, Chin and Saunders, 2009) or the inability of PLS-SEM to mimic CB-SEM (McDonald, 1996). Despite all the critiques, researchers are now accepting PLS-SEM as a vigorous statistical analysis method with an increasing use in research on marketing, management and other business disciplines (Hair, Ringle and Sarstedt, 2011; Hair *et al.*, 2012; Henseler, Ringle and Sinkovics, 2009; Lowry and Gaskin, 2014; Sarstedt *et al.*, 2014). This is due to several reasons, one of which is because PLS-SEM can test complex models with many different constructs and indicators (Rigdon, 2014). With its specific characteristics, PLS-SEM provides a useful tool for research due to the high degree of flexibility it offers for the interaction between theory and data (Chin, 1998). This flexibility is necessary, given the current state of limited research in green consumption in Vietnam, especially with regard to developing a more holistic way of causes and effects in green purchase intention.

Second, it identifies the differences between CB-SEM and PLS-SEM approaches. There are different goals of CB-SEM and PLS, as well as their different calculations performed with different techniques (Lowry and Gaskin, 2014). CB-SEM is best when researchers want to test the full nomology of a known theory and general model fit (Hair, Ringle and Sarstedt, 2011). In case distributional assumptions for conducting CB-SEM are not fully satisfied, PLS-SEM can be used (Hair, Ringle and Sarstedt, 2011). PLS composes constructs from the factor scores and uses these in subsequent calculations, resulting in explicit factor scores (Fornell and Bookstein, 1982). In this way, PLS can avoid factor indeterminacy, and hence can be used for both confirmatory and exploratory studies (Hair, Ringle and Sarstedt, 2011), especially “for exploratory analysis and for testing developmental theories” (Fornell and Bookstein, 1982, p. 451). Therefore, “PLS does not require the theory being tested to already have empirical support that is well established from other sources” (Gefen, Straub and Boudreau, 2000). This feature of PLS supports the current research which aimed to explore relationships of antecedents and green purchase intention, willingness to pay and shopping effort in a research context where empirical statistics are lacking. Therefore, this research adopted the stance of not viewing these two methods (CB-SEM and PLS-SEM) as competitive statistical methods; rather, they are considered as alternate methods which could be used with some rules of thumb (Hair, Ringle and Sarstedt, 2011; Hair *et al.*, 2017). This research followed the rules of thumb suggested by Hair, Ringle and Sarstedt (2011), Hair *et al.* (2017) and Henseler, Ringle and Sinkovics (2009) to choose the fit of the statistical analysis method. This is outlined in the following sections (Section 6.7.1 and 6.7.2).

### **6.8.1 Application of Rules of Thumb to Select between CB-SEM and PLS-SEM**

The decision to select the appropriate statistical analysis method for this research requires a precise understanding of the assumptions underlying CB-SEM and PLS-SEM. Several rationales for the use of PLS-SEM or CB-SEM have been discussed in the methodological literature (Hair *et al.*, 2016). While CB-SEM is a more commonly used method for testing a known theory, PLS-SEM is more appropriate when prediction is an important part of answering the research questions (Nitzl, 2016; Reinartz *et al.*, 2009). Researchers can apply some rules of thumb to select the most suitable statistical analysis method (Hair *et al.*, 2016). Hair, Ringle and Sarstedt (2011) and Hair *et al.* (2017) stated that the selection should consider research objectives, measurement model specification, research modelling, data characteristics and model evaluation. Table 6-12 summarises the rules of thumb for making a statistical analysis method choice between CB-SEM and PLS-SEM.

**Table 6-12: Summary of the Rules of Thumb in selecting between CB-SEM and PLS-SEM**

|   | <b>Criteria to evaluate</b>  | <b>CB-SEM</b>                       | <b>PLS-SEM</b>                      |
|---|--|-------------------------------------|-------------------------------------|
| 1 | <p>Research objective and research modelling</p> <ul style="list-style-type: none"> <li>• Predicting key constructs</li> <li>• Theory testing, theory confirmation or comparison of alternative theories</li> <li>• Exploratory of an extension of an existing structural theory</li> <li>• Optimal for prediction accuracy</li> <li>• Optimal for parameter accuracy</li> </ul> | <p>√</p>                            | <p>√</p> <p>√</p> <p>√</p>          |
| 2 | <p>Measurement model specification</p> <ul style="list-style-type: none"> <li>• If formative constructs are part of the structural model</li> <li>• If error terms require additional specification such as co-variance</li> </ul>   | <p>√</p>                            | <p>√</p>                            |
| 3 | <p>Structural Model</p> <ul style="list-style-type: none"> <li>• If the structural model and/or measurement model is complex (many constructs = 6+)</li> <li>• If the structural model specifies non-recursive relationships</li> </ul>  | <p>√</p>                            | <p>√</p>                            |
| 4 | <p>Data characteristics and algorithm</p> <ul style="list-style-type: none"> <li>• Data meet distribution assumptions</li> <li>• Data do not meet distribution assumptions</li> <li>• Non-normal distribution</li> <li>• Normal distribution</li> <li>• Small sample size consideration</li> <li>• Large sample size consideration</li> </ul>                                    | <p>√</p> <p>√</p> <p>√</p> <p>√</p> | <p>√</p> <p>√</p> <p>√</p> <p>√</p> |
| 5 | <p>Model evaluation</p> <ul style="list-style-type: none"> <li>• Use latent variable scores in</li> </ul>  |                                     | <p>√</p>                            |

|  | <b>Criteria to evaluate</b>  | <b>CB-SEM</b>   | <b>PLS-SEM</b> |
|--|--|---|----------------|
|  | subsequent analysis  |   |                |
|  | <ul style="list-style-type: none"> <li>• Requires global goodness of fit criterion</li> <li>• Need to test for measurement model invariance</li> </ul> | <p style="text-align: center;">√</p> <p style="text-align: center;">√</p> |                |

Source: Compiled from Chin and Newsted (1999, pp.1307-1341), Hair, Ringle and Sarstedt (2011, p.144; 2017, p.444) and Henseler, Ringle and Sinkovics (2009, pp.300-303)

When deciding the suitable statistical analysis method, researchers often question whether their research is confirmatory or exploratory. This is an important concept to understand when analysing data with SEM since a general rule of thumb for choosing CB-SEM is that it should be used for confirmatory research while PLS-SEM is preferred for exploratory research, but can also be used for confirmatory research (Hair *et al.*, 2016). This research applied the rules of thumb carefully to select a suitable statistical analysis method.

In consideration of the statistical analysis method, the researcher took the suggestion by Hair *et al.* (2017) to clarify whether this research's objective was exploratory or confirmatory. In exploratory research, researchers may not have enough information to make conceptual distinctions or to propose explanatory relationships, and the approach to the problem must be flexible (Hair *et al.*, 2017). Exploratory research can be used to generate hypotheses from qualitative methods, but it is also used to test hypotheses using quantitative research. For example, when hypotheses are generated by research in another context, e.g., in the USA, researchers may focus on testing the same or similar hypotheses in another country, e.g., in Vietnam. Thus, exploratory research can address all types of research questions, including what, when, why, and how. In contrast, confirmatory research examines previously specified hypotheses that predict specific outcomes based on underlying causal theory, and the hypotheses usually are derived from established causal theories or previous studies conducted within the same context (Hair, Ringle and Sarstedt, 2011). This research was of an exploratory nature because the hypotheses were generated from the literature review and updated, using consumer insights collected in phase one which used qualitative methods. The research questions were mainly how and what (see Section 3.5.2, Chapter 3). Taking the rules of thumb into consideration (see Table 6-12), this research adopted PLS-SEM as the statistical analysis method because of several reasons as outlined below:

- This research was of an exploratory nature and the main research questions were how and what.
- This research aimed for prediction accuracy, which are implications of PLS-SEM.
- This research used complex modelling of a research model with ten constructs (i.e. more than six constructs) and a large number of latent variables (LVs).
- The focus of the analysis was on prediction of factors associated with green purchase intention. Therefore, the use of LV scores was essential to examine the relationships between the LVs and PLS-SEM could help achieve this.
- The research purpose was to explore relationships (if any) among factors identified from prior theoretical knowledge and from consumer insights in a unique context of the emerging market of Vietnam where empirical support is lacking. Part of the research model included variables such as shopping effort, willingness to pay and perceived descriptive norms which were not previously empirically tested in regard to green purchase intention for low-involvement products. “PLS does not require the theory being tested to already have empirical support that is well established from other sources” (Gefen *et al.*, 2000), making this statistical technique suitable for the purpose of this research.

### **6.8.2 Partial Least Squares Structural Equation Modelling (PLS-SEM)**

This section presents details of PLS-SEM as the data analysis method of this research. PLS was proposed by Herman Wold in the 1960’s and the 1970’s (Chin, 1998). In PLS, least squares algorithms are calculated, based on which path models are evaluated through two steps of assessment of the measurement model and the structural model (Henseler, Ringle and Sinkovics, 2009). The structural model is also termed as the inner model and the measurement model as the outer model (Henseler, Ringle and Sinkovics, 2009). The inner model assesses the relationships between LVs whereas the outer model assesses the relationships between a LV and its respective dimensions or items (Chin, 1998). As described in Henseler, Ringle and Sinkovics (2009, pp.287-288), “the basic PLS algorithm involves the following three stages”:

“Stage 1: Iterative estimation of LV scores consisting of a four-step iterative procedure that is repeated until convergence is obtained:

- 1) Outer approximation of the LV scores: in this step, outer proxies of the LVs are calculated as linear combinations of their respective indicators.
- 2) Estimation of inner weights: Inner weights are calculated for each LV in order to reflect how strongly the other LVs are connected to it.

- 3) Inner approximation of the LV scores: Inner proxies of the LVs are calculated as linear combinations of the outer proxies of their respective adjacent LVs, using the afore-determined inner weights.
- 4) Estimation of the outer weights: The outer weights are calculated as the co-variances between the inner proxy of each LV and its indicators.

These four steps are repeated until the change in outer weights between two iterations drops below a predefined limit. The algorithm terminates after step 1, delivering LV scores for all LVs.

Stage 2: Estimation of outer weights/loading and path coefficients: Loadings and inner regression coefficients are then calculated in a straightforward way, given the constructed indices. In order to determine the path coefficients, for each endogenous latent variable, a (multiple) linear regression is conducted.

Stage 3: Estimation of location parameters or the structural equations: The structural equations are estimated by individual ordinary least squares (OLS) multiple regressions where the LVs  $\xi_j$  are replaced by their estimates  $\hat{\xi}_j$ . Once the factor scores are estimated by PLS algorithm, the path coefficients can be estimated by ordinary least squares (OLS)”.

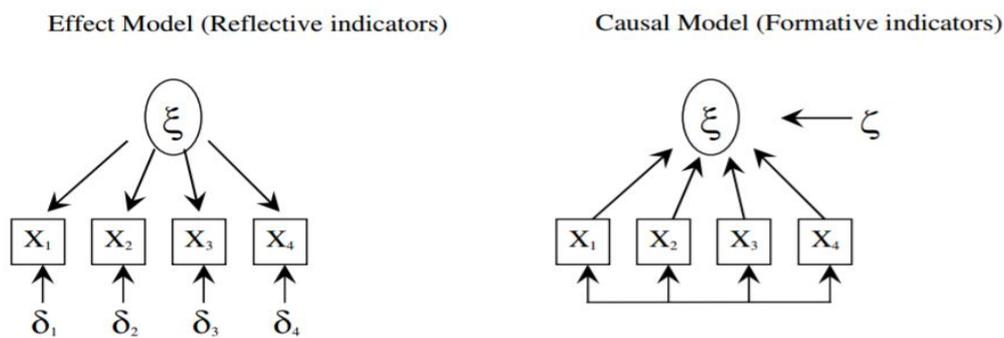
(Source: Compiled from Henseler, Ringle and Sinkovics, 2009, pp. 277-319; Tenenhaus *et al.*, 2005, pp. 177-205)

In this research, SmartPLS version 3.0 was selected to conduct all PLS algorithms in statistical data analysis. SmartPLS is the software specialised for PLS path models, built on a Java Eclipse platform (Sarstedt *et al.*, 2011). Data files can be imported into the software, allowing flexibility in running the required tests (Sarstedt *et al.*, 2011). When using Smart PLS, the structural model can be drawn for the LVs and the indicators or items can be assigned to each LV (Sarstedt *et al.*, 2011). After fitting a model, coefficients are added to explain hypothesised relationships between LVs and then detailed output reports are produced for interpretation (Sarstedt *et al.*, 2011). SmartPLS 3.0 was able to produce all statistical analyses for the purpose of this research.

### **6.8.3 Formative vs. Reflective Constructs**

This section specifies the constructs or LVs included in the research model. Based on the literature on SEM methodology, constructs or LVs can be modelled as formative or reflective (Jarvis, MacKenzie and Podsakoff, 2003). Formative constructs have formative indicators each of which

has a different effect on the underlying construct (Jarvis, MacKenzie and Podsakoff, 2003). Therefore, a set of formative indicators add together to form the conceptual and empirical meaning of the respective construct (Jarvis, MacKenzie and Podsakoff, 2003). Thus, the direction of causality flows from indicators to respective constructs or LVs (Jarvis, MacKenzie and Podsakoff, 2003). With regard to reflective constructs, they use parallel indicators or measures which co-vary with each other and which measure the same underlying construct (Jarvis, MacKenzie and Podsakoff, 2003). According to Petter *et al.* (2007), a reflective construct is assumed to be unidimensional and any indicator that has to be removed would not consequently affect the content validity. The causal direction is from the reflective construct (i.e., LV) to its respective indicators (Jarvis, MacKenzie and Podsakoff, 2003). Reflective indicators should be internally consistent as all indicators are equally valid for the underlying construct (Petter *et al.*, 2007). Figure 6-1 shows the visual presentations of reflective vs. formative constructs for comparison.



**Figure 6-1: The diagram of reflective vs. formative constructs (Reproduced from Chin, 1998)**

All constructs or LVs of this research were modelled as reflective constructs. This is because the causality flows of each LV in the research model were built based on the literature review presented in Chapter 3. Furthermore, independent variables or constructs, identified from the literature and validated in phase one, were based on the MAO approach, and not necessarily were built as sub-constructs of motivation, ability and opportunity. Instead, the independent variables or constructs of this research were examined directly in association with the dependent variable or construct of green purchase intention in the causality flow. As recommended by Henseler, Ringle and Sinkovics (2009), prior knowledge should be used to determine the causality flow as it helps prevent measurement model misspecification. In this research, prior knowledge through a literature review was used to determine the causality flow in the conceptual model (see Chapter 3). Furthermore, internal consistency should be considered important for a reflective construct (Petter *et al.*, 2007). To make sure the measures are reliable, internal reliability measures are essential to any academic

research (Petter *et al.*, 2007). In terms of reflective constructs, indicator or item loadings could be examined to reflect the correlation between the indicators or items and corresponding component scores (Chin, 1998; Gefen, Straub and Boudreau, 2000). Given these methodological recommendations, the statistical analysis in this research examined the loadings of each item of the LVs included in the final measurement model to ensure internal consistency (see Chapter 7).

#### **6.8.4 Measurement Model Assessment**

The first assessment in PLS-SEM involves the outer model, also called the measurement model. According to Henseler, Hubona and Ray (2016), in the measurement model assessment, if the specified measurement (outer) model does not possess minimum required properties of acceptable reliability and validity, the structural (inner) model estimates become meaningless. In other words, a condition to proceed to the inner structural model assessment is that the outer measurement model has satisfactory reliability and validity (Henseler, Ringle and Sinkovics, 2009; Henseler, Hubona and Ray, 2016). To validate a reflective measurement model as required in this research, it is essential to test its internal consistency, indicator reliability, convergent and discriminant validities (Lewis, Templeton and Byrd, 2005; Straub, Boudreau and Gefen, 2004). All these tests are presented in Section 7.6, Chapter 7.

- *Internal Consistency*

Cronbach's alpha (CA) can be used to evaluate a measurement item's internal consistency. High CA values indicate that the indicators or items forming the studied construct have the same range and meaning, thus, reliability is demonstrated, based on indicator inter-correlations (Cronbach, 1951). In PLS-SEM, internal consistency is often measured with composite reliability (CR) (Chin, 1998). The reason is that CR takes into consideration of the fact that indicators or items have different loadings (Chin, 1998) whereas CA assumes that all indicators are equally weighted (Werts, Linn and Jöreskog, 1974). Whether or not CR or CA is used, internal consistency reliability is satisfactory at the value of 0.7 and above in the early phase, and 0.8 and above in mature phases of research (Nunnally and Bernstein, 1994). In this research, CA and CR were ensured at value of 0.7 and above (see Section 7.6, Chapter 7).

- *Indicator Reliability*

Indicator reliability is another criterion to be tested in the measurement model assessment. Indicator reliability is defined as the degree to which a variable is in line with what it is measuring (Urbach and Ahlemann, 2010). As a rule of thumb for indicator reliability, indicator loadings should be

significant at least at the 0.05 level; moreover, the loading must be 0.7 and above (Chin, 1998). At the loading value of 0.7 and above, an LV can explain at the minimum 50 per cent of its indicator's variance (Chin, 1998). The significance test of the indicator loadings can be done, using bootstrapping (Urbach and Ahlemann, 2010). In this test, removing an indicator to ensure consideration of PLS characteristics of consistency should be undertaken with caution (Henseler, Ringle and Sinkovics, 2009). Only if an indicator's reliability level is lower than required and if the removal of that indicator causes a considerable increase of CR can researchers consider removing one indicator (Henseler, Ringle and Sinkovics, 2009). This research guaranteed all of these requirements were followed in the process of statistical analysis (see chapter 7).

- *Convergent Validity*

Convergent validity is the next factor to be assessed in phase two of this research. Convergent validity is defined as “the degree to which individual items reflect a construct converging in comparison to items measuring different constructs” (Urbach and Ahlemann, 2010, p.19). Convergent validity can be evaluated by the value of average variance extracted (AVE). Fornell and Larcker (1981) proposed that convergent validity is satisfactory at AVE of 0.5 and above. In this research, the AVE values of all studied constructs were satisfied at 0.5 and above, meaning that sufficient convergent validity was achieved (see Chapter 7).

- *Discriminant Validity*

Discriminant validity is part of the measurement model assessment in phase two of the current research. By definition, discriminant validity can differentiate measures of a construct from measures of another construct (Chin, 1998). In this sense, the purpose of checking discriminant validity of the measurement model is to test whether the indicators or items included in one construct do not unintentionally measure other constructs (Urbach and Ahlemann, 2010). In PLS, discriminant validity can be measured by cross loading (Chin, 1998) and Fornell-Larcker's criterion (Fornell and Larcker, 1981). In terms of cross loading, it can be estimated in SmartPLS by correlating each LV's component scores with all the other items (Chin, 1998). To satisfy the discriminant validity test, each indicator's loading should be greater for its construct than for any other construct in the research model (Chin, 1998). Moreover, to ensure discriminant validity, Fornell-Larcker's criterion is included in the measurement model assessment. This criterion “requires an LV to share more variance with its assigned indicators than with any other LVs and therefore, the AVE of each LV should be greater than the LV's highest squares correlation with any other LVs” (Fornell and Larcker, 1981, pp.39-50).

Overall, this research used four criteria to test reliability and validity of the measurement model. A summary of validity guidelines used to undertake an assessment of the measurement model in this research is summarised in Table 6-13.

**Table 6-13: Summary of validity guidelines for assessing reflective measurement model**

|   | Validity Type          | Criterion   | Guidelines  |
|---|------------------------|---|---|
| 1 | “Internal consistency  | CR  | CR>0.7 (for exploratory study) - applicable for this research<br>CR>0.8 (for advanced research)<br>CR between 0.6 and 0.7 may be acceptable<br>CR<0.6 (lack of reliability)   |
| 2 | Indicator reliability  | Indicator loadings                                | Item’s loading>0.7 and significant at 0.05 level<br>Item’s loading between 0.5 and 0.7 (significant level at least 0.05 for exploratory study) – applicable for this research   |
| 3 | Convergent reliability | AVE   | AVE>0.5   |
| 4 | Discriminant validity  | Cross loading<br><br>Fornell and Larcker criteria | Item’s loading of each indicator is highest for its designated construct.<br><br>The square root of the AVE of a construct should be greater than the correlations between the construct and other constructs in the model” |

Source: Compiled from Hair, Ringle and Sarstedt (2011, p.144; 2017, p.444) and Henseler, Ringle and Sinkovics (2009, pp.300-303)

This research aimed to explore green purchase intention with regard to eco-friendly packaging in the packaged food product category; therefore, the proposed measurement model was tested to explore the relationships between LVs (see Chapter 7). The following criteria were used in the analysis to conduct reliability and validity assessment of the measurement model:

- CR is greater than 0.7.
- Item’s loading is greater than 0.7 or at least in the range from 0.6 and 0.7 and significant level of at least 0.05.
- AVE value for each construct is larger than 0.5.
- Item’s loading of each indicator is the highest for its designated construct.

- The square root of AVE of a construct should be greater than the correlations between the construct and other constructs in the research model.

Source: Compiled from Hair, Ringle and Sarstedt (2011, p.144; 2017, p.444) and Henseler, Ringle and Sinkovics (2009, pp.300-303)

The discussion on research results is provided in Chapter 7. Details of the analysis of results of the measurement model assessment are given in Section 7.6, Chapter 7.

### **6.8.5 Structural Model Assessment**

The second step in PLS model assessment is the structural model which is also called the inner model. This step can only be conducted after the measurement model assessment has been satisfactorily tested in terms of reliability and validity. Validating the structural model helps systematically examine whether or not research hypotheses proposed by the structural model are supported by research data collected (Urbach and Ahlemann, 2010). In PLS-SEM, there are two measures to evaluate a structural model, namely, coefficient of determination ( $R^2$ ), and path coefficients (Urbach and Ahlemann, 2010). By definition, the first measure, which is coefficient of determination ( $R^2$ ), evaluates the relationship of a LV's explained variance to its total variance (Chin, 1998). If  $R^2$  values are 0.67 and higher, then the examined relationships are considered to be substantial (Chin, 1998). If  $R^2$  values are around 0.33 and 0.19, the examined relationships are average and weak respectively (Chin, 1998). The second measure, path coefficient value, reflects the strength of the relationship between two LVs (Hair, Ringle and Sarstedt, 2011). To examine this relationship, path coefficients, algebraic sign, magnitude and significance should all be considered (Wong, 2013), which set the foundation for hypothesis testing in phase two of this research. This research followed the criteria proposed by Wong (2013) that path coefficients should be more than 0.100 to represent a certain impact within the model and the level of significance ( $p$ ) should be at least 0.05. Table 6-14 summarises the rule of thumb for criteria used for the structural model assessment in this research.

**Table 6-14: Summary of validity guidelines for assessing reflective structural model**

|   | <b>Validity Type</b> | <b>Criterion</b>                       | <b>Guidelines</b>  |
|---|----------------------|--|--|
| 1 | Model validity       | Coefficient of determination ( $R^2$ ) | 0.67 – substantial<br>0.33 – moderate<br>0.19 – weak     |
| 2 |                      | Path coefficients                      | At least 0.100 and at significant level of at least 0.05 |

Source: Compiled from Hair, Ringle and Sarstedt (2011), Hair *et al.* (2017) and Henseler, Ringle and Sinkovics (2009) and Wong (2013)

In this research, the structural model was evaluated using the following tests (see Section 7.7, Chapter 7):

- Coefficient of determination must be 0.19 and above.
- Path coefficient between LVs must be 0.1 and above, follow the correct algebraic sign (positive and negative depending on respective proposed hypotheses in this research) and have a significant level of at least 0.05.

## **6.9 CHAPTER SUMMARY**

This chapter described in detail the data collection and data analysis methods used to examine the research model in phase two of this research. Online survey was the data collection method. The process of developing the survey instrument was described and data analysis methods were presented. Two statistical analysis approaches, CB-SEM and PLS-SEM, were discussed in order to provide methodological foundations for this research to choose the suitable statistical analysis method. Following the rules of thumb compiled from Hair, Ringle and Sarstedt (2011), Hair *et al.* (2017) and Henseler, Ringle and Sinkovics (2009), PLS-SEM was selected to fit the exploratory nature of the research and the complex modelling with ten constructs. Hence, phase two of this research employed PLS-SEM to analyse collected data through two steps of model assessment, namely, measurement model assessment and structural model assessment prior to testing research hypotheses. Four statistical criteria set up for the measurement model assessment were internal consistency, indicator reliability, convergent validity, and discriminant validity. Two criteria, coefficient of determination ( $R^2$ ) and path coefficient, were used to assess the structural model. The next chapter (Chapter 7) presents the PLS-SEM data analysis, including the measurement model assessment, the structural model assessment and hypothesis testing.

## **CHAPTER 7 – PHASE TWO: DATA ANALYSIS AND RESULTS**

### **7.1 INTRODUCTION**

This chapter details the data analysis process in phase two of this research. Discussions are provided on the results of the measurement model assessment and the structural model assessment, including hypothesis testing. First, Section 7.2 presents the survey response rate. Section 7.3 describes the data preparation process. Section 7.4 supplies a description of survey participants' demographic profiles. Section 7.5 gives an overview of the research model assessment. Section 7.6 reports the results from the measurement model assessment, including the tests of convergent and discriminant validities. Section 7.7 presents the structural model assessment, including structural path analysis, path coefficients, significance testing and hypothesis testing. Finally, Section 7.8 summarises the chapter.

### **7.2 SURVEY RESPONSE RATE**

The survey targeted consumers across major urban areas of Vietnam who were active consumers of packaged instant noodles (i.e., those who bought and consumed packaged instant noodles within the latest month) via the consumer online panel of Cimigo, a UK-based market research company operating in Vietnam. Emails with the information about the research and the link to the online survey were sent to members of Cimigo's online panel in Vietnam. The survey was launched on RMIT Qualtrics system. Data on refusals regarding survey responses were not collected because only those who agreed to participate in the online survey followed the link to complete the questionnaire. To comply with ethical standards of the market research company, research participants moved through filter questions which identified them as someone who was not working for a manufacturer, an advertiser, or a seller of packaged instant noodles at the time of survey in order to start completing the full questionnaire. Therefore, more people activated the survey link than those who passed through the filter to actually start answering the questionnaire. As a result, the number of recorded responses was lower than the number of people accepting the survey invitation and activating the survey link. The number of participants recorded as starting the survey questionnaire was 585 out of 1,086 people who activated the survey link. Out of 585 recorded responses in total, 192 cases were reported on Qualtrics system as unfinished. The reason is that participants could drop out of the survey without completion by just turning off the survey link and/or closing the window browser (see Section 6.5). The information about participants' right to withdraw from research was provided in Participant Information Sheet sent together with the survey

invitation and included in the preamble to the online survey (see Appendix 3, 4, 5). The unfinished responses were removed, leaving 393 fully completed responses, with the rate of 67.17 per cent (see Table 7-1).

**Table 7-1: Survey response rate**

| <b>Surveys</b>                   | <b>Frequency</b> | <b>Per cent</b> |
|----------------------------------|------------------|-----------------|
| <b>Total recorded responses</b>  | 585              | 100             |
| <b>Fully completed responses</b> | 393              | 67.17           |

### **7.3 DATA PREPARATION**

There were four steps of data preparation prior to statistical analysis. First, the collected data from online surveys was exported into a standardised format to use in SPSS (Section 7.3.1). Second, item outliers were checked (Section 7.3.2), followed by normality testing for multivariate analysis (Section 7.3.3). Then, a test of common method bias was undertaken to make sure that the data was free from bias before any statistical analysis could be done (Section 7.3.4).

#### **7.3.1 Data Export**

As this was a self-administered online survey, all recorded responses were automatically entered into RMIT Qualtrics system. There were 393 fully completed responses, of which 85 responses were found invalid. There were considerations in terms of:

- Cases with the same scored responses for all questions (for example, participants answered 5 across the questions of the survey);
- Participants completed the survey within 3 minutes, indicating that they were not giving sufficient attention required when answering the questionnaire. Eliminating responses with unreasonably fast response time helps remove the data that could distort the results of the research (Lowry *et al.*, 2016; Mason and Suri, 2012) (see Section 6.6).

After the preliminary scrutiny, the remaining set was 308 usable responses, accounting for 78.37 per cent of the fully completed response sets (308 out of 393 fully completed responses). The final dataset was exported into SPSS 20 format for the tests of outliers, normalities and common method biasness prior to further statistical analysis (see Section 7.3.2, 7.3.3 and 7.3.4).

### **7.3.2 Test of Outliers**

Testing for outliers was undertaken before normality testing for multivariate analysis. The first step for investigating outliers for the survey items was at univariate levels. Using SPSS 20, an outlier histogram was produced for each item of all constructs in the research model. In this test, item EnSI2 of environmental self-identity was identified with five outliers at univariate levels (see Appendix 6). The second step was to check if the five detected univariate outlier cases were also at multivariate levels. This test found no multivariate outliers at the  $M2/df$  threshold of 4 recommended by Kline (2005). Hence, no further review would be needed for the five univariate outlier cases and the dataset of 308 responses was used for further testing.

### **7.3.3 Test of Normality**

Preceding the modelling in this research, data was assessed for compliance with normality assumptions, using SPSS statistical methods. In the test of normality, skewness and kurtosis index were checked. This research used the criteria of normality compiled from Hair *et al.* (2009) and Kline (2005). Hair *et al.* (2009) stated that absolute values of skewness and kurtosis exceeding 2.0 and 7.0 respectively are indicative of moderately non-normal distributions. Kline (2005) recommended that absolute kurtosis values greater than 10.0 are indicative of problematic non-normality, and values greater than 20.0 are indicative of serious deviations from multivariate normality. The results of the normality test in Appendix 7 showed that all skewness and kurtosis values were below 2.0. Thus, the data collected for this research stayed within acceptable normality levels.

### **7.3.4 Test of Common Method Bias**

The final step in data preparation was the test of common method bias. To do this test, Podsakoff *et al.* (2003) suggested using the Harman's single factor test to detect significant bias (if any) in the final dataset owing to the data measurement method. Depending on different research areas and topics, the proportion of variance accounted for common method biasness may vary (Podsakoff *et al.*, 2003). In any case, the variance accounted for a single factor cannot be greater than 40.7 per cent in behavioural research (Podsakoff *et al.*, 2003). In this research, the Harman's single factor test showed that one general factor accounted for 25.1 per cent of the total variance (see Appendix 8). This result indicated that common method bias was not an issue with the dataset. Therefore, the collected data was used for further descriptive and statistical analysis.

## 7.4 FINAL SAMPLE'S DEMOGRAPHIC AND BEHAVIOURAL PROFILES

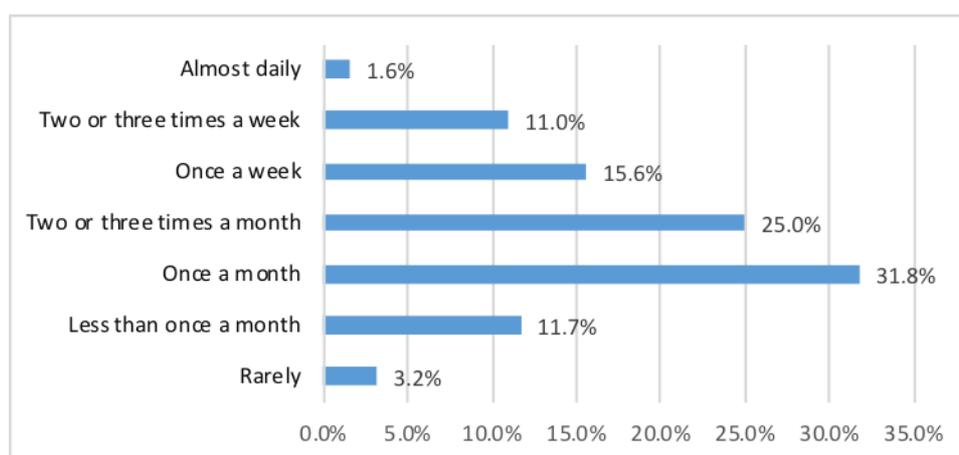
This section presents a descriptive analysis of the final sample, including survey participants' demographic and behavioural profiles. There were 308 participants in the final dataset, comprising 149 men (48.4 per cent) and 159 women (51.6 per cent). The female and male composition of the sample reflects the sex breakdown in the total population (males 49 per cent, females 51 per cent) (Central Intelligence Agency US, 2017a). In terms of age composition of the sample, the largest age groups were 20 to 35 years old (51.3 per cent combined), representing the young population of Vietnam with the medium age of 30.1 (Central Intelligence Agency US, 2017a). Regarding education levels, a majority of the participants had college and higher degrees - bachelor degree (53.6 per cent) and postgraduate degree (7.5 per cent); 8.4 per cent had a vocational certificate, and 20.1 per cent completed senior high school. Demographic data reflect relatively high educational backgrounds of the survey participants with more than half the sample having completed a bachelor degree. This may imply that a majority of people who have internet access in Vietnam are highly educated. Hence, in terms of educational background, the sample may not appropriately represent the Vietnamese population, which is considered as a limitation of the research sample (see Chapter 9). The sample included participants mainly from three cities in three main areas of Vietnam – Hanoi in the North, Danang in the Centre and Ho Chi Minh City in the South – and, as expected, the sample represented consumers from the biggest consumer markets of Vietnam. Table 7-2 shows descriptive statistics for age, sex, education and location of participants.

**Table 7-2 Descriptive statistics for age, sex, education and location of survey participants**

| <b>Characteristic</b>  | <b>Categories</b>        | <b>Frequency</b> | <b>Per cent</b> |
|------------------------|--------------------------|------------------|-----------------|
| Sex                    | Male                     | 149              | 48.4            |
|                        | Female                   | 159              | 51.6            |
| Age                    | 20-25 years              | 78               | 25.3            |
|                        | 26-30 years              | 58               | 18.8            |
|                        | 31-35 years              | 53               | 17.2            |
|                        | 36-40 years              | 41               | 13.3            |
|                        | 41-45 years              | 47               | 15.3            |
|                        | 46-50 years              | 31               | 10.1            |
| Educational background | No schooling             | 0                | 0               |
|                        | Completed primary school | 5                | 1.6             |

| Characteristic      | Categories                   | Frequency | Per cent |
|---------------------|------------------------------|-----------|----------|
|                     | Completed junior high school | 27        | 8.8      |
|                     | Completed senior high school | 62        | 20.1     |
|                     | Vocational training          | 26        | 8.4      |
|                     | Bachelor degree              | 165       | 53.6     |
|                     | Post-graduate degree         | 23        | 7.5      |
| Geographic location | Ho Chi Minh city             | 108       | 35.1     |
|                     | Hanoi                        | 96        | 31.2     |
|                     | Danang                       | 93        | 30.1     |
|                     | Other locations              | 11        | 3.6      |
| Sample size (n)     |                              | 308       | 100      |

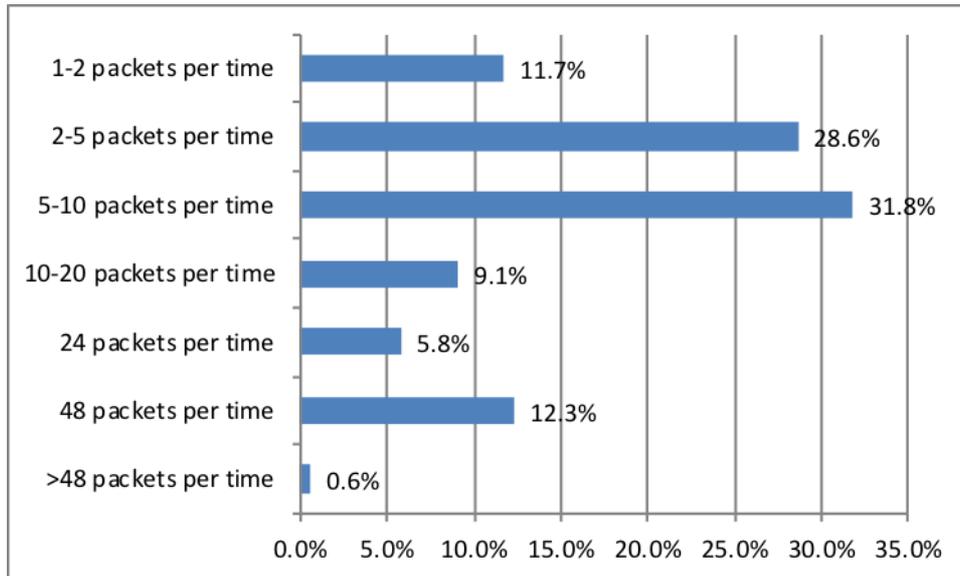
In terms of descriptive statistics for purchase frequency of packaged instant noodles, Figure 7-1 shows that the largest combined groups make from one to three shopping trips a month (56.8 per cent combined), followed by the two groups making from one to three shopping trips a week (26.6 per cent combined) and 5 per cent of participants making daily purchases. The data indicate that many consumers in Vietnam make frequent purchases in the packaged instant noodle category, from one to three times a month. This well reflects the results of a survey conducted by Katar Worldpanel (2017) that Vietnamese consumers buy packaged instant noodles more than once a month, on average 18 times a year.



**Figure 7-1: Frequency of purchase**

Referring to the volume of purchase, Figure 7-2 indicates that the largest group of consumers (31.8 per cent) buys 5 to 10 packets per time, followed by the group buying 2 to 5 packets (28.6 per cent) and the group buying 48 packets each time (12.3 per cent). The figures show that consumers make

medium to high purchase volumes for packaged instant noodles, which reflect high levels of consumption and disposal of packaging into the environment.



**Figure 7-2: Volume of purchase per time**

## **7.5 ASSESSMENT OF THE RESEARCH MODEL – AN OVERVIEW**

The previous sections reported the data preparation process, including data export, tests of outliers, normality and common method bias (Section 7.3). Also, survey participants' demographic and behavioural descriptions were supplied in Section 7.4. In this section, an overview of the research model assessment is given.

In phase two of this research, PLS-SEM was conducted with the software SmartPLS 3.0 to assess the research model. Two steps were undertaken for the measurement model assessment and the structural model assessment. All measures in this research were treated as reflective, following their original developed conceptualisation (see Chapter 3). When looking at the individual items representing each construct, they are interchangeable, share a common theme, are manifestations of the same construct, and are expected to positively co-vary as well as share common antecedents and consequences (Jarvis, MacKenzie and Podsakoff, 2003). The following sections present the research model assessment using PLS-SEM (Section 7.6 Measurement model assessment, Section 7.7 Structural model assessment).

## **7.6 ASSESSMENT OF THE MEASUREMENT MODEL**

This section presents the measurement model assessment. In this research, the assessment of the measurement model was undertaken through the tests for convergent validity and discriminant validity. All ten studied constructs in the model were reflective constructs which had “a set of indicators/items sharing a common theme, and expected to move together empirically” (Petter *et al.*, 2007, p.635). Therefore, the measurement model of this research was hypothesised as a reflective model. The subsequent sections present the tests for convergent validity (Section 7.6.1) and discriminant validity (Section 7.6.2), and conclude by presenting a table of factor-item results, before conducting the structural model assessment (Section 7.7).

### **7.6.1 TEST OF CONVERGENT VALIDITY**

Convergent validity was established first in data analysis of this research. Convergent validity refers to the relationship between measures/indicators/items (Carlson and Herdman, 2012). If these measures/indicators/items are hypothesised to represent the same construct, a strong correlation between them reflects that they capture their respective construct (Carlson and Herdman, 2012). Convergent validity is satisfactory when all the measures/indicators/items of a certain construct correlate and support each other in terms of the concept they reflect. Upon establishing convergent validity, the researcher can ensure that all the measures of the construct are actually measuring the same construct or concept and move in the same conceptual direction (Carlson and Herdman, 2012). In this research, convergent validity was thoroughly examined through:

- The reliabilities of items in each scale
- The value of composite reliability (CR) of each construct
- The values of average variance extracted (AVE).

Each of these analyses is presented in the sections from 7.6.1.1 to 7.6.1.3.

#### **7.6.1.1 Reliabilities of Items in each Scale**

Reliabilities of items in each scale were examined as the first step in ensuring convergent validity of the measurement model. Evaluating the reliability of each measurement item in the scale that is used to measure the construct is one method to demonstrate convergent validity (Carlson and Herdman, 2012). In this method, convergent validity is satisfactory if all the indicators/items of a scale highly and significantly load on their respective construct. Table 7-3 shows the outer loadings of each measurement item on its respective construct, produced by SmartPLS 3.0. As shown,

almost all items used in this research significantly loaded on their corresponding constructs. The loadings were greater than the 0.60 recommended thresholds for exploratory research (Nunnally, Bernstein and Berge, 1967; Nunnally, Bernstein, 1994), except for four items EnI4 (0.557), EnK4 (0.368), PerDN2 (0.576) and PerDN3 (0.516).

**Table 7-3: Outer Loadings**

| Construct                              | Item   | BI    | EnI   | EnK   | EnSI  | PI    | PerA  | PerDN | PerTP | SE    | WTP   |
|--|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Behavioural purchase intention         | BI1    | 0.924 |       |       |       |       |       |       |       |       |       |
|  | BI2    | 0.954 |       |       |       |       |       |       |       |       |       |
|  | BI3    | 0.927 |       |       |       |       |       |       |       |       |       |
| Environmental involvement              | EnI1   |       | 0.851 |       |       |       |       |       |       |       |       |
|  | EnI2   |       | 0.877 |       |       |       |       |       |       |       |       |
|  | EnI3   |       | 0.871 |       |       |       |       |       |       |       |       |
|  | EnI4   |       | 0.557 |       |       |       |       |       |       |       |       |
| Subjective environmental knowledge     | EnK1   |       |       | 0.929 |       |       |       |       |       |       |       |
|  | EnK2   |       |       | 0.649 |       |       |       |       |       |       |       |
|  | EnK3   |       |       | 0.645 |       |       |       |       |       |       |       |
|  | EnK4   |       |       | 0.368 |       |       |       |       |       |       |       |
| Environmental self-identity            | EnSI1  |       |       |       | 0.877 |       |       |       |       |       |       |
|  | EnSI2  |       |       |       | 0.949 |       |       |       |       |       |       |
|  | EnSI3  |       |       |       | 0.938 |       |       |       |       |       |       |
| Product involvement                    | PI1    |       |       |       |       | 0.743 |       |       |       |       |       |
|  | PI2    |       |       |       |       | 0.958 |       |       |       |       |       |
|  | PI3    |       |       |       |       | 0.723 |       |       |       |       |       |
| Perceived availability of alternatives | PerA1  |       |       |       |       |       | 0.912 |       |       |       |       |
|  | PerA2  |       |       |       |       |       | 0.946 |       |       |       |       |
|  | PerA3  |       |       |       |       |       | 0.931 |       |       |       |       |
| Perceived descriptive norms            | PerDN1 |       |       |       |       |       |       | 0.996 |       |       |       |
|  | PerDN2 |       |       |       |       |       |       | 0.576 |       |       |       |
|  | PerDN3 |       |       |       |       |       |       | 0.516 |       |       |       |
| Perceived time pressure                | PerTP1 |       |       |       |       |       |       |       | 0.824 |       |       |
|  | PerTP2 |       |       |       |       |       |       |       | 0.887 |       |       |
|  | PerTP3 |       |       |       |       |       |       |       | 0.876 |       |       |
|  | PerTP4 |       |       |       |       |       |       |       | 0.712 |       |       |
| Shopping effort                        | SE1    |       |       |       |       |       |       |       |       | 0.941 |       |
|  | SE2    |       |       |       |       |       |       |       |       | 0.934 |       |
|  | SE3    |       |       |       |       |       |       |       |       | 0.873 |       |
| Willingness to pay                     | WTP1   |       |       |       |       |       |       |       |       |       | 0.907 |
|  | WTP2   |       |       |       |       |       |       |       |       |       | 0.843 |
|  | WTP3   |       |       |       |       |       |       |       |       |       | 0.904 |

As can be seen in Table 7-3, EnK4 had the lowest loading of 0.368. Hulland (1999) pointed out that if all measures are reflective, then it is possible to examine the individual loadings for each block

for indicator reliability values. Loading of 0.70 or above is considered ideal, but in an exploratory research, loading from 0.4 is still acceptable (Hulland, 1999). Items with loadings of lower than 0.4, which is a threshold commonly used for factor analysis results, should be removed (Hulland, 1999). Even items with loadings lower than 0.5 could also be considered to be removed (Hulland, 1999). Since this research was of exploratory nature with the aim to predict purchase intention relating to eco-friendly packaging, the items with loadings lower than 0.7 but higher than 0.5 were retained. As a consequence, EnK4 with its loading less than 0.4 was removed whereas three items (EnI4, PerDN2 and PerDN3) having loadings higher than 0.5 were retained for further assessment. As advised by Hulland (1999) and Wong (2013), keeping a low-loading item (which needs to be higher than the threshold 0.4) will likely increase predictive power, since the PLS algorithm still weighs it to the extent it helps minimise residual variance, as long as other more reliable indicators exist (such as CR and AVE). Table 7-4 shows that the outer loadings of the measurement model was satisfactory with EnI4 having a higher loading after removing the low-loading item EnK4.

**Table 7-4: Outer Loadings (after removing EnK4)**

| Construct                              | Item   | BI    | EnI   | EnK     | EnSI  | PI    | PerA  | PerDN | PerTP | SE | WTP |
|--|--------|-------|-------|---------|-------|-------|-------|-------|-------|----|-----|
| Behavioural purchase intention         | BI1    | 0.924 |       |         |       |       |       |       |       |    |     |
|  | BI2    | 0.954 |       |         |       |       |       |       |       |    |     |
|  | BI3    | 0.927 |       |         |       |       |       |       |       |    |     |
| Environmental involvement              | EnI1   |       | 0.849 |         |       |       |       |       |       |    |     |
|  | EnI2   |       | 0.876 |         |       |       |       |       |       |    |     |
|  | EnI3   |       | 0.870 |         |       |       |       |       |       |    |     |
|  | EnI4   |       | 0.561 |         |       |       |       |       |       |    |     |
| Subjective environmental knowledge     | EnK1   |       |       | 0.953   |       |       |       |       |       |    |     |
|  | EnK2   |       |       | 0.603   |       |       |       |       |       |    |     |
|  | EnK3   |       |       | 0.681   |       |       |       |       |       |    |     |
|  | EnK4   |       |       | removed |       |       |       |       |       |    |     |
| Environmental self-identity            | EnSI1  |       |       |         | 0.877 |       |       |       |       |    |     |
|  | EnSI2  |       |       |         | 0.949 |       |       |       |       |    |     |
|  | EnSI3  |       |       |         | 0.938 |       |       |       |       |    |     |
| Product involvement                    | PI1    |       |       |         |       | 0.743 |       |       |       |    |     |
|  | PI2    |       |       |         |       | 0.958 |       |       |       |    |     |
|  | PI3    |       |       |         |       | 0.723 |       |       |       |    |     |
| Perceived availability of alternatives | PerA1  |       |       |         |       |       | 0.912 |       |       |    |     |
|  | PerA2  |       |       |         |       |       | 0.946 |       |       |    |     |
|  | PerA3  |       |       |         |       |       | 0.931 |       |       |    |     |
| Perceived descriptive norms            | PerDN1 |       |       |         |       |       |       | 0.996 |       |    |     |
|  | PerDN2 |       |       |         |       |       |       | 0.576 |       |    |     |
|  | PerDN3 |       |       |         |       |       |       | 0.516 |       |    |     |
| Perceived time                         | PerTP1 |       |       |         |       |       |       | 0.824 |       |    |     |

| Construct          | Item   | BI | EnI | EnK | EnSI | PI | PerA | PerDN | PerTP | SE    | WTP   |
|--------------------|--------|----|-----|-----|------|----|------|-------|-------|-------|-------|
| pressure           | PerTP2 |    |     |     |      |    |      |       | 0.887 |       |       |
|                    | PerTP3 |    |     |     |      |    |      |       | 0.876 |       |       |
|                    | PerTP4 |    |     |     |      |    |      |       | 0.712 |       |       |
| Shopping effort    | SE1    |    |     |     |      |    |      |       |       | 0.941 |       |
|                    | SE2    |    |     |     |      |    |      |       |       | 0.934 |       |
|                    | SE3    |    |     |     |      |    |      |       |       | 0.873 |       |
| Willingness to pay | WTP1   |    |     |     |      |    |      |       |       |       | 0.907 |
|                    | WTP2   |    |     |     |      |    |      |       |       |       | 0.843 |
|                    | WTP3   |    |     |     |      |    |      |       |       |       | 0.904 |

### 7.6.1.2 Test of Composite Reliability of Constructs

The next step of analysis was to look at composite reliability (CR) of the studied constructs. Wong (2013) stated that another measure used to support the existence of convergent validity is the CR of each construct in the research model. The composite reliability of each construct assesses its internal consistency (Wong, 2013). This makes certain that the construct is internally consistent due to the consistency among the construct measures. Hence, compared to the individual item reliability, CR measures the overall reliability of a full set of all measures assigned to a certain construct. As a guideline, 0.70 is a minimum benchmark for acceptable construct reliability (Hair *et al.*, 2009). As shown in Table 7-5, the CR of all constructs is above 0.70, thus satisfying the second requirement for convergent validity.

**Table 7-5: Composite reliability (CR)**

|              | Composite Reliability (CR) |
|--------------|----------------------------|
| <b>BI</b>    | <b>0.954</b>               |
| <b>EnI</b>   | <b>0.874</b>               |
| <b>EnK</b>   | <b>0.798</b>               |
| <b>EnSI</b>  | <b>0.944</b>               |
| <b>PI</b>    | <b>0.854</b>               |
| <b>PerA</b>  | <b>0.950</b>               |
| <b>PerDN</b> | <b>0.755</b>               |
| <b>PerTP</b> | <b>0.896</b>               |
| <b>SE</b>    | <b>0.940</b>               |
| <b>WTP</b>   | <b>0.916</b>               |

### 7.6.1.3 Test of Average Variance Extracted (AVE)

The values of average variance extracted (AVE) were checked to complete the convergent validity assessment of the measurement model. AVE assesses the magnitude of variance that a factor or variable captures from its corresponding indicators or items compared to the amount resulting from measurement errors (Chin, 1998). A high AVE construct ensures that the indicators (or measures) under it are capturing the same underlying construct (Chin, 1998). In order to support a satisfactory convergent validity, the AVE of each construct in the model should exceed 0.50 (Fornell and Bookstein, 1982). As indicated in Table 7-6, all studied constructs have AVE greater than the 0.50 threshold. Therefore, the measurement model of this research satisfied the third requirement of convergent validity.

**Table 7-6: Constructs' Average Variance Extracted**

|              | <b>Average Variance Extracted (AVE)</b> |
|--------------|---|
| <b>BI</b>    | 0.874                                   |
| <b>EnI</b>   | 0.640                                   |
| <b>EnK</b>   | 0.579                                   |
| <b>EnSI</b>  | 0.849                                   |
| <b>PI</b>    | 0.664                                   |
| <b>PerA</b>  | 0.864                                   |
| <b>PerDN</b> | 0.530                                   |
| <b>PerTP</b> | 0.685                                   |
| <b>SE</b>    | 0.840                                   |
| <b>WTP</b>   | 0.784                                   |

### 7.6.2 TEST OF DISCRIMINANT VALIDITY

This section discusses the assessment of discriminant validity, which is the second criterion for establishing the adequacy of the measurement model in this research. Discriminant validity concerns the discrimination or differentiation among measures of different constructs (Garson, 2016). Discriminant validity is therefore exhibited if the measures of each construct have low correlation with each other (Garson, 2016; Wong, 2013). The measures of each construct are supposed to measure a different concept. In this research, discriminant validity was assessed according to the rule of thumb for model evaluation suggested by Hair, Ringle and Sarstedt (2011) by examining:

- Item Cross-loadings on various constructs
- Relationship between correlations among constructs and the square root of AVE.

Each of these analyses is described in the sections 7.6.2.1 and 7.6.2.2.

### 7.6.2.1 Cross-loadings

Item cross-loadings were checked as part of the test for discriminant validity of the measurement model in this research. To meet the first requirement, the loading of each measurement item on its corresponding construct should be the highest, compared to its loading on other constructs in the same model (Straub, Boudreau and Gefen, 2004). This illustrates that the measurement items of a construct are measuring only that particular construct. Table 7-7 shows that all measurement items load the highest on their designated constructs when compared to other constructs. Therefore, the first test of discriminant validity was satisfied.

**Table 7-7: Loadings and cross-loadings of items on various constructs**

|       | BI           | EnI          | EnK          | EnSI         | PI           | PerA   | PerDN | PerTP  | SE    | WTP    |
|-------|--------------|--------------|--------------|--------------|--------------|--------|-------|--------|-------|--------|
| BI1   | <b>0.924</b> | 0.416        | 0.215        | 0.451        | 0.154        | 0.107  | 0.195 | 0.000  | 0.630 | 0.625  |
| BI2   | <b>0.954</b> | 0.448        | 0.218        | 0.451        | 0.105        | 0.068  | 0.180 | 0.050  | 0.604 | 0.650  |
| BI3   | <b>0.927</b> | 0.436        | 0.228        | 0.446        | 0.110        | 0.039  | 0.172 | 0.024  | 0.568 | 0.625  |
| EnI1  | 0.316        | <b>0.849</b> | 0.321        | 0.567        | -0.002       | -0.119 | 0.183 | -0.034 | 0.313 | 0.342  |
| EnI2  | 0.402        | <b>0.876</b> | 0.248        | 0.571        | 0.007        | -0.142 | 0.146 | -0.004 | 0.306 | 0.356  |
| EnI3  | 0.472        | <b>0.870</b> | 0.295        | 0.609        | -0.023       | -0.088 | 0.225 | 0.047  | 0.396 | 0.408  |
| EnI4  | 0.254        | <b>0.561</b> | 0.275        | 0.249        | 0.070        | -0.076 | 0.165 | 0.123  | 0.176 | 0.167  |
| EnK1  | 0.241        | 0.414        | <b>0.953</b> | 0.444        | -0.026       | 0.154  | 0.356 | 0.096  | 0.338 | 0.176  |
| EnK2  | 0.133        | 0.113        | <b>0.603</b> | 0.207        | -0.036       | -0.069 | 0.077 | -0.049 | 0.137 | 0.148  |
| EnK3  | 0.125        | 0.135        | <b>0.681</b> | 0.209        | 0.055        | 0.257  | 0.209 | 0.175  | 0.221 | 0.069  |
| EnSI1 | 0.362        | 0.568        | 0.412        | <b>0.877</b> | 0.099        | 0.024  | 0.127 | 0.054  | 0.386 | 0.310  |
| EnSI2 | 0.485        | 0.622        | 0.385        | <b>0.949</b> | 0.046        | 0.039  | 0.208 | 0.029  | 0.458 | 0.413  |
| EnSI3 | 0.468        | 0.586        | 0.370        | <b>0.938</b> | 0.087        | 0.025  | 0.194 | -0.005 | 0.408 | 0.368  |
| PI1   | 0.038        | -0.137       | 0.062        | -0.009       | <b>0.743</b> | 0.235  | 0.052 | 0.120  | 0.116 | -0.002 |

|        | BI     | EnI    | EnK    | EnSI   | PI           | PerA         | PerDN        | PerTP        | SE           | WTP          |
|--------|--------|--------|--------|--------|--------------|--------------|--------------|--------------|--------------|--------------|
| PI2    | 0.155  | 0.042  | -0.011 | 0.098  | <b>0.958</b> | 0.171        | -0.019       | 0.107        | 0.151        | 0.062        |
| PI3    | 0.057  | 0.017  | -0.058 | 0.051  | <b>0.723</b> | 0.118        | 0.080        | 0.112        | 0.067        | 0.074        |
| PerA1  | 0.054  | -0.172 | 0.123  | 0.013  | 0.203        | <b>0.912</b> | 0.221        | 0.214        | 0.168        | -0.035       |
| PerA2  | 0.074  | -0.105 | 0.180  | 0.039  | 0.198        | <b>0.946</b> | 0.234        | 0.220        | 0.162        | 0.032        |
| PerA3  | 0.080  | -0.108 | 0.137  | 0.034  | 0.148        | <b>0.931</b> | 0.218        | 0.149        | 0.177        | -0.006       |
| PerDN1 | 0.181  | 0.204  | 0.323  | 0.181  | 0.025        | 0.277        | <b>0.996</b> | 0.182        | 0.292        | 0.209        |
| PerDN2 | -0.014 | -0.072 | 0.177  | -0.024 | 0.078        | 0.461        | <b>0.575</b> | 0.190        | 0.129        | 0.031        |
| PerDN3 | -0.007 | -0.063 | 0.167  | 0.030  | 0.112        | 0.451        | <b>0.515</b> | 0.178        | 0.113        | 0.029        |
| PerTP1 | -0.013 | 0.018  | 0.156  | 0.045  | 0.163        | 0.215        | 0.153        | <b>0.829</b> | 0.139        | 0.002        |
| PerTP2 | 0.025  | 0.018  | 0.025  | -0.019 | 0.091        | 0.159        | 0.077        | <b>0.887</b> | 0.159        | 0.044        |
| PerTP3 | 0.069  | 0.067  | 0.115  | 0.039  | 0.086        | 0.190        | 0.233        | <b>0.869</b> | 0.165        | 0.085        |
| PerTP4 | -0.051 | -0.016 | -0.014 | 0.034  | 0.065        | 0.041        | 0.049        | <b>0.723</b> | 0.042        | 0.024        |
| SE1    | 0.574  | 0.272  | 0.285  | 0.378  | 0.194        | 0.225        | 0.280        | 0.160        | <b>0.941</b> | 0.568        |
| SE2    | 0.552  | 0.315  | 0.340  | 0.411  | 0.157        | 0.256        | 0.258        | 0.204        | <b>0.934</b> | 0.547        |
| SE3    | 0.635  | 0.457  | 0.283  | 0.454  | 0.054        | 0.031        | 0.280        | 0.111        | <b>0.873</b> | 0.660        |
| WTP1   | 0.626  | 0.420  | 0.164  | 0.389  | 0.049        | 0.012        | 0.201        | 0.067        | 0.599        | <b>0.907</b> |
| WTP2   | 0.545  | 0.272  | 0.093  | 0.267  | 0.083        | 0.058        | 0.189        | 0.067        | 0.560        | <b>0.843</b> |
| WTP3   | 0.624  | 0.389  | 0.210  | 0.393  | 0.039        | -0.063       | 0.197        | 0.006        | 0.566        | <b>0.904</b> |

### 7.6.2.2 Relationships between Correlations among Constructs and the Square Root of AVEs

The second test of discriminant validity was to examine relationships between correlations among constructs and the square roots of AVEs. As indicated by Fornell and Larcker (1981), one criterion for satisfactory discriminant validity is that the square root of AVE of any studied construct within the research model should be greater than its correlation scores with all other constructs. This comparison shows that more variance is shared between respective measures or items with their designated construct than with other constructs. To do this comparison, SmartPLS 3.0 was used to create Table 7-8 which shows the square root of AVE (highlighted in bold) and the correlations between the latent variables. It explains that the square root of AVE of each construct (shown

diagonally) is greater than its correlations with other constructs (the off-diagonal numbers), thereby satisfying this test of discriminant validity.

**Table 7-8: Squared Root of AVE & Correlation between Constructs of Measurement Model**

|       | BI           | EnI          | EnK          | EnSI         | PI           | PerA         | PerDN        | PerTP        | SE           | WTP          |
|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| BI    | <b>0.935</b> |              |              |              |              |              |              |              |              |              |
| EnI   | 0.463        | <b>0.800</b> |              |              |              |              |              |              |              |              |
| EnK   | 0.235        | 0.355        | <b>0.761</b> |              |              |              |              |              |              |              |
| EnSI  | 0.481        | 0.643        | 0.418        | <b>0.922</b> |              |              |              |              |              |              |
| PI    | 0.132        | 0.011        | -0.012       | 0.081        | <b>0.815</b> |              |              |              |              |              |
| PerA  | 0.077        | -0.133       | 0.160        | 0.033        | 0.193        | <b>0.930</b> |              |              |              |              |
| PerDN | 0.195        | 0.227        | 0.325        | 0.195        | 0.016        | 0.241        | <b>0.728</b> |              |              |              |
| PerTP | 0.027        | 0.037        | 0.102        | 0.026        | 0.126        | 0.205        | 0.172        | <b>0.829</b> |              |              |
| SE    | 0.643        | 0.384        | 0.330        | 0.454        | 0.145        | 0.182        | 0.298        | 0.171        | <b>0.916</b> |              |
| WTP   | 0.677        | 0.411        | 0.179        | 0.398        | 0.063        | 0.000        | 0.221        | 0.052        | 0.649        | <b>0.885</b> |

*\*The bolded diagonal elements are the squared root of the AVE scores*

### 7.6.2.3 Summary of Discriminant Validity Testing of the Measurement Model

The analyses presented in Section 7.6.1 and Section 7.6.2 demonstrate that the measurement model used in this research satisfactorily met the requirements for establishing convergent and discriminant validities. Table 7-9 presents all the constructs or factors together with their respective measurement items after the measurement model assessment in the first stage of quantitative analysis. At this stage, there were 32 items representing ten constructs or factors in the final pool of measures (see Table 7-9).

**Table 7-9: Summary of Construct/factor-item Results**

| Constructs/Factors                        | Measurement Items      | Number of items | Cronbach's alpha | Composite reliability |
|---|------------------------|-----------------|------------------|-----------------------|
| Behavioural green purchase intention (BI) | BI1, BI2, BI3          | 3               | 0.928            | 0.954                 |
| Environmental involvement (EnI)           | EnI1, EnI2, EnI3, EnI4 | 4               | 0.800            | 0.874                 |
| Subjective Environmental knowledge (EnK)  | EnK1, EnK2, EnK3       | 3               | 0.648            | 0.797                 |
| Environmental self-identity (EnSI)        | EnSI1, EnSI2, EnSI3    | 3               | 0.912            | 0.944                 |
| Product involvement (PI)                  | PI1, PI2, PI3          | 3               | 0.784            | 0.854                 |

| Constructs/Factors                            | Measurement Items              | Number of items | Cronbach's alpha | Composite reliability |
|---|--------------------------------|-----------------|------------------|-----------------------|
| Perceived availability of alternatives (PerA) | PerA1, PerA2, PerA3            | 3               | 0.923            | 0.950                 |
| Perceived descriptive norms (PerDN)           | PerDN1, PerDN2, PerDN3         | 3               | 0.858            | 0.755                 |
| Perceived time pressure (PerTP)               | PerTP1, PerTP2, PerTP3, PerTP4 | 4               | 0.857            | 0.898                 |
| Shopping effort (SE)                          | SE1, SE2, SE3                  | 3               | 0.904            | 0.940                 |
| Willingness to pay (WTP)                      | WTP1, WTP2, WTP3               | 3               | 0.862            | 0.912                 |
| Total number of items                         |                                | 32              |                  |                       |

Hair, Ringle and Sarstedt (2011, p. 140) stated that “because the construct’s measurement properties are less restrictive with PLS-SEM, constructs with fewer items (e.g., one or two) can be used”. In this research, all latent variables in the research model had three items or more (see Table 7-9). Therefore, the structural model was adequate to proceed with further analysis in PLS-SEM.

## 7.7 ASSESSMENT OF THE STRUCTURAL MODEL

The structural model assessment was undertaken as the second step of model assessment in this research. This assessment was conducted in two stages:

- assessing validity of the structural model via checking for convergence (Section 7.7.1), checking for multicollinearity (Section 7.7.2) and coefficient of determination (Section 7.7.3); and
- assessing structural path analysis (Section 7.7.4) with path coefficients and significance testing as the basis for hypothesis testing (Section 7.7.5).

### 7.7.1 Checking for Convergence

The first step of the structural model assessment was to check for convergence when the PLS algorithm had been run and completed. According to Garson (2016), although convergence is often not an issue of PLS-SEM, coefficients in the output could be unreliable if the solution fails to converge. The matrix output for “Stop Criterion Changes” in Appendix 9 shows that convergence was reached only after six iterations. Hence, the model estimation was good. Therefore, it was

concluded that there was no violence of convergence, and coefficients in output were reliable for this research.

### 7.7.2 Checking for Multicollinearity

The next step of analysis was to check for multicollinearity. As recommended by Wong (2013), a detailed PLS-SEM analysis often includes a multicollinearity assessment. To detect collinearity issues of the structural model, the Variance Inflation Factors (VIF) values were used. As a principle, VIF of 5 or lower is needed to make sure the collinearity problem does not exist (Hair *et al.*, 2011). In this research, VIFs of all latent variables in the structural model were calculated, using SmartPLS 3.0. Table 7-10 indicates that VIFs of all latent variables were lower than 5, which shows no potential collinearity problems with the structural model.

**Table 7-10: Collinearity Statistics (Inner VIF values)**

|       | BI    | EnI | EnK   | EnSI | PI | PerA | PerDN | PerTP | SE    | WTP   |
|-------|-------|-----|-------|------|----|------|-------|-------|-------|-------|
| BI    |       |     |       |      |    |      |       |       | 1.001 | 1.000 |
| EnI   | 1.874 |     | 1.000 |      |    |      |       |       |       |       |
| EnK   | 1.353 |     |       |      |    |      |       |       |       |       |
| EnSI  | 1.873 |     |       |      |    |      |       |       |       |       |
| PI    | 1.064 |     |       |      |    |      |       |       |       |       |
| PerA  | 1.222 |     |       |      |    |      |       |       |       |       |
| PerDN | 1.200 |     |       |      |    |      |       |       |       |       |
| PerTP | 1.078 |     |       |      |    |      |       |       | 1.001 |       |
| SE    |       |     |       |      |    |      |       |       |       |       |
| WTP   |       |     |       |      |    |      |       |       |       |       |

### 7.7.3 Coefficient of Determination (R-square)

This section presents the values of R-square, also called coefficient of determination, which refers to the overall effect size measure for the structural model. R-square values indicate the variance accounted for in the dependent variables of the research model. The next step of analysis was to continue with partial least squares path modelling SEM for R-square analysis, as proposed by Astrachan, Patel and Wanzenried (2014), Hair *et al.* (2012) and Sarstedt *et al.* (2014). In phase two of this research, the validity of the structural model was evaluated, based on the coefficients of determination (R<sup>2</sup>) and path coefficients.

Examining the structural model enables the assessment of its predictive power. In other words, this is to see the percentage of variance in the dependent factors or variables that the independent factors

or variables in the structural model can account for. In this research, one of the goals of this analysis was to examine the collective ability of the independent factors (including EnI, EnSI, EnK, PI, PerTP, PerA and PerDN) to explain the variances in behavioural purchase intention (BI), willingness to pay (WTP) and shopping effort (SE) towards purchasing packaged instant noodles relating to eco-friendly packaging. The R<sup>2</sup> value indicates “the amount of variance in dependent variables that is explained by independent variables” (Chin, 1998, p.332). SmartPLS algorithm generated the R<sup>2</sup> values, and the SmartPLS bootstrapping could calculate the t-statistics values. At this step, it was essential to examine the R<sup>2</sup> (variance accounted for) scores of the dependent variables of interest - BI, WTP and SE (see Table 7-11). Chin (1998) stated that the explanatory power is considered substantial, moderate, and weak if R-square is around 0.67, 0.33 and 0.19 respectively.

**Table 7-11: Coefficient of determination (R<sup>2</sup>)**

|            | <b>R<sup>2</sup></b> | <b>R<sup>2</sup>Adjusted</b> |
|------------|----------------------|------------------------------|
| <b>BI</b>  | 0.294                | 0.281                        |
| <b>SE</b>  | 0.437                | 0.434                        |
| <b>WTP</b> | 0.459                | 0.458                        |

As shown in Table 7-11, the research model explains 28.1 per cent of the variance in behavioural purchase intention for eco-friendly packaged instant noodles, 43.4 per cent in shopping effort and 45.8 per cent in willingness to pay. As the measurement model satisfied convergent and discriminant validities (see Section 7.6), it was not an estimation problem; rather, it was a research result. Chapter 8 explains these results from the research context, comparing with empirical results from previous studies on green purchase intention. Section 7.7.4 which follows presents the structural path analysis of the research model.

#### **7.7.4 Structural Path Analysis**

Structural path analysis continued as the basis for hypothesis testing in this research. The examination of the structural model allows the inspection of various paths (arrows moving from one construct to another) in the research model (Wong, 2013). Each structural path in the research model represents a proposed hypothesis. The results of the structural model analysis were used in the acceptance (confirmation) or rejection (disconfirmation) of each research hypothesis as well as the comparisons of the impacts of various independent constructs on the dependent one(s).

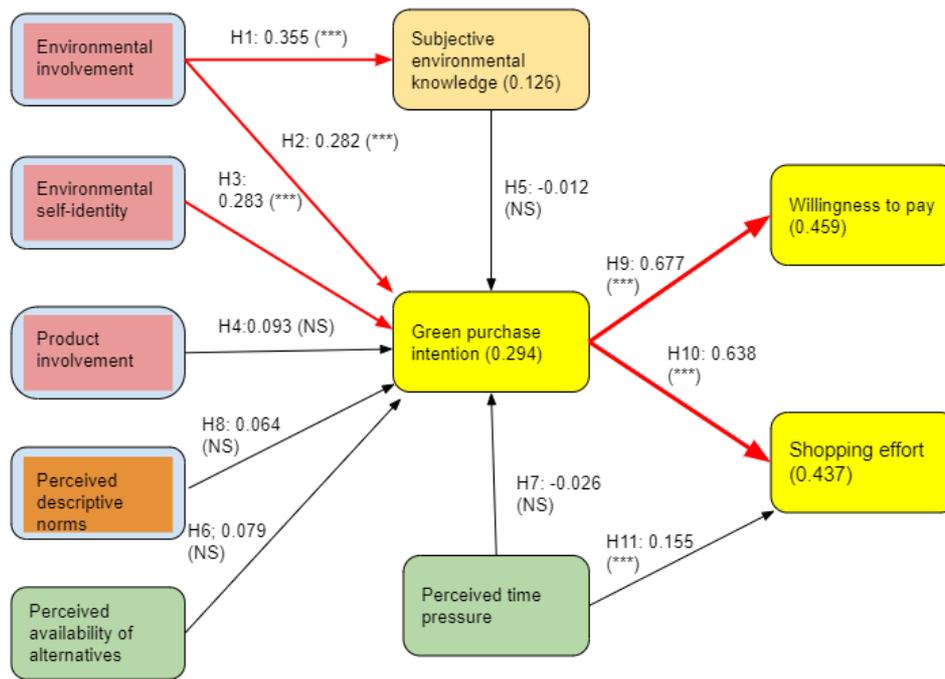
This research aimed to predict and understand the impact that each of the variables in the research model may have on behavioural purchase intention. Also, it explored the relationships of behavioural purchase intention with willingness to pay and shopping effort for eco-friendly packaged instant noodles. Reaching this understanding involves not only measuring the impact of each variable but also comparing this impact with that of other variables in the research model. Therefore, structural path analysis was performed in order to:

- show path coefficients to confirm or disconfirm each of the research hypotheses (7.7.4.1)
- compare the unique contribution that each of the independent factors makes in predicting the dependent variables (7.7.4.2)

#### **7.7.4.1 Path Coefficients**

This section presents the results of path coefficients for each of the hypothesised relationships between the variables tested. Each path in the structural model represents a research hypothesis on the relationship between two variables. Structural path analysis yields results that can help support or reject each hypothesis (Hair, Ringle and Sarstedt, 2011). Furthermore, the results can help the researcher to examine the relationships (if any) between independent and dependent variables. In SmartPLS, the strength and the significance (or insignificance) of each structural path or hypothesis can be explored and studied. SmartPLS calculates a path coefficient or a beta value ( $\beta$ ), which indicates the strength of each path. Reading the path coefficient values helps to specify how many per cent each independent variable contributes to the explanation of the variance in the dependent variable(s) (Hair, Ringle and Sarstedt, 2011; Wong, 2013). According to Hair, Ringle and Sarstedt (2011), the path coefficient value should be 0.1 and above to signify an effect within the structural model. Thus, in this research, only the path coefficients from 0.1 and above ( $\beta > 0.1$ ) were reported as significant effects.

Figure 7-3 presents the results of the PLS path analysis for structural model assessment. It shows that six path coefficients ( $EnI \rightarrow EnK$ ,  $EnI \rightarrow BI$ ,  $EnSI \rightarrow BI$ ,  $BI \rightarrow WTP$ ,  $BI \rightarrow SE$ ,  $PerTP \rightarrow SE$ ) are significant at  $\beta > 0.1$ . Five path coefficients ( $EnK \rightarrow BI$ ,  $PI \rightarrow BI$ ,  $PerA \rightarrow BI$ ,  $PerDN \rightarrow BI$ ,  $PerTP \rightarrow BI$ ) are not significant at  $\beta < 0.1$ . These results were used in hypothesis testing (see Section 7.7.5). The full results of the PLS path analysis extracted from SmartPLS 3.0 is provided in Appendix 10.



**Figure 7-3: Results of Structural Model Assessment**

#### 7.7.4.2 Significance Testing

To test significance of both the inner (structural) and outer (measurement) models, bootstrapping was conducted to generate T-statistics. In SmartPLS, the statistical significance (or insignificance) of each hypothesis or path can be examined by applying a bootstrapping analysis (Chin 1998). T-statistics shows whether the path coefficients of the measurement model and the structural model are significant (Chin, 1998). As a rule of thumb, T-statistics larger than 1.96 at  $p\text{-value} < 0.05$  indicate significant path coefficients (Wong, 2013). In this research, reports on direct effects, indirect effects, and total effects of independent variables on dependent variables were produced in SmartPLS 3.0. Table 7-12 shows the direct effects and Table 7-13 shows the indirect effects of independent variables on dependent variables. Table 7-14 shows total path coefficients of the (inner) measurement model.

**Table 7-12: T-Statistics of direct Path Coefficients (Inner model)**

|            | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ( O/STDEV ) | P Values |
|------------|---------------------|-----------------|----------------------------|--------------------------|----------|
| BI -> SE   | 0.639               | 0.640           | 0.037                      | 17.444                   | 0.000    |
| BI -> WTP  | 0.677               | 0.677           | 0.043                      | 15.913                   | 0.000    |
| EnI -> BI  | 0.280               | 0.285           | 0.072                      | 3.902                    | 0.000    |
| EnI -> EnK | 0.355               | 0.369           | 0.050                      | 7.071                    | 0.000    |

|                       |        |        |       |              |       |
|-----------------------|--------|--------|-------|--------------|-------|
| <b>EnK -&gt; BI</b>   | -0.014 | -0.011 | 0.061 | 0.224        | 0.823 |
| <b>EnSI -&gt; BI</b>  | 0.285  | 0.278  | 0.072 | <b>3.965</b> | 0.000 |
| <b>PI -&gt; BI</b>    | 0.090  | 0.100  | 0.063 | 1.433        | 0.153 |
| <b>PerA -&gt; BI</b>  | 0.075  | 0.088  | 0.060 | 1.242        | 0.215 |
| <b>PerDN -&gt; BI</b> | 0.061  | 0.044  | 0.093 | 0.659        | 0.510 |
| <b>PerTP -&gt; SE</b> | 0.154  | 0.159  | 0.048 | <b>3.195</b> | 0.001 |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level

In relation to direct effects, Table 7-12 shows that six linkages BI→SE, BI→WTP, EnI→BI, EnI→EnK, EnSI→BI, PerTP→SE are significant at T-statistics of above 1.96. All other direct linkages have T-statistics lower than 1.96. Therefore, it can be said that the six direct path coefficients BI→SE, BI→WTP, EnI→BI, EnI→EnK, EnSI→BI and PerTP→SE are statistically significant while the remaining linkages are not. In other words, behavioural purchase intention (BI) was found to directly influence both willingness to pay (WTP) and shopping effort (SE). Likewise, both environmental self-identity (EnSI) and environmental involvement (EnI) directly affect behavioural purchase intention (BI). In addition, two direct positive relationships were found between perceived time pressure (PerTP) and shopping effort (SE) as well as between environmental involvement (EnI) and subjective environmental knowledge (EnK). However, subjective environmental knowledge (EnK) was found to have no direct association with behavioural purchase intention (BI). Therefore, environmental involvement (EnI) affects behavioural purchase intention directly, but not indirectly through environmental knowledge (EnK) as expected (see Section 3.2.4, Chapter 3). These results are further discussed in Chapter 8.

**Table 7-13: T-Statistics of indirect Path Coefficients (Inner model)**

|                       | <b>Original Sample (O)</b> | <b>Sample Mean (M)</b> | <b>Standard Deviation (STDEV)</b> | <b>T Statistics ( O/STDEV )</b> | <b>P Values</b> |
|-----------------------|----------------------------|------------------------|-----------------------------------|---------------------------------|-----------------|
| <b>BI -&gt; SE</b>    |                            |                        |                                   |                                 |                 |
| <b>BI -&gt; WTP</b>   |                            |                        |                                   |                                 |                 |
| <b>EnI -&gt; BI</b>   | -0.005                     | -0.005                 | 0.023                             | 0.211                           | 0.833           |
| <b>EnI -&gt; EnK</b>  |                            |                        |                                   |                                 |                 |
| <b>EnI -&gt; SE</b>   | 0.176                      | 0.179                  | 0.047                             | <b>3.745</b>                    | 0.000           |
| <b>EnI -&gt; WTP</b>  | 0.186                      | 0.190                  | 0.051                             | <b>3.655</b>                    | 0.000           |
| <b>EnK -&gt; BI</b>   |                            |                        |                                   |                                 |                 |
| <b>EnK -&gt; SE</b>   | -0.009                     | -0.007                 | 0.039                             | 0.224                           | 0.823           |
| <b>EnK -&gt; WTP</b>  | -0.009                     | -0.008                 | 0.041                             | 0.225                           | 0.822           |
| <b>EnSI -&gt; BI</b>  |                            |                        |                                   |                                 |                 |
| <b>EnSI -&gt; SE</b>  | 0.182                      | 0.178                  | 0.048                             | <b>3.756</b>                    | 0.000           |
| <b>EnSI -&gt; WTP</b> | 0.193                      | 0.189                  | 0.052                             | <b>3.727</b>                    | 0.000           |
| <b>PI -&gt; BI</b>    |                            |                        |                                   |                                 |                 |
| <b>PI -&gt; SE</b>    | 0.058                      | 0.064                  | 0.041                             | 1.425                           | 0.155           |

|              | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ( O/STDEV ) | P Values |
|--------------|---------------------|-----------------|----------------------------|--------------------------|----------|
| PI -> WTP    | 0.061               | 0.067           | 0.043                      | 1.434                    | 0.152    |
| PerA -> BI   |                     |                 |                            |                          |          |
| PerA -> SE   | 0.048               | 0.056           | 0.039                      | 1.230                    | 0.219    |
| PerA -> WTP  | 0.051               | 0.059           | 0.040                      | 1.252                    | 0.211    |
| PerDN -> BI  |                     |                 |                            |                          |          |
| PerDN -> SE  | 0.039               | 0.029           | 0.059                      | 0.660                    | 0.510    |
| PerDN -> WTP | 0.041               | 0.031           | 0.062                      | 0.663                    | 0.508    |
| PerTP -> SE  |                     |                 |                            |                          |          |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level

In terms of indirect effects, Table 7-13 indicates that four indirect linkages EnI→SE, EnI→WTP, EnSI→SE and EnSI→WTP are significant at T-statistics of above 1.96. All the other indirect linkages have T-statistics lower than 1.96. Therefore, it can be said that the four indirect path coefficients EnI→SE, EnI→WTP, EnSI→SE and EnSI→WTP are statistically significant while the remaining indirect linkages are not. To elaborate, in the research model, only two independent variables, environmental involvement (EnI) and environmental self-identity (EnSI) have indirect effects on willingness to pay (WTP) and shopping effort (SE). All the other independent variables show no indirect linkages with willingness to pay (WTP) and shopping effort (SE).

The results imply that environmental involvement (EnI) and environmental self-identity (EnSI) have indirect effects on shopping effort (SE) and willingness to pay (WTP) through behavioural purchase intention (BI). Accordingly, a chain of effects was noticed and purchase intention appeared to mediate the two detected indirect relationships. Further research would be needed to explore this chain of effects as it was not covered in the questions and hypotheses within the current research scope. This is mentioned as a research limitation in Section 9.4, Chapter 9. Discussions on the indirect effects of environmental involvement and environmental self-identity are supplied in Chapter 8.

**Table 7-14: T-Statistics of total Path Coefficients (Inner model)**

|            | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ( O/STDEV ) | P Values |
|------------|---------------------|-----------------|----------------------------|--------------------------|----------|
| BI -> SE   | 0.638               | 0.640           | 0.037                      | <b>17.219</b>            | 0.000    |
| BI -> WTP  | 0.677               | 0.682           | 0.041                      | <b>16.715</b>            | 0.000    |
| EnI -> BI  | 0.277               | 0.274           | 0.073                      | <b>3.823</b>             | 0.000    |
| EnI -> EnK | 0.355               | 0.365           | 0.049                      | <b>7.205</b>             | 0.000    |
| EnI -> SE  | 0.177               | 0.176           | 0.047                      | <b>3.731</b>             | 0.000    |

|                        | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ( O/STDEV) | P Values |
|------------------------|---------------------|-----------------|----------------------------|-------------------------|----------|
| <b>EnI -&gt; WTP</b>   | 0.188               | 0.187           | 0.050                      | <b>3.734</b>            | 0.000    |
| <b>EnK -&gt; BI</b>    | -0.012              | -0.014          | 0.060                      | 0.209                   | 0.835    |
| <b>EnK -&gt; SE</b>    | -0.008              | -0.009          | 0.038                      | 0.208                   | 0.835    |
| <b>EnK -&gt; WTP</b>   | -0.008              | -0.009          | 0.041                      | 0.206                   | 0.837    |
| <b>EnSI -&gt; BI</b>   | 0.283               | 0.280           | 0.069                      | <b>4.128</b>            | 0.000    |
| <b>EnSI -&gt; SE</b>   | 0.181               | 0.179           | 0.046                      | <b>3.894</b>            | 0.000    |
| <b>EnSI -&gt; WTP</b>  | 0.192               | 0.191           | 0.050                      | <b>3.834</b>            | 0.000    |
| <b>PI -&gt; BI</b>     | 0.093               | 0.102           | 0.065                      | 1.420                   | 0.156    |
| <b>PI -&gt; SE</b>     | 0.059               | 0.066           | 0.042                      | 1.409                   | 0.159    |
| <b>PI -&gt; WTP</b>    | 0.063               | 0.070           | 0.045                      | 1.402                   | 0.161    |
| <b>PerA -&gt; BI</b>   | 0.079               | 0.090           | 0.058                      | 1.357                   | 0.175    |
| <b>PerA -&gt; SE</b>   | 0.050               | 0.057           | 0.037                      | 1.343                   | 0.180    |
| <b>PerA -&gt; WTP</b>  | 0.053               | 0.061           | 0.039                      | 1.361                   | 0.174    |
| <b>PerDN -&gt; BI</b>  | 0.064               | 0.038           | 0.098                      | 0.654                   | 0.513    |
| <b>PerDN -&gt; SE</b>  | 0.041               | 0.025           | 0.063                      | 0.652                   | 0.515    |
| <b>PerDN -&gt; WTP</b> | 0.043               | 0.026           | 0.067                      | 0.648                   | 0.517    |
| <b>PerTP -&gt; BI</b>  | -0.026              | -0.018          | 0.059                      | 0.447                   | 0.655    |
| <b>PerTP -&gt; SE</b>  | 0.138               | 0.145           | 0.057                      | <b>2.408</b>            | 0.016    |
| <b>PerTP -&gt; WTP</b> | -0.018              | -0.012          | 0.041                      | 0.441                   | 0.659    |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level

With respect to the total path coefficients, Table 7-14 shows that ten linkages (highlighted) between BI→SE, BI→WTP, EnI→BI, EnI→EnK, EnI→SE, EnI→WTP, EnSI→BI, EnSI→SE, EnSI→WTP, PerTP→SE are significant at T-statistics higher than 1.96 at p-values <0.001, <0.01 and <0.05. The remaining linkages are insignificant at T-statistics below 1.96 at p-values>0.05. The results indicate that only part of the proposed research model is empirically supported, in which the relationships between purchase intention and willingness to pay and shopping effort are most impactful in this research. Also, environmental involvement (EnI) and environmental self-identify (EnSI) both have significant influences on purchase intention. More discussion on these findings is provided in Chapter 8.

After examining the path coefficients for the inner (structural) model (see Table 7-12, Table 7-13, Table 7-14), the outer (measurement) model was explored, using T-statistics in the “Outer Loadings (Means, STDEV, T-Values)” window. Table 7-15 below shows T-statistics of the path coefficients for the outer (measurement) model. These results completed the PLS-SEM analysis in phase two of this research.

**Table 7-15: T-Statistics of Path Coefficients (Outer Model)**

|                 | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics ( O/STDEV ) | P Values |
|-----------------|---------------------|-----------------|----------------------------|--------------------------|----------|
| BI1 <- BI       | 0.924               | 0.924           | 0.009                      | 100.565                  | 0.000    |
| BI2 <- BI       | 0.954               | 0.953           | 0.007                      | 131.798                  | 0.000    |
| BI3 <- BI       | 0.927               | 0.927           | 0.009                      | 101.401                  | 0.000    |
| EnI1 <- EnI     | 0.849               | 0.850           | 0.022                      | 38.882                   | 0.000    |
| EnI2 <- EnI     | 0.876               | 0.876           | 0.020                      | 43.807                   | 0.000    |
| EnI3 <- EnI     | 0.870               | 0.871           | 0.018                      | 48.882                   | 0.000    |
| EnI4 <- EnI     | 0.561               | 0.559           | 0.067                      | 8.344                    | 0.000    |
| EnK1 <- EnK     | 0.953               | 0.950           | 0.015                      | 62.070                   | 0.000    |
| EnK2 <- EnK     | 0.603               | 0.598           | 0.109                      | 5.542                    | 0.000    |
| EnK3 <- EnK     | 0.681               | 0.674           | 0.078                      | 8.742                    | 0.000    |
| EnSI1 <- EnSI   | 0.877               | 0.876           | 0.020                      | 42.869                   | 0.000    |
| EnSI2 <- EnSI   | 0.949               | 0.949           | 0.008                      | 118.929                  | 0.000    |
| EnSI3 <- EnSI   | 0.938               | 0.938           | 0.008                      | 117.846                  | 0.000    |
| PI1 <- PI       | 0.743               | 0.686           | 0.179                      | 4.152                    | 0.000    |
| PI2 <- PI       | 0.958               | 0.880           | 0.238                      | 4.033                    | 0.000    |
| PI3 <- PI       | 0.723               | 0.670           | 0.191                      | 3.795                    | 0.000    |
| PerA1 <- PerA   | 0.912               | 0.866           | 0.153                      | 5.958                    | 0.000    |
| PerA2 <- PerA   | 0.946               | 0.899           | 0.153                      | 6.165                    | 0.000    |
| PerA3 <- PerA   | 0.931               | 0.892           | 0.148                      | 6.276                    | 0.000    |
| PerDN1 <- PerDN | 0.996               | 0.783           | 0.389                      | 2.558                    | 0.011    |
| PerDN2 <- PerDN | 0.576               | 0.587           | 0.262                      | 2.193                    | 0.029    |
| PerDN3 <- PerDN | 0.516               | 0.548           | 0.276                      | 1.867                    | 0.063    |
| PerTP1 <- PerTP | 0.824               | 0.806           | 0.094                      | 8.753                    | 0.000    |
| PerTP2 <- PerTP | 0.887               | 0.868           | 0.075                      | 11.765                   | 0.000    |
| PerTP3 <- PerTP | 0.876               | 0.857           | 0.065                      | 13.490                   | 0.000    |
| PerTP4 <- PerTP | 0.712               | 0.696           | 0.136                      | 5.231                    | 0.000    |
| SE1 <- SE       | 0.941               | 0.940           | 0.009                      | 108.966                  | 0.000    |
| SE2 <- SE       | 0.934               | 0.933           | 0.009                      | 106.246                  | 0.000    |
| SE3 <- SE       | 0.873               | 0.873           | 0.018                      | 49.048                   | 0.000    |
| WTP1 <- WTP     | 0.907               | 0.908           | 0.016                      | 57.844                   | 0.000    |
| WTP2 <- WTP     | 0.843               | 0.845           | 0.032                      | 26.437                   | 0.000    |
| WTP3 <- WTP     | 0.904               | 0.906           | 0.021                      | 43.205                   | 0.000    |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level

As can be seen in Table 7-15, all T-statistical values are more than 1.96 (except for PerDN3 at 1.867), showing that the outer model loadings are all significant. It means that almost all the reflective indicators in the model are highly meaningful in measuring their respective constructs. This can be explained by using the rule of thumb in model evaluation suggested by Hair, Ringle and Sarstedt (2011) that t-statistics is important for formative indicators (t-statistical value should be

higher than 1.96). In case of reflective indicators like in the scope of this research, it is essential to check the indicator's loadings (Hair, Ringle and Sarstedt, 2011) to ensure it measures its respective construct and not others. PerDN3's loading is higher than all of its cross-loadings (see Section 7.6.2.1, Table 7-7), meaning that it measures the respective construct (PerDN) and not the other constructs in the model. So this is not an issue with PerDN3 though its t-statistic value is lower than 1.96.

To summarise all analyses relating to the structural path coefficients as shown in Figure 7-3, Table 7-16 is provided to reflect all T-statistics and significant levels of all hypothesised paths. These results are consolidated from Table 7-12, Table 7-13, Table 7-14 and Table 7-15.

**Table 7-16: T-Statistics and significance level for all hypothesised paths**

|   |        | Path Coefficients | T-Statistics | Significant levels |
|---|--------|-------------------|--------------|--------------------|
| Behavioural green purchase intention (BI) | ←EnI   | 0.282             | 3.823        | ***                |
|   | ←EnK   | -0.012            | 0.209        | N/S                |
|   | ←EnSI  | 0.283             | 4.128        | ***                |
|   | ←PerDN | 0.064             | 0.654        | N/S                |
|   | ←PerA  | 0.079             | 1.357        | N/S                |
|   | ←PI    | 0.093             | 1.420        | N/S                |
|   | ←PerTP | -0.026            | 0.447        | N/S                |
| Willingness to Pay (WTP)                  | ←BI    | 0.677             | 16.715       | ***                |
| Shopping effort (SE)                      | ←BI    | 0.638             | 17.219       | ***                |
|   | ←PerTP | 0.155             | 2.408        | ***                |
| Subjective environmental knowledge (EnK)  | ←EnI   | 0.355             | 7.205        | ***                |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level, confidence interval at 97.5 per cent (Cohen, 1998)

The results shown in Table 7-16 indicate that only part of the proposed research model was empirically supported. To elaborate, if linked back to the MAO approach, based on which the research model was built, only two out of three factors relating to motivation, environmental involvement (EnI) and environmental self-identity (EnSI), have significant impacts directly on behavioural purchase intention (BI). The factors relating to ability (subjective environmental knowledge and perceived time pressure) and the factor relating to opportunity (perceived

availability of alternatives) have insignificant impacts on green purchase intention for instant noodles in eco-friendly packaging. In addition, of the two factors, environmental self-identity (EnSI) and environmental involvement (EnI) which were found to significantly influence behavioural purchase intention (BI), the effect of environmental self-identity was more significant. Overall, the comparison of path coefficients indicates that environment self-identity (EnSI) was found to have the most significant effect on green purchase intention ( $\beta = 0.283$ ,  $t = 4.128$ ,  $p < 0.001$ ) within this research. The results shown in Table 7-16 are consolidated in Table 7-17 to present hypothesis testing results. Hypothesis testing results are discussed in the following section 7.7.5.

### 7.7.5 Hypothesis Testing

This section illustrates the testing of the proposed hypotheses in this PhD research. Given all results from the structural path assessment in Section 7.7.4 and the summary of all hypothesised paths in Table 7-16, each of the proposed hypotheses was examined for acceptance or rejection. Accordingly, the path coefficients between latent variables were evaluated (see Table 7-16). The analysis shows that five hypotheses are accepted having a significant level of at least 0.05, T-statistics of more than 1.96, expected positive or negative sign directions and a path coefficient value ( $\beta$ ) ranging from 0.282 to 0.677. After considering and examining the path estimates of the structural model (see Table 7-16), all eleven research hypotheses were tested with the results summarised in Table 7-17.

**Table 7-17: Hypothesis Testing Results**

| Hypothesis |   | Standardised path estimate (Effect) | Hypothesised direction | P-value | Supported? |
|------------|---|-------------------------------------|------------------------|---------|------------|
| H1         | Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging.                        | 0.355                               | Positive               | ***     | Yes        |
| H2         | Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging. | 0.282                               | Positive               | ***     | Yes        |

| Hypothesis |  | Standardised path estimate (Effect) | Hypothesised direction | P-value | Supported? |
|------------|--|-------------------------------------|------------------------|---------|------------|
| H3         | Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.  | 0.283                               | Positive               | ***     | Yes        |
| H4         | Product involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.  | 0.093                               | Positive               | N/S     | No         |
| H5         | Subjective environmental knowledge concerning eco-friendly packaging is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.   | -0.012                              | Positive               | N/S     | No         |
| H6         | Increased perceived availability of eco-friendly packaged alternatives is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging. | 0.079                               | Positive               | N/S     | No         |
| H7         | Perceived time pressure is negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.  | -0.026                              | Negative               | N/S     | No         |
| H8         | Perceived descriptive norms are positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging.   | 0.064                               | Positive               | N/S     | No         |
| H9         | Green purchase intention is positively related to willingness to pay for instant noodles in eco-friendly packaging.  | 0.677                               | Positive               | ***     | Yes        |
| H10        | Green purchase intention is positively related to shopping effort for instant noodles in eco-friendly packaging.   | 0.638                               | Positive               | ***     | Yes        |

| Hypothesis |   | Standardised path estimate (Effect) | Hypothesised direction | P-value | Supported? |
|------------|---|-------------------------------------|------------------------|---------|------------|
| H11        | Perceived time pressure is negatively related to shopping effort for instant noodles in eco-friendly packaging. | 0.155                               | Negative               | ***     | No         |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level, Confidence interval: 97.5% (Cohen, 1998)

As can be seen from Table 7-17, among eleven proposed research hypotheses, five are supported with significant relationships in the hypothesised directions at 97.5 per cent confidence interval. The analysis shows that environmental knowledge is directly affected by environmental involvement ( $\beta = 0.355$ ,  $t = 7.205$ ,  $p < 0.001$ ) and that behavioural purchase intention is influenced directly by environmental involvement ( $\beta = 0.282$ ,  $t = 3.823$ ,  $p < 0.001$ ). Hence, H1 and H2 are accepted. Furthermore, the analysis shows that environmental self-identity positively produces behavioural purchase intention ( $\beta = 0.283$ ,  $t = 4.128$ ,  $p < 0.001$ ). Therefore, H3 is accepted. The analysis also indicates that willingness to pay is a direct outcome of behavioural purchase intention ( $\beta = 0.677$ ,  $t = 16.715$ ,  $p < 0.001$ ) and shopping effort is directly influenced by behavioural purchase intention ( $\beta = 0.638$ ,  $t = 17.219$ ,  $p < 0.001$ ). Hence, H9 and H10 are strongly supported.

The other six hypotheses (H4, H5, H6, H7, H8, H11) are not supported with  $\beta < 0.1$ ,  $t < 1.96$ ,  $p > 0.05$ . To elaborate, the research results did not report any significant relationships of product involvement (H4), subjective environmental knowledge (H5), perceived availability of alternatives (H6), perceived time pressure (H7), and perceived descriptive norms (H8) with behavioural purchase intention. In other words, product involvement, subjective environmental knowledge, perceived availability of alternatives and perceived descriptive norms do not significantly affect green purchase intention for eco-friendly packaging. Furthermore, this research did not report any negative relationship between perceived time pressure and shopping effort (H11). The research results demonstrate that this relationship is significant but in the opposite direction, a positive not negative relationship as hypothesised ( $\beta = 0.155$ ,  $p < 0.001$ ). In other words, perceived time pressure does not decrease shopping effort as hypothesised.

Overall, five hypotheses were supported out of eleven hypotheses to be tested in phase two of this research. The discussion on the research findings from hypothesis testing is presented in Chapter 8.

### 7.7.6 Indirect Effects

This section illustrates the testing of the indirect effects though no hypotheses were formulated relating to indirect relationships within the research model (see Chapter 3). Table 7-18 provides a summary of the results of the indirect effect assessment within the research model (see Section 7.7.4.2).

**Table 7-18: Summary of the results of indirect effect assessment**

| Indirect path coefficient | T Statistics | P-value | Supported? |
|---------------------------|--------------|---------|------------|
| EnI -> BI                 | 0.211        | N/S     | No         |
| EnI -> SE                 | 3.745        | ***     | Yes        |
| EnI -> WTP                | 3.655        | ***     | Yes        |
| EnK -> SE                 | 0.224        | N/S     | No         |
| EnK -> WTP                | 0.225        | N/S     | No         |
| EnSI -> SE                | 3.756        | ***     | Yes        |
| EnSI -> WTP               | 3.727        | ***     | Yes        |
| PI -> SE                  | 1.425        | N/S     | No         |
| PI -> WTP                 | 1.434        | N/S     | No         |
| PerA -> SE                | 1.230        | N/S     | No         |
| PerA -> WTP               | 1.252        | N/S     | No         |
| PerDN -> SE               | 0.660        | N/S     | No         |
| PerDN -> WTP              | 0.663        | N/S     | No         |

\*\*\*p<0.001, \*\*p<0.01, \* p <0.05, N/S (not significant) at 0.05 level (Cohen, 1998)

Given the results from the significance testing of indirect effects in Section 7.7.4.2, environmental involvement (EnI) and environmental self-identity (EnSI) were found to have indirect impacts on willingness to pay (WTP) and shopping effort (SE). Table 7-18 indicates that four indirect linkages EnI→SE, EnI→WTP, EnSI→SE and EnSI→WTP are significant at T-statistics of above 1.96. The discussion on the findings relating to the supported indirect effects is presented in Chapter 8.

### 7.8 CHAPTER SUMMARY

This chapter discussed PLS-SEM statistical analysis for the assessment of the measurement model and the structural model. In addition, the results of hypotheses testing were presented. All measures in the measurement model satisfied reliability and validity tests. Internal consistency was

satisfactory with the research constructs having composite reliability values ranging from 0.755 to 0.954. The measurement model also demonstrated satisfactory convergent and discriminant validities. Almost all item loadings are higher than 0.7 and are significant at the p-value of 0.001. AVE values are greater than 0.50. In addition, all manifest indicators were loaded on their designated constructs and the square roots of AVE for each construct are higher than its inter-correlation.

In terms of the validation of the structural model, satisfactory results were shown in R square adjusted. To elaborate, the research model explains 28.1 per cent of the variance in green purchase intention (BI), 43.4 per cent in shopping effort (SE) and 45.8 per cent in willingness to pay (WTP) for eco-friendly packaged instant noodles. Using the criteria adopted by Chin (1998), the model R square adjusted for green purchase intention is considered as weak whereas R squares adjusted for shopping effort and willingness to pay are moderate. Based on the path coefficient assessment, five out of eleven hypotheses are accepted, with significant levels between 0.001 and 0.05, T-statistics of more than 1.96, and a path coefficient value ( $\beta$ ) ranging from 0.282 to 0.677.

In terms of the assessment of indirect effects, environmental involvement (EnI) and environmental self-identity (EnSI) were found to indirectly influence willingness to pay (WTP) and shopping effort (SE). Four indirect linkages EnI $\rightarrow$ SE, EnI $\rightarrow$ WTP, EnSI $\rightarrow$ SE and EnSI $\rightarrow$ WTP are significant at T-statistics of above 1.96. The next chapter (Chapter 8) provides in-depth discussions of the research findings.

## CHAPTER 8 - DISCUSSION OF RESEARCH RESULTS

### 8.1 INTRODUCTION

This chapter supplies a discussion on the main research findings. Section 8.2 discusses direct antecedents of green purchase intention, including significant and non-significant relationships. Section 8.3 reviews the significant relationships of behavioural purchase intention with willingness to pay and shopping effort. Section 8.4 and Section 8.5 discuss the indirect effects of environmental involvement and environmental self-identity on willingness to pay and shopping effort respectively. In each of the debates, the findings of this research are analysed in light of the green consumption literature. Section 8.5 is a synopsis of the main research findings relating to supported hypotheses.

### 8.2 DIRECT ANTECEDENTS OF GREEN PURCHASE INTENTION

This section reports the findings relating to the relationships between the studied independent constructs and the main dependent construct, green purchase intention. This research proposed that green purchase intention for instant noodles in eco-friendly packaging could be affected by internal psychological factors and external contextual social factors. Moreover, green purchase intention was predicted to influence shopping effort and willingness to pay for instant noodles in eco-friendly packaging. The literature review identified internal and external antecedents which were validated in the qualitative phase of the research. The validated antecedents were environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived time pressure, perceived availability of alternatives and perceived descriptive norms.

Five out of eleven hypotheses were supported by the research data. First, environmental involvement was found to affect subjective environmental knowledge and H1 (*“Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging”*) was supported. Next, the structural path between environmental involvement and green purchase intention was significant in the positive direction, so H2 (*“Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging”*) was accepted. Likewise, environmental self-identity also had a positive and significant structural path with green purchase intention and therefore H3 (*“Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging”*) was aptly supported. Overall, environmental self-identify involvement had a stronger impact on green purchase intention than environmental involvement did (effect =

0.283 and 0.282 respectively). The two hypotheses relating to the effects of green purchase intention on willingness to pay (H9) and shopping effort (H10) were also aptly supported (effect = 0.677 and 0.638 respectively).

The other six hypotheses were not supported by the research data. Product involvement (H4), subjective environmental knowledge (H5), perceived availability of alternatives (H6), perceived time pressure (H7), and perceived descriptive norms (H8) did not have significant direct relationships with behavioural purchase intention as hypothesised. Hence, these hypotheses were rejected. Likewise, perceived time pressure was not found to negatively affect shopping effort as expected and H11 was thus rejected too.

When linked back to the direction of the MAO approach based on which the research model was built, only part of the research model was confirmed by the research data. To elaborate, only two out of three factors relating to motivation (environmental self-identity and environmental involvement) directly and significantly influence green purchase intention for a food product (instant noodles) in eco-friendly packaging as hypothesised. Other factors relating to opportunity and ability to make green purchases were shown not to produce any direct significant effects on green purchase intention. This finding offers important implications to marketers of low-involvement products such as packaged instant noodles in the emerging market of Vietnam. This may mean that in Vietnam, green marketing effort without first activating consumer motives has limited potential to influence green choices for inexpensive consumption. This also may mean that marketers should trigger consumer motivation to buy instant noodles in eco-friendly packaging by enhancing green consumer identities and consumer environmental involvement in marketing communication plans. Further research implications are discussed in Chapter 9.

Overall, statistical analysis shows that the proposed research model explained 28.1 per cent of the variance in green purchase intention for packaged instant noodles with regard to eco-friendly packaging. For comparison of the research results with prior research findings on green purchase intention, Table 8-1 lists the results of variance which explained the green purchase intention construct from similar studies. These studies were selected because they all examined green purchase intention in emerging markets from 2010 onwards, which is similar to this research.

**Table 8-1: Comparison of Results of Variance explained for Green Purchase Intention**

| <b>Authors</b>                  | <b>Findings</b>  | <b>Variance explained</b> |
|---------------------------------|--|---------------------------|
| Ramayah, Lee and Mohamad (2010) | This study was based on the motivational perspective of the Theory of Reasoned Action (TRA) to examine how consumers in a developing market (Malaysia) form green purchase intention towards a specific green product (cloth diapers), given their individual values and attitudes. It reported that individual consequences relating to amount of effort and convenience of consumers is negatively associated with green purchase intention. Also, environmental consequences were found to produce non-significant impacts on green purchase intention. | 0.26                      |
| Prakash and Pathak (2017)       | This study applied an extended TRA. In this study, 204 young Indian consumers were surveyed on green purchase intention for eco-friendly packaged products. Structural equation modelling was used for statistical analysis. The findings are that personal norms, attitude, environmental concern and willingness to pay are all significantly associated with purchase intention for eco-friendly packaging.   | 0.74                      |
| Wei <i>et al.</i> (2017)        | This study was based on the TRA for examining Taiwanese consumers' green purchase intention. Environmental involvement, green trust, green advertising scepticism and informational utility were reported to influence green purchase intention via attitude. The model explained 33 per cent of green purchase intention and behaviour for green products in the Taiwanese context.   | 0.33                      |
| Yadav and Pathak (2016)         | This research extended the Theory of Planned Behaviour (TPB) by adding environmental concern and environmental knowledge to make an extended model to examine young Indian consumers' green purchase intention. The results supported the inclusion of environmental concern and environmental knowledge in the extended TPB model.  | 0.37                      |
| Jaiswal and Kant (2018)         | This study was based on both the TRA and the TPB to examine Indian consumers' green purchase intention and behaviour towards green products. The results supported the addition of environmental concern and perceived consumer effectiveness in the research model. However, it disconfirmed the impact of perceived environmental knowledge on green purchase intention.   | 0.25                      |

Table 8-1 shows that the variance explained for green purchase intention in five previous studies ranges from 0.25 to 0.74. Antecedents of green purchase intention were explored from existing theoretical perspectives in the above-mentioned studies as outlined below.

First, studies by Ramayah, Lee and Mohamad (2010) and Prakash and Pathak (2017) both employed the TRA to examine green purchase intention of consumers in emerging markets (Malaysia and India respectively). Ramayah, Lee and Mohamad (2010) examined how values and attitudes as the motivational perspective of the TRA influenced consumers' purchase intention for a specific green product (cloth diapers). Meanwhile, Prakash and Pathak (2017) used an extended TRA with the additions of environmental concern and willingness to pay in order to explain young Indian consumers' purchase intention for eco-friendly packaged products. What is common between these two studies was the use of attitude as the main construct in the TRA which was reported to directly affect green purchase intention. Ramayah, Lee and Mohamad (2010) and Prakash and Pathak (2017) explained 26 per cent and 74 per cent of the variance in green purchase intention respectively.

Second, Wei *et al.* (2017)'s study was based on the TRA to examine green purchase intention and behaviour in the Taiwanese market. Environmental involvement, green trust, green advertising scepticism and informational utility were reported to affect green purchase intention via attitude. One of the important findings is that environmental involvement significantly and positively influences consumer attitude towards green products, which in turn positively affects green purchase intention and behaviour. The model explained 33 per cent of purchase intention and behaviour for green products in the Taiwanese market.

Next, in Yadav and Pathak (2016)'s study, green purchase intention was examined using the extended TPB with the inclusion of two additional constructs, namely, environmental concern and environmental knowledge. Self-administered questionnaire survey was used to collect data while structural equation modelling (SEM) was the statistical analysis method. This extended TPB model explained 37 per cent of the variance in green purchase intention of Indian consumers. The key findings of this study were that environmental concern and subjective environmental knowledge are both significantly related to green purchase intention (Yadav and Pathak, 2016). The findings supported the adoption of an extended TPB model to predict consumers' intention towards purchasing green products. Accordingly, additional constructs such as environmental concern and environmental knowledge proved to enhance the predictive power of the TPB significantly from 27.1 per cent to 37 per cent.

Finally, Jaiswal and Kant (2018)'s study was based on both the TRA and the TPB to examine green purchase intention and behaviour towards green products in India. The authors included attitude,

environmental concern, perceived consumer effectiveness and perceived environmental knowledge in the research model. The results confirmed the impacts of environmental concern and perceived consumer effectiveness on green purchase intention towards green products via attitude. Nevertheless, the results disconfirmed the association between perceived environmental knowledge with green purchase intention. Overall, Jaiswal and Kant (2018)'s study explained 25 per cent of the variance in green purchase intention. In addition, green purchase intention was found to explain 7.9 per cent of the variance in green purchase behaviour.

In summary, the above-mentioned studies on green purchase intention in emerging markets from 2010 onwards explored a wide range of antecedents of green purchase intention (see Table 8-1). These studies explained the variance of green purchase intention within a range from 25 per cent to 37 per cent (e.g., Jaiswal and Kant, 2018; Ramayah, Lee and Mohamad, 2010; Wei *et al.*, 2017; Yadav and Pathak, 2016), except for Prakash and Pathak (2017)'s at 74 per cent. Most of the studied factors are psychological, such as environmental concern, environmental involvement, environmental attitude, and environmental knowledge, which is partly similar to this research. Furthermore, all selected studies were based on the commonly used behavioural models, the TRA and/or the TPB and they all added more variables to extend the TRA and/or the TPB. This PhD research brought in new perspectives in the topic of green purchase intention. Compared to the five above-mentioned studies, the antecedents of green purchase intention in this research were extended by means of a holistic approach, based on the MAO direction combined with social norms theory. Therefore, this PhD thesis contributed to the current body of knowledge in developing an integrative model of green purchase intention to explore a range of both internal psychological factors and external contextual social factors. The integrative model was used in this research to identify which factors significantly influence green purchase intention in the emerging market context of Vietnam. As environmental issues have become more pressing for emerging economies like Vietnam, knowledge of influential factors of green purchase intention would provide useful input to the government and business sectors in their sustainability programs.

In addition, this research investigated green purchase intention for a specific packaged food product (instant noodles) relating to eco-friendly packaging, whereas most cited studies examined generic green products (Jaiswal and Kant, 2018; Prakash and Pathak, 2017; Wei *et al.*, 2017; Yadav and Pathak, 2016). Of the cited studies in Table 8-1, only Ramayah, Lee and Mohamad (2010) examined green purchase intention for a specific green product, similar to this research, though their studied product was different (cloth diapers). The focus of this research was thus consistent with the viewpoint of Rokka and Uutisalo (2008) in supporting the notion that environmental

consumer research should concentrate on specific green product choices, rather than on general attitude towards generic green products. Since consumers may show different levels of involvement with different product categories, the research focus on green purchase intention for a specific green product might shed more light on consumer insights in terms of willingness to pay and shopping effort, which would give more practical implications for industry. In this way, this research produced more findings in relation to the effects of green purchase intention on willingness to pay and shopping effort, which has been sparsely reported in the green consumption literature.

In short, the research model in this PhD thesis explained 28.1 per cent of the variance in green purchase intention for instant noodles in eco-friendly packaging, which is in the medium range of most cited studies presented in Table 8-1. However, the distinctive findings of this research are related to the relationships of green purchase intention with willingness to pay and shopping effort concerning eco-packaging, which no other studies in the same field have reported in the literature. This research reported the predictive power at 45.8 per cent for willingness to pay and 43.4 per cent for shopping effort, which were not covered in the above-cited studies.

Overall, this research confirmed five hypotheses relating to green purchase intention for packaged instant noodles with regard to eco-friendly packaging. The subsequent sections discuss significant and non-significant relationships between the factors studied in this research.

### **8.2.1 Significant Positive Impact of Environmental Involvement on Subjective Environmental Knowledge**

This section discusses the finding concerning the relationships between environmental involvement and environmental knowledge as hypothesised in this research. Both factors were hypothesised to produce impacts on green purchase intention. An additional hypothesis was put forward to explore the relationship (if any) between environmental involvement and subjective environmental knowledge. This research found that environmental involvement was significantly associated with subjective environmental knowledge ( $\beta = 0.282$ ,  $p < 0.001$ ). It appears that there is a great likelihood of the survey participants in agreement that they had a concern for the environment. Simultaneously, they reported high levels of subjective knowledge on the topic of eco-friendly packaging.

There are some possible explanations to this finding. First, consumers with higher environmental involvement may follow a central route of information processing in relation to the eco-friendly

characteristics of the product under consideration (Wei *et al.*, 2017), which is eco-friendly packaged instant noodles in this research. Environmental involvement may provide motivation to enrich environment-relevant knowledge. Second, those who are affectively involved with the environment may subjectively feel that they know more about the eco-friendly characteristics of products because they care for the environment. It was observed in phase one of this research that the focus group participants, who expressed a concern for and active involvement with the environment, claimed that they knew more about eco-friendly packaging (see Chapter 5). Hence, active involvement with the environment may help explain the higher level of subjective environmental knowledge claimed by the survey participants in phase two of this research.

The significant role of environmental involvement in increasing the level of subjective environmental knowledge indicates that the knowledge gap may be explained through the level of involvement of individuals with the environment. As individuals feel more affectively and actively committed to protect the environment, it is likely that they subjectively feel more knowledgeable about products with environment-friendly characteristics. This research, therefore, confirms the role environmental involvement plays in increasing subjective environmental knowledge. Since this is the first research that examined the effect of environmental involvement on subjective environmental knowledge concerning eco-friendly packaging in an emerging market, there are no data in prior green purchase intention studies to compare with this finding.

On a side note, since subjective environmental knowledge was demonstrated not to have a direct relationship with green purchase intention (see Chapter 7 and Section 8.2.2), it can be assumed that environmental involvement does not have an indirect effect with green purchase intention through subjective environmental involvement. Rather, environmental involvement does contribute directly to green purchase intention as shown in the research results (see Chapter 7). The analysis of the insignificant effect of subjective environmental knowledge on green purchase intention is given in Section 8.2.2. The discussion on the significant direct effect of environmental involvement on green purchase intention is provided in Section 8.2.3.

### **8.2.2 Non-significant Impact of Subjective Environmental Knowledge on Green Purchase Intention**

This section discusses the insignificant impact of environmental knowledge in relation to green purchase intention in this research. Phase one observed that most focus group participants reported a low level of knowledge of eco-friendly packaging. Moreover, most participants in the focus

groups were unable to appraise the meanings of environmental symbols on packaging. At least three focus group participants were still uncertain as to whether plastic packaging was eco-friendly. Phase one also witnessed a mixed consumer tendency towards purchase intention for packaged instant noodles concerning eco-friendly packaging. To shed light on the association (if any) between subjective environmental knowledge and green purchase intention, a research hypothesis was formulated and was explored in phase two.

Data analysis of phase two did not report a significant influence of subjective environmental knowledge on green purchase intention. This result is contrary to research findings in Goh and Balaji (2016), Mostafa (2007), Peattie (2010), Vicente-Molina, Fernández-Sáinz and Izagirre-Olaizola (2013), Wang, Liu and Qi (2014) and Yadav and Pathak (2016). These studies all found a considerable impact of environmental knowledge on green behaviour. It is most likely that the difference of green product categories under examination resulted in such a discrepancy. What is common in these preceding studies is the measurement of the impact of general environmental knowledge on general green purchase intention, but not related to a specified green product as in this research. The outstanding point of this research is that it followed the stream of investigating specific green behaviours displayed in specific product categories. As stated by Rokka and Uutisalo (2008), although consumers show preferences for eco-friendly packaging, it would be useful to do investigations into consumer preferences in specific product categories and not just generic green products. Hence, the research findings provide a more practical understanding of consumer purchase intention shown for instant noodles in eco-friendly packaging within the research context of Vietnam.

Some other studies in the green consumption literature have found insignificant influences of subjective environmental knowledge on green purchase intention, like this research. For example, Kempton, Boster and Hartley (1996) observed that environmental knowledge does not influence environmental behaviour. Likewise, consumers' level of environmental knowledge was reported to be weakly related to actual green purchase (Bang *et al.*, 2000; Laroche, Bergeron and Barbaro-Forleo, 2001). Similarly, Kollmuss and Agyeman (2002) discovered that environmental knowledge did not lead to environmental behaviour and most people did not have sufficient knowledge about environmental issues to act environmentally responsibly. Tan, Ooi and Goh (2017) also reported no significant positive relationships of environmental knowledge and green purchase intention for energy-efficient household appliances in Malaysia. Recently, a study by Jaiswal and Kant (2018) in India also disconfirmed the impact of perceived environmental knowledge on green purchase intention for green products. These prior studies primarily measured general environmental

knowledge, which is slightly different from the specific type of subjective environmental knowledge concerning eco-friendly packaging measured in this research. Hence, the finding of this research about the non-significant outcome of consumers' subjective knowledge of eco-friendly packaging on green purchase intention partly repeats past research findings.

Several studies can help explain the finding of the insignificant effect of subjective environmental knowledge on green purchase intention in this research. As Barkmann and Bögeholz (1999) pointed out, the influence of environmental knowledge could be a question mark although it seemed environmental actions would be based on environmental knowledge. In consumption contexts, the existence of environmental knowledge does not always guarantee green purchase behaviour (Kempton, Boster and Hartley, 1996). Some consumers may be knowledgeable about environmental products but the motivation to buy these products may be insufficient to activate the purchase action. Moreover, in some cases, the type of environmental knowledge which is measured in research may not be suitable or relevant to the type of environmental actions under investigation. As noted by Frick, Kaiser and Wilson (2004), the failure to associate environmental knowledge with environmental behaviour is mostly due to not considering the influence of different types of knowledge required for the target behaviour. Sometimes the knowledge considered is even irrelevant. In this research, subjective environmental knowledge was measured specifically in the eco-friendly packaging topic, which is relevant to purchase intention relating to eco-friendly packaging. Hence, the possible explanation may lie in another argument by Barkmann and Bögeholz (1999) that some daily environmental actions, such as conserving water or saving electricity, can be on a habit basis, and do not necessarily require a good level of environmental knowledge. In this research, the studied behaviour was purchase behaviour in a daily consumed product. This may mean that as consumers make daily habit decisions such as buying packaged instant noodles, the knowledge about eco-friendly packaging may not be a prerequisite. This can also mean that since consumers are brand loyal as a habit, they will buy whatever their favourite brand offers in terms of packaging options. This is consistent with what was said by focus group participant 15: *"If there are plastic and paper-packaged options for the brand I want (Hao Hao), I will pick the paper packet. I'll go with my brand anyway"* (see Chapter 5). For low-involvement product categories such as packaged instant noodles, brand loyalty may thus be a discounted factor for the insignificant impact that subjective environmental knowledge has on green purchase intention in this research. Brand loyalty, however, was not examined within this research's scope and could be a topic for further research on green purchase intention.

On another note, the non-significant impact of subjective environmental knowledge on purchase intention for eco-friendly packaged instant noodles may result from the low-involvement nature displayed in purchase behaviour for a packaged food product. This assumption coincides with the findings in Salmela and Varho (2006)'s which stated that consumers need a certain amount of information about environmental impacts of different products for green purchase decision making. In practice, consumers may not be involved with packaged instant noodles at the level to require knowledge of eco-friendly packaging options. For more complex purchases, such as buying eco-friendly cars or electronic motorbikes, consumers may require a high level of related environmental knowledge. Such high involvement consumer behaviours often require more time, more effort and more information. Therefore, environmental knowledge might in all likelihood affect green purchase intention with respect to high involvement eco-friendly purchases. Future studies should focus on making a clear distinction between different levels of green purchases from low involvement, medium involvement to high involvement to examine and to compare the impacts of environmental knowledge on green purchase intention in specific product categories.

### **8.2.3 Significant Positive Impact of Environmental Involvement on Green Purchase Intention**

The data analysis found a direct positive association between environmental involvement and green purchase intention. As consumers are more involved with the environment, they would be more likely to form purchase intention apropos eco-friendly packaging. The positive impact of environmental concern and involvement as reported in this research was consistent with the finding of previous research in the field (e.g., Albayrak, Aksoy and Caber, 2013; Chen and Tung, 2014; Newton *et al.*, 2015; Han, 2015; Jaiswal and Kant, 2018; Mostafa, 2006, 2007; Khare, 2015; Paul, Modi and Patel, 2016; Prakash and Pathak, 2017; Wei *et al.*, 2017; Yadav and Pathak, 2016; Yadav and Pathak, 2017). Two recent Vietnam-based studies also show that improvement in consumers' involvement with environmental problems would promote environmentally friendly behaviours (e.g., De Koning *et al.*, 2015; Nguyen *et al.*, 2016). In this research, environmental involvement was positively associated with and produced significant impact on green purchase intention ( $\beta = 0.282$ ,  $p < 0.001$ ). This finding is also consistent with what was found in phase one: almost all focus group participants were conscious of and affectively concerned with the adverse environmental issues of packaging. Moreover, the focus group participants in this research showed green purchase intention relating to eco-friendly packaging (see Chapter 5).

The positive relationship between environmental involvement and green purchase intention further emphasised consumers' perceived negative impacts of packaging on the environment. As argued by

Haron, Paim and Yahaya (2005), no national or global environmental agenda and no governmental intervention in terms of building a sustainable consumption culture could be successful without support from the people who are also consumers. Environmental actions including green purchases could come from environmentally-conscious consumers who show high involvement with the environment, and who are highly committed to a quality environment. In this research, the surveyed consumers are likely to be concerned about the quality of the environment. This can be due to several practical and theoretical reasons, such as consumers' environmental awareness, the government's environmental legislation and global environmental involvement as explained below.

First, environmental involvement is related to consumers' affective involvement with the environment. According to Newton *et al.* (2015), environmental involvement refers to consumers' affective responses to environmental issues and it is not their rational choice of relevant behaviours that could help protect the environment. People may act on their environmental emotions, not on their rationale based on environmental knowledge. Hence, environmental involvement may not be related to a person's knowledge about the eco-friendly characteristics of products under consideration. Rather, it is more related to affective judgement of a person about the environment and environmental issues. As a result, environmental involvement shows the degree a person is concerned about environmental problems and expends personal effort and indicates the willingness to take part in environmental solutions (Paul, Modi and Patel, 2016). In this sense, environmental-involved consumers may be willing to carry out environmental activities on a daily basis like recycling, saving electricity and buying green products. For example, 33 per cent of Americans prioritise environmental protection and 46 per cent feel that citizens can take small actions to help improve the environment (GfK Roper Consulting, 2011). Likewise, 55 per cent of Europeans believe that participation in environmental protection is very important to them (European Commission, 2011). In this research, consumers in the emerging market of Vietnam demonstrated environmental involvement, similar to those in America and Europe.

Second, awareness of packaging and its adverse impacts on the environment have been recently highlighted in the Vietnamese media (Vietnam News, 2016). This consumer environmental consciousness was also manifest in phase one: most of the focus group participants expressed their concerns about negative environmental consequences of packaging disposal, particularly related to plastic packaging. Due to recognition of environmental issues, consumers are more likely to become involved with the environment and want to act accordingly.

Third, the Vietnamese government recently increased environmental taxes on plastic (Thanh, 2017), which alerted consumers to the condition of the environment being polluted by plastic waste disposal (Vietnam News, 2014). Thus, buying and using plastic may cost more in terms of money to the Vietnamese consumers, let alone the negative environmental costs. As a result, consumers may involve themselves in environmental actions to respond constructively to governmental actions related to plastic packaging reduction. Getting consumers involved in environmental actions is important as the effect of environmental involvement on green purchase intention was found to be significant within this research.

Fourth, the result of this research concerning the impact of environmental involvement on green purchase intention further confirms prior research findings on green consumption. Other studies in the green consumption field have reported findings that environmental concern and involvement directly influence green purchase intentions (e.g., Hedlund, 2011; Koenig-Lewis *et al.*, 2014; Lee, 2008; Paladino and Ng, 2013; Prakash and Pathak, 2017). Therefore, the finding that environmental involvement was a significant predictor of green purchase intention with regard to eco-friendly packaging can reveal consumer insights for social communication and for marketing activities related to eco-friendly packaging.

Since this research investigated green purchase intention regarding eco-friendly packaging in a low involvement product, it would be useful to explore the impact of environmental involvement on purchase intention with regard to eco-friendly packaging for other higher-involvement products. As food product purchases tend to be low involvement, quick decisions can be made (Hynes and Wilson, 2016). The purchase of packaged food products usually occurs in grocery shopping, which accounts for up to one-third of the environmental consequences of household consumption (Fisher *et al.*, 2013). Therefore, green purchase decisions in everyday consumer behaviours offer a good opportunity to help reduce negative environmental consequences of consumption activities by substituting higher-impact products with products which are environmentally friendlier (Moser, 2015), such as eco-friendly packaged instant noodles as studied in this research.

#### **8.2.4 Significant Positive Impact of Environmental Self-identity on Green Purchase Intention**

The research finding shows a direct significant impact of environmental self-identity on green purchase intention. This finding repeats Van der Werff, Steg and Keizer (2013)'s and Carfora *et al.* (2017)'s results that environmental self-identity drives environmental intentions and behaviours. Moreover, it is similar to a recent study by Adnan, Ahmad and Khan (2017) who found an

association between self-identity and green buying among young Indian consumers. Several other studies in the green consumption literature are also supportive of this research result. For instance, Robinson and Smith (2002) found that self-identity was significantly related to the intention to purchase sustainably produced foods. Ozcaglar-Toulouse, Shiu and Shaw (2006) also indicated a similar relation between self-identity and purchase intention for fair trade products. Environmental self-identity was reported to motivate individuals to buy organic products (Johe and Bhullar, 2016). Likewise, environmental self-identity drives intention to buy electrical cars as green alternatives of personal transport (Barbarossa, De Pelsmacker and Moons, 2017). This research finding, therefore, coincides with prior research on green consumption.

The analysis in phase two demonstrated that compared to other independent variables in the proposed model, environmental self-identity had the most significant impact on green purchase intention for instant noodles in eco-friendly packaging ( $\beta = 0.283$ ,  $p < 0.001$ ). The present finding is evidence of the impact of environmental self-identity displayed in a specific low-involvement type of consumer decision making, relating to daily consumption activities. While packaging and packaging disposal are posing massive threats to the quality of the environment in emerging countries such as Vietnam, environmental self-identity could be enhanced to promote the consumption of products packaged environmentally, even for a low-involvement product such as packaged instant noodles.

Some explanations can be offered for the significant effect of environmental self-identity on green purchase intention. First, one's environmental self-identity (as an environmentally conscious person) motivates related behaviour (environmentally conscious consumption) because engaging in that behaviour validates a person's role in being a green consumer (Fielding, McDonald and Louis, 2008). Second, when consumers consider themselves environmentally conscious, to act accordingly to project their social images is a matter of social value (Khan and Mohsin, 2017). As a result, once consumers perceive they are environmentally friendly, they may display behaviours to suit their green self-identities and make themselves feel good (Venhoeven, Bolderdijk and Steg, 2016). In this research, many focus group participants in phase one were reported to describe themselves as environmentally friendly (see Chapter 5). In phase two, the survey participants were asked about their purchase intention for eco-friendly packaged products as a private sphere of consumer behaviour. Those who expressed environmental self-identities were reported to be more likely to buy eco-friendly packaged instant noodles. In this way, the current result in the emerging market of Vietnam confirms the importance of an individual's environmental self-identity in a private sphere

of consumer behaviour, which is evidenced through the examination of green purchase intention for eco-friendly packaged instant noodles in the scope of this research.

The significant role of environmental self-identity in green purchase intention indicates that the intention-behaviour gap may be explained through the process of self-identification. Once consumers project their self-identities as environmentally conscious persons, they are more likely to make green purchases, including daily purchases such as buying a packaged food product. This research, therefore, extends confirmation of the role of environmental self-identity in a private sphere of low-involvement consumer behaviour, whereby offering practical implications for packaged food manufacturers wishing to engage in eco-friendly packaging practices.

### **8.2.5 Non-significant Impact of Perceived Time Pressure on Green Purchase Intention and Shopping Effort**

One of the factors identified from the literature review and validated in phase one was perceived time pressure, which was included in the research model for further investigations in phase two of the research. Although there were several preceding studies which examined green purchase intention, no studies were reported to investigate the impacts of perceived time pressure. In this research, perceived time pressure was postulated to be negatively related to green purchase intention and willingness to pay for instant noodles in eco-friendly packaging.

There were two findings from this research related to these predictions about perceived time pressure. First, contrary to the hypothesis (H7), this research did not find a significant negative association between perceived time pressure and green purchase intention. The finding is that perceived time pressure had a weak negative effect on green purchase intention ( $\beta = -0.026$ ,  $p > 0.05$ ). Therefore, H7 “*Perceived time pressure is negatively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging*” was not supported. This finding is not consistent with Tanner and Kast (2003)’s study that perceived time barriers restrained consumers’ motivation to buy green products. In an eco-labelled product study, Loebnitz, Loose and Grunert (2015) partially confirmed the impact of time pressure on consumers’ purchases, reporting that consumers under time pressure showed lower price sensitiveness. In contrast with these two above-mentioned studies, Lysonski and Durvasula (2013) found an absence of significance for perceived time pressure to be a predictor for different consumer decision making styles. In sum, prior studies have produced inconsistent findings relating to perceived time pressure. This research’s finding is more in tune with Lysonski and Durvasula (2013). The distinction is that

this research examined green purchase intention, whereas Lynsonski and Durvasula (2013) studied consumer decision making styles.

The implication of the insignificant effect of perceived time pressure on green purchase intention is important in this research context. Whereas Loebnitz, Loose and Grunert (2015) and Tanner and Kast (2003) confirmed the impact of time pressure on consumers' green purchase behaviour, this research did not confirm the hypothesised effect of time pressure on Vietnamese consumers' green purchase intention for eco-friendly packaging. This suggests that relationships that have been supported in other contexts do not hold in the specific Vietnamese context. As consumers' low involvement purchases involve limited information search (Coşkun, Vocino and Polonsky, 2017), the low involvement context could potentially explain the inconsistencies in research findings relating to the impact of time pressure on consumers' green purchase behaviour.

In this research, all items of perceived time pressure had a reported low mean below 4 (see Appendix 7). In the Vietnamese context, this may mean that many consumers do not have a high level of perceived time pressure in grocery shopping. It can also indicate that, in general, Vietnamese consumers feel they have sufficient time for grocery shopping and they do not feel time pressured in grocery shopping. Hence, perceived time pressure may not be an obstacle to buying eco-friendly packaged instant noodles.

Second, the research results demonstrated that perceived time pressure had a significant positive relationship with shopping effort but not a negative relationship as hypothesised ( $\beta = 0.155$ ,  $p < 0.05$ ) (H11 "*Perceived time pressure is negatively related to shopping effort for instant noodles in eco-friendly packaging*" was rejected). This finding can be explained using former research results. Given the increasing amount of market information and product ranges available to consumers as well as time constraints, consumers often expend buying effort under time pressure (Suri and Monroe, 2003). Consumers may not have sufficient time to process the full array of product cues, such as brands, prices, quality levels and packaging materials. As food buying decisions under time pressure can be attributed to unconscious information processing (Grunert, 2006), consumers likely make choices using heuristics (Hamlin, 2010) or return to purchase habits. Moreover, when investigating time pressure as a determinant of consumers' engagement in habitual purchase behaviour, Biel, Dahlstrand and Grankvist (2005) found that consumers were significantly more likely to re-engage in previous behaviours. For instance, consumers with experiences buying eco-labelled products are probably inclined to repurchase similar products, whereas consumers who usually refrain from buying eco-labelled products will adhere to this habit. Since buying packaged

instant noodles is classified as a habitual decision making style, it can be understood that consumers may unconsciously make quick decisions without feeling time pressure. This may mean that marketers of well-known brands have more advantages offering eco-friendly packaging alternatives than marketers of less well-known brands, because consumers unconsciously choose familiar brands in grocery shopping.

In sum, perceived time pressure was not found to produce any negative impacts on either green purchase intention or shopping effort for eco-friendly packaged instant noodles among Vietnamese consumers. In other words, perceived time pressure did not influence surveyed Vietnamese consumers in low-involvement green product purchases, particularly for a packaged food product such as packaged instant noodles with regard to eco-friendly packaging.

### **8.2.6 Non-significant Impact of Perceived Availability of Alternatives on Green Purchase Intention**

In this research, perceived availability of alternatives was not reported to have a significant effect on green purchase intention with regard to eco-friendly packaging ( $\beta = 0.079$ ,  $p > 0.05$ ) (H6 “*Increased perceived availability of alternatives is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging*” was not supported). This result is contrary to what was announced by Andrews (2016) and Ginsberg and Bloom (2004) that low availability of green products negatively affects green purchase behaviour. Likewise, Vermeir and Verbeke (2008) reported that perceived availability contributed to the explanation of the variance in purchase intention for sustainable dairy products. An extant qualitative study by Young *et al.* (2010) also found that consumers perceived availability of green technology products as one of the key factors that is related to their green technology product purchase behaviours. The result of this PhD research, however, repeats the finding of Zhen and Mansori (2012) who found that availability of alternatives was not a strong factor impacting purchase intention. Likewise, limited availability was not reported to have an important effect in consumer intention to buy organic food in Thailand (Nuttavuthisit and Thøgersen, 2015). This research is the first attempt in an emerging market to explore the association between green purchase intention and perceived availability of a specific food product respecting eco-friendly packaging (eco-friendly packaged instant noodles). The distinction is that the prior mentioned studies examined availability of organic food, sustainable dairy products, generic green products or green technology products. Hence, there are no similar findings related to similar green behaviours in relation to eco-friendly packaging to compare with this research.

The following arguments can help explain the non-significant impact of perceived availability of eco-friendly packaging alternatives in the market. First, the supply of eco-friendly packaging options for packaged instant noodles of the leading brands (Hao Hao, Gau Do, Omachi) is not abundant in Vietnam (see Chapter 1, Chapter 5). Commonly used packaging for instant noodles for the leading brands such as Hao Hao and Gau Do is plastic bag type. The focus group participants in phase one also agreed that most instant noodles of the leading brands in Vietnam were packaged in plastic bags (see Chapter 5). They expressed opinions that the supply of eco-friendly packaged instant noodles in the market was not as abundant as it should be (see Chapter 5). The survey participants in phase two also appeared to perceive that availability of eco-friendly packaged instant noodles in the market was far less than they expected.

Second, green purchase behaviour ought to be supported by necessary infrastructure, and in the case of eco-friendly packaged instant noodles, eco-friendly packaged options must be made more abundantly available in the market. However, convenience and habit primarily influence everyday consumption (Vermeir and Verbeke, 2006). Because consumers make instant noodle purchases as a habit, brand loyalty could be one factor hindering the process of decision making relating to eco-packaging. The evidence of this intervention could be traced back from phase one of this research. In the focus group interviews of phase one, many participants reported having bought well-known brands of instant noodles, as indicated by focus group participant 15: *“If there are plastic and paper-packaged options for the brand I want (Hao Hao), I will pick the paper packet. I’ll go with my favourite brand anyway.”*

As the preconditions for the purchase of eco-friendly packaged instant noodles seldom exist in Vietnam due to limited availability, this can be assumed as the main cause for the weak relationship between perceived availability of alternatives and green purchase intention. Further research could be done to revisit the market where availability of eco-friendly packaging options is readily abundant to confirm or disconfirm this research result.

### **8.2.7 Non-significant Impact of Perceived Descriptive Norms on Green Purchase Intention**

Descriptive norms were not demonstrated to have a significant relationship with green purchase intention for instant noodles in eco-friendly packaging in this research ( $\beta = 0.064$ ,  $p > 0.05$ ). This result was inconsistent with the results of a cross-country analysis by Onwezen, Bartels and Antonides (2014) which showed the positive influence of descriptive norms on consumers’

environmental intentions in countries representing individualistic and collectivist cultures (Australia, Canada, Germany, the Netherlands, the USA vs. Malaysia and Singapore). Nevertheless, the finding of non-significant effects of descriptive norms in this research is supportive of Ho, Liao and Rosenthal (2015)'s reporting that descriptive norms were not associated with green purchase intention. Raska, Nichols and Shaw (2015), who investigated descriptive norm cues in green supermarket advertising, also found that descriptive norm cues failed to increase green purchase intention, regardless of what type of green products were advertised.

Some possible explanations for the weak relationship between perceived descriptive norms and green purchase intention regarding eco-friendly packaging in this research can be offered as follows. Since green purchase behaviours are private-sphere consumer behaviours, people are often limited in their opportunities to directly observe how other people engage in green buying (Ho, Liao and Rosenthal, 2015). As a consequence, people's observations of others making environmentally friendly purchases may be indirect, primarily from mass media or from word-of-mouth communication. As indicated in this research's results, observation scores for immediate family members were higher than for neighbours and city residents (see Appendix 7). Because observation of others is the basis of a descriptive norm, and because consumers showed limited observations of others in this research, it may imply that communication about descriptive norms might be needed to produce some stronger effects on green purchase intention. There have been several studies supporting the use of descriptive norms in marketing communication for the change towards environmental behaviour (Bissing-Olson, Fielding and Iyer, 2016; Fornara *et al.*, 2011; Goldsmith and Clark, 2012; Kormos, Gifford and Brown, 2014; Lapinski *et al.*, 2017; Nigbur, Lyons and Uzzell, 2010; Reese, Loew and Steffgen, 2014; Richetin *et al.*, 2016). Therefore, although descriptive norms were not reported to produce a significant impact on green purchase intention, they could potentially produce positive effects through the use of mass communication and social media.

In sum, this research shows that descriptive norms through direct observations may not play significant roles in the private sphere consumer behaviour such as buying packaged instant noodles. The discussion on prior research implies that with the amplification of social media, descriptive norms may exert some influences through the use of group influences in communication that are relevant for the behaviour under investigation. This would be a side note for this research to consider when replicating investigations for further confirmation or disconfirmation of the relationship between perceived descriptive norms and green purchase intention.

### **8.3 DIRECT IMPACTS OF GREEN PURCHASE INTENTION ON WILLINGNESS TO PAY AND SHOPPING EFFORT**

No studies in the green consumption literature have reported the direct impacts of green purchase intention on both willingness to pay and shopping effort. This research's phase one reported consumer insights for the potential relationships of green purchase intention with willingness to pay as well as with shopping effort. Hence, this research extended the direction of the MAO approach by theorising that green purchase intention directly affects both willingness to pay and shopping effort for eco-friendly packaged instant noodles. These two hypotheses were quantitatively tested in phase two. Partly similar to this research, a study on Indian consumers by Yadav and Pathak (2016) examined green purchase intention construct of which the measurements items referred to willingness and effort to make green purchases. This research extended the findings in Yadav and Pathak (2016)'s study with regard to green purchase intention as outlined below:

First, the similarity between this research and Yadav and Pathak (2016) is that the construct of green purchase intention was assessed at a first-order with three items. Yadav and Pathak (2016) adopted green purchase intention measures developed by Kim, Njite and Hancer (2013) with three items: (1) "I will purchase green products for personal use", (2) "I am willing to purchase green products for personal use", and (3) "I will make an effort to purchase green products". Accordingly, the three measurement items of green purchase intention construct in Yadav and Pathak (2016) referred to the possibility (I will), the willingness (I am willing) and the effort (I will make an effort). The distinction of this PhD research is that extended research effort was made to measure green purchase intention, willingness to pay and shopping effort as three distinct constructs with three measurement items each. The use of distinct multi-item constructs allowed this research to explore relationships of green purchase intention with willingness to pay and with shopping effort, which could help mitigate the intention-behaviour gap in self-reported behaviour research.

Second, Yadav and Pathak (2016) did not examine willingness to pay and shopping effort for green products, unlike this research. In this sense, this research extended the findings on green purchase intention, reflecting in the discovered positive effects of green purchase intention on both willingness to pay and shopping effort for a food product in eco-friendly packaging. The relationship of green purchase intention on willingness to pay was reported as a significantly positive one ( $\beta = 0.677$ ,  $p < 0.001$ ). Likewise, the impact of green purchase intention on shopping effort was reported to be positively significant ( $\beta = 0.638$ ,  $p < 0.001$ ).

This research shows important findings about green purchase intention in the context of Vietnam: green purchase intention can lead to willingness to pay and shopping effort for instant noodles in eco-friendly packaging. Once consumers have an intention, they are more likely to pay and expend effort buying. As demonstrated in the findings of phase one, several focus group participants did express willingness to pay and to shop for packaged instant noodles with regard to eco-friendly packaging (see Chapter 5). The results in phase two also confirmed the hypotheses relating to willingness to pay and shopping effort. Since there may be a gap between intention and behaviour, practitioners and researchers can use the validated relationships found for green purchase intention, willingness to pay and shopping effort in this research to assess and address the intention-behaviour gap further.

This research is the first in the green consumption literature to report that green purchase intention will likely lead to willingness to pay and shopping effort related to eco-friendly packaging. If consumers form an intention to buy eco-friendly packaged instant noodles, they are likely to be willing to expend more effort and money to purchase the eco-friendly packaged alternatives. Several prior studies, such as Khan and Kirmani (2015), Mahapatra (2013), Prakash and Pathak (2017) and Triveli, Patel and Savalia (2015), have also examined willingness to pay in emerging markets. Nevertheless, this research is the first close look at the measurement of green purchase intention's impacts on willingness to pay and shopping effort for a food product in eco-friendly packaging.

The findings of significant positive impacts of green purchase intention on willingness to pay and shopping effort may produce positive news for packaged food manufacturers who are keen on introducing eco-friendly packaged alternatives into the market. Consumers who show willingness to pay and expend more effort to find eco-friendly packaging in the market may thus be more likely to turn intentions into actual purchase behaviours.

#### **8.4 INDIRECT IMPACTS OF ENVIRONMENTAL INVOLVEMENT ON WILLINGNESS TO PAY AND SHOPPING EFFORT**

The research results show that environmental involvement has indirect impacts on willingness to pay and shopping effort through behavioural purchase intention (see Chapter 7). This implies that if a consumer is actively involved in environmental activities, he or she is apt to buy eco-friendly packaged instant noodles and thus will be ready to spend money and effort shopping for eco-friendly packaging.

Few studies have addressed the indirect effect of environmental involvement on willingness to pay. One rare example in the green consumption literature is Thieme *et al.* (2015) who reported the association between environmental involvement and willingness to pay for green products. Their finding is that environmental involvement indirectly affects sustainable behaviours through willingness to pay (i.e., environmental involvement → willingness to pay → sustainable behaviours). In contrast, this research demonstrates that environmental involvement indirectly affects willingness to pay through green purchase intention (i.e., environmental involvement → green purchase intention → willingness to pay). The additional distinction between the two studies is that while Thieme *et al.* (2015) examined general sustainable behaviours, this research was focused specifically on green purchase intention displayed for a food product (instant noodles) with regard to eco-friendly packaging.

With regard to the indirect effect of environmental involvement on shopping effort for eco-friendly packaging, this research is the first that reports this indirect relationship. No other studies in the green consumption literature have examined shopping effort for green products in association with environmental involvement. Therefore, there are no data to compare with this research.

There are some possible theoretical explanations for the indirect relationship between environmental involvement and shopping effort for eco-friendly packaging in this research. Consumers may purchase products based on the extent to which they are concerned about the purchased products' environmental consequences (Barbarossa and de Pelsmacker, 2016; Follows and Jobber, 2000). Therefore, consumers who are more environmentally involved may place more values on eco-friendly product attributes and want to buy the products having these attributes. Furthermore, when consumers perceive eco-friendly product attributes as more important, they will show more visual attention and time to the eco-friendly attributes they place more values on (Van Loo *et al.*, 2015). Hence, consumers may spend more effort to buy the product having the eco-friendly attributes they desire. In this research, the eco-friendly product attribute was eco-friendly packaging of the instant noodle product. Environmentally involved consumers thus are more likely to demonstrate purchase intention towards eco-friendly packaged instant noodles and consequently spend more shopping effort.

The indirect effect of environmental involvement on shopping effort, as found in this research, indicates an important implication: consumers do make shopping efforts to buy a green food product (such as an eco-friendly packaged instant noodle product) if their environmental

involvement is strong enough to activate their purchase intention. This signifies that environmentally involved people more likely buy eco-friendly packaged instant noodles in their environmental shopping efforts.

## **8.5 INDIRECT IMPACTS OF ENVIRONMENTAL SELF-IDENTITY ON WILLINGNESS TO PAY AND SHOPPING EFFORT**

In terms of indirect effects of environmental self-identity on willingness to pay and shopping effort, this is the first research in the green consumption field of emerging markets to find such associations. Although no research questions or research hypotheses were formed to capture these indirect effects within the research scope, this finding offers some insights about how environmental self-identity, through behavioural intention, can lead a consumer to be more ready to pay and spend effort on inexpensive green products such as eco-friendly packaged instant noodles.

First, the results indicate that environmental self-identity indirectly affects willingness to pay through behavioural intention (i.e., environmental self-identity → green purchase intention → willingness to pay) (see Chapter 7). This means that consumers with environmental self-identity are more inclined to buy eco-friendly packaged instant noodles. As a result, they will be more willing to pay for eco-friendly packaged versions of instant noodles. One similar study on Indian consumers by Khare (2015) also reports the positive impact of green self-identity on general green purchase behaviour. The concept of environmental self-identity in this research is similar to the concept of green self-identity in Khare (2015)'s study. However, the distinctive characteristic is that this research examined environmental self-identity and its direct impact on specific purchase intention relating to a packaged food product. In addition, this research discovered the indirect impact of environmental self-identity on willingness to pay related to a food product in eco-friendly packaging while Khare (2015) did not examine the effects of green self-identity on willingness to pay for green products. Another study by Namkung and Jang (2017) in the US green restaurant market also found the positive impact of self-perception on willingness to pay. The difference is that Namkung and Jang examined self-perception of health consciousness whereas this research was focused on environmental self-identity related to eco-friendly purchase activities. There are no other similar studies in the green consumption literature that have reported the indirect impact of environmental self-identity on willingness to pay, and hence, there are no similar findings to compare with this finding of the current research.

Second, the research results indicated that environmental self-identity is indirectly positively related to willingness to pay through behavioural intention (i.e., environmental self-identity → green purchase intention → shopping effort). There are hardly any prior studies in the green consumption literature that examined this indirect relationship. A few examples of studies that mentioned about shopping effort are Biswas *et al.* (2000) and Konuk, Rahman and Salo (2015). However, Biswas *et al.* (2000) examined recycling shopping behaviour, i.e., the behaviour to shop for recycled products, but not shopping effort expended for eco-friendly packaging like this research. Furthermore, Konuk, Rahman and Salo (2015) did not examine shopping effort separately because they only included one item about effort (I will make efforts to buy this white goods brand because it is environmentally friendly) in the 3-item construct to measure green purchase intention. Another recent study by Lin and Huang (2015) investigated choice behaviour regarding green products related to paper and plastic products made from recycled materials and eco-friendly household cleansing chemicals. These above-mentioned authors did not really examined shopping effort in the sense whether or not consumers expend effort to look for green products. In addition, all above-cited studies did not specifically examined shopping effort regarding a food product in eco-friendly packaging like this research. Therefore, this research is the first investigation in the green consumption literature that looks closely at a specific green purchase behaviour related to eco-friendly packaging.

As there were no questions or hypotheses formed in this research to capture the indirect effect of environmental self-identity on willingness to pay and shopping effort, this could be considered as a new discovery. This research did not examine the mediating role of purchase intention on the indirect relationships between environmental self-identity and the other dependent variables (willingness to pay and shopping effort) and hence this is a research limitation (see Chapter 9).

## **8.6 SUMMARY OF THE MAIN RESEARCH FINDINGS**

This research provided a comprehensive overview of the relationships between a number of internal psychological and external contextual social factors and green purchase intention for packaged instant noodles with regard to eco-friendly packaging. The comprehensive analysis of antecedents of green purchase intention and its relationships with willingness to pay and shopping effort is unique in green consumption research, as most other empirical studies in the same field usually focus on antecedents of green purchase intention. The discussion of the research results in this chapter has highlighted the factors which could produce the significant impacts on green purchase intention within the research context.

This research found that environmental involvement produced a significant effect on subjective environmental knowledge; however, subjective environmental knowledge insignificant affects green purchase intention. To elaborate, although H1 (*“Environmental involvement is positively related to subjective environmental knowledge concerning eco-friendly packaging”*) proved acceptable, the statistical analysis shows the weak effect of subjective environmental knowledge on green purchase intention. Given the findings of prior studies and of this research, there is a critical concern that consumers who claimed perceived environmental knowledge of eco-friendly packaging may not translate their knowledge into green purchase intention. In other words, the impact of subjective environmental knowledge on green purchase intention for eco-friendly packaged instant noodles is not as significant as that of environmental involvement.

Environmental involvement was reported to positively and directly influence green purchase intention. To put it theoretically, H2 (*“Environmental involvement is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging”*) is accepted. As environmental involvement is associated with a consumer’s affective responses to the environment (Lee, 2008), it captures the degree to which a consumer is affectively engaged with green consumption behaviour. Moreover, environmental involvement shows an individual’s level of commitment to environmental issues (Schuhwerk and Lefkoff-Hagius, 1995). In other words, environmentally involved people not only affectively concerned but also do environmental actions to protect the environment. Hence, affective engagement and active commitment with the environment will be more likely to produce significant effects on green purchase intention than subjective knowledge of eco-friendly packaging, as shown in this research. In this way, environmental involvement was reported as a significant predictor of green purchase intention.

Environmental self-identity was found to produce a significant impact on green purchase intention. This enabled H3 (*“Environmental self-identity is positively related to green purchase intention for packaged instant noodles with regard to eco-friendly packaging”*) to be taken as an important motive to determine green purchase intention. According to the results of this research, consumers who express strong personal environmental self-identities show stronger tendencies to buy eco-friendly packaged instant noodles. On the one hand, consumers are affectively associated with the environment and consider changing their consumption actions to be more environment friendly, i.e., environmental involvement. On the other hand, they perceive themselves to be an essential part of the ecology or the environment, i.e., environmental self-identity (Bonini and Oppenheim, 2008; Kanchanapibul *et al.*, 2014). This sensibility of environmental self-identity demonstrates high

involvement with the environment and thus leads to behavioural responses in green purchase intention for eco-friendly packaged instant noodles within this research context.

In relation to green purchase intention and the impacts on willingness to pay and shopping effort, the research findings confirm significant relationships. The statistical analysis shows that green purchase intention leads to willingness to pay and shopping effort. Therefore, H9 (“*Green purchase intention is positively related to willingness to pay for instant noodles in eco-friendly packaging*”) and H10 (“*Green purchase intention is positively related to shopping effort for instant noodles in eco-friendly packaging*”) are well supported. Furthermore, the results indicate that environmental self-identity and environmental involvement are indirectly associated with willingness to pay and shopping effort. Together with the findings about significant influences of environmental self-identity and environmental involvement on green purchase intention, the findings about the indirect effects offer theoretical implications for mitigating the intention-behaviour gap. Vietnamese consumers who perceive environmental self-identity and are actively involved with the environment will be more likely to form green purchase intention and as a result to spend money and effort for eco-friendly packaged instant noodles.

Drawing the results of this research all together for theoretical and practical implications is an important part of this thesis, which is discussed in the next chapter (Chapter 9). Chapter 9 presents major research findings and contributions, research limitations, future research directions and concluding remarks of this PhD thesis.

## **CHAPTER 9 – KEY RESEARCH FINDINGS, CONTRIBUTIONS, LIMITATIONS, FUTURE RESEARCH DIRECTIONS AND CONCLUSIONS**

### **9.1 INTRODUCTION**

This chapter presents an overview of how the research questions were addressed and also the key research findings. In addition, the practical and theoretical contributions of this research are discussed. The chapter also acknowledges research limitations and recommends future research directions. The chapter flows as follows. First, Section 9.2 discusses how the research questions were addressed, and outlines the key findings of this PhD research. Next, the key research contributions in terms of theory and practice are given in Section 9.3. Section 9.4 outlines research limitations and future research directions. Section 9.5 provides the concluding remarks of this PhD thesis.

### **9.2 REVISITED RESEARCH QUESTIONS AND SUMMARY OF THE MAIN FINDINGS**

Chapter 3 showed that recent research on green consumption were commonly based on existing theories, such as the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB) and the Value-Belief-Norm model (VBN), to understand antecedents of green purchase intention. However, these studies were found to have some limitations relating to the lack of examination of external contextual social factors. A holistic approach is needed to reach a more discriminating understanding of green purchase intention (see Chapter 3). Moreover, not many studies on green consumption have examined specific product categories, especially low-involvement consumer products like packaged foods. Little research has been done in the emerging market of Vietnam to understand green purchase intention for a packaged food product with regard to eco-friendly packaging (see Chapter 1). Thus, this PhD thesis aimed to explore whether and how internal psychological and external contextual social factors influence green purchase intention for a packaged food product concerning eco-friendly packaging. This research was conducted by means of an integrative process underpinned by the Motivation-Ability-Opportunity (MAO) approach and social norms theory. This research asked the main research question as follows:

- *How do internal psychological and external contextual social factors influence consumers' green purchase intention for a packaged food product (packaged instant noodles) with regard to eco-friendly packaging?*

To answer this question, the PhD researcher conducted a literature review in the field of green consumption to identify potential antecedents of green purchase intention in the MAO direction. Also, a preliminary conceptual model was developed with twelve original research hypotheses (see Chapter 3). This research used a sequential two-phase mixed methods design (see Chapter 4). Accordingly, qualitative research was conducted in phase one, using focus group interviews to validate and to determine the antecedent and dependent factors which could be included in the refined research model with updated research hypotheses. In addition, a question about consumer perceptions of eco-friendly packaging was explored in phase one before conducting quantitative research in phase two. Six focus group interviews in phase one were conducted in Ho Chi Minh City and Hanoi of Vietnam, with the purpose to examine the first research question and partly contribute to the answer for the second research question, as outlined below:

- *RQ1: What do consumers perceive to be eco-friendly packaging?*
- *RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

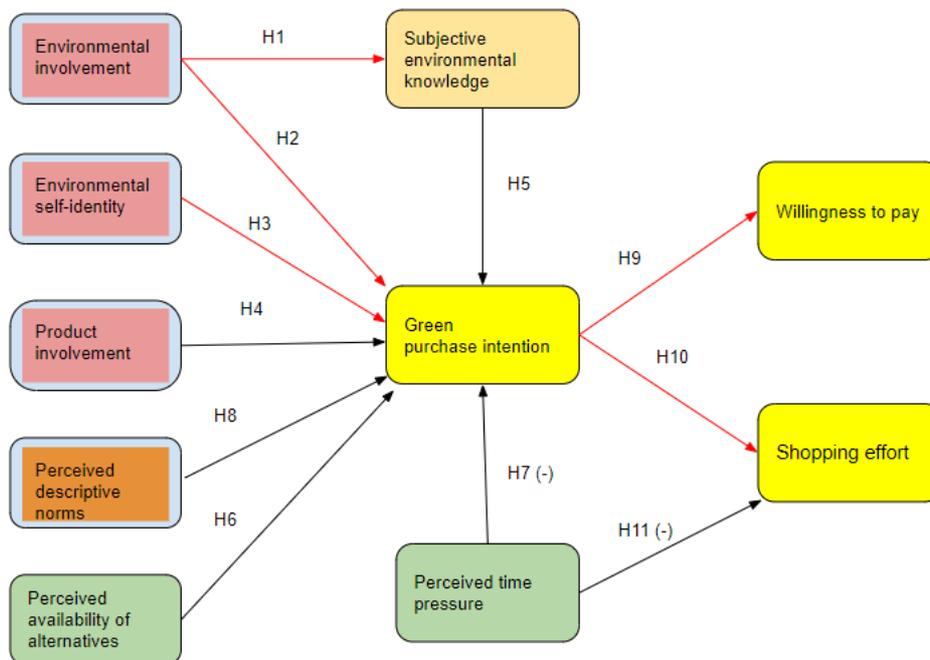
The research model, which was redeveloped in Chapter 5, incorporated prior literature and consumer insights from qualitative research of phase one. Research hypotheses were updated to reflect phase one's findings. There were eleven hypotheses after phase one. Hence, research hypotheses were formulated about the relationships between seven antecedent variables (internal and external) and green purchase intention. In phase two, the antecedent factors were quantitatively examined in association with green purchase intention for packaged instant noodles in eco-friendly packaging to answer the second and third questions.

- *RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*
- *RQ3: What factor has the most significant influence on green purchase intention for packaged instant noodles with regard to eco-friendly packaging?*

The research also aimed to explore the relationships of green purchase intention with willingness to pay and shopping effort, which no existing theories have theorised. Thus, the fourth and the fifth research questions were asked as follows:

- *RQ4: How does green purchase intention affect willingness to pay for instant noodles in eco-friendly packaging?*
- *RQ5: How does green purchase intention affect shopping effort for instant noodles in eco-friendly packaging?*

To examine the five research questions, qualitative and quantitative research were conducted in two phases of this research (see Chapter 4). The qualitative research in phase one identified twelve dimensions of eco-friendly packaging from consumer perspectives, which were grouped in three key themes – packaging materials, manufacturing technology and market appeal. In addition, phase one validated internal and external antecedent factors identified from prior research to include in the research model and to reformulate research hypotheses. Accordingly, phase one identified seven antecedent factors, including (1) environmental involvement, (2) environmental self-identity, (3) product involvement, (4) subjective environmental knowledge, (5) perceived time pressure, (6) perceived availability of alternatives, and (7) perceived descriptive norms. These factors were hypothesised to be related to green purchase intention. Phase one also proposed that green purchase intention might lead to a higher level of willingness to pay and shopping effort for instant noodles in eco-friendly packaging. Figure 9-1 is a visual overview of the revisited research model with five red arrows showing significant relationships between the selected variables. Overall, the research model explained 28.1 per cent of the variance of green purchase intention, 45.8 per cent of willingness to pay and 43.4 per cent of shopping effort for eco-friendly packaging. Five out of eleven research hypotheses were accepted at 97.5 per cent confidence interval.



**Figure 9-1: Research Model revisited**

The following sections revisit the questions addressed in this research. In addition, the key findings were summarised, based on prior studies in the same field and further insights gained from this PhD thesis.

- ***RQ1: What do consumers perceive to be eco-friendly packaging?***

This research reported the findings about consumer expectations of eco-friendly packaging, which led to a consumer definition of eco-friendly packaging in the context of Vietnam. Overall, the findings showed that consumers were aware of eco-friendly packaging. Consumers defined eco-friendly packaging in three key dimensions - packaging materials, manufacturing technology and market appeal. First, consumers defined eco-friendly packaging based on types of packaging materials. In their terms, packaging made from paper-based and biodegradable materials was more eco-friendly than packaging made from conventional plastics. Second, eco-friendly packaging should emerge from an eco-friendly manufacturing process with eco-friendly technology that does not pollute the environment. Third, eco-friendly packaging should be appealing in the market in order to be well accepted. Major consumer expectations in terms of market appeal of eco-friendly packaging should be satisfied, such as attractive graphic design and reasonable price. The three dimensions of eco-friendly packaging arose from consumer perceptions and expectations, which provided useful input to manufacturers who wish to gain competitive advantages for their packaged food products.

The other research finding was that consumers showed awareness of the negative environmental impacts of plastic packaging disposal. This discernment led them to turn to other types of packaging materials for more eco-friendly packaging solutions. Although consumers showed diverse perceptions of eco-friendly packaging, their understanding of eco-friendly packaging was limited and mainly related to disposal issues (such as biodegradability, recyclability, reusability), and market appeal (such as market performance in aesthetic design and price).

- ***RQ2: What internal psychological and external contextual social factors influence green purchase intention for packaged instant noodles with regard to eco-friendly packaging?***

The second research question was related to antecedent factors which could affect green purchase intention for instant noodles in eco-friendly packaging. Chapter 2 showed that previous research has attempted to explore a number of antecedents (psychological factors and social influences) and their impacts on purchase intention to buy green products. However, few studies developed an

integrative model using a holistic approach to predict green purchase intention. Instead, several green consumption studies tended to add additional variables into commonly used behavioural models such as the TRA and the TPB (see Chapter 2). This PhD thesis is the first to highlight the need to explore internal and external factors in an integrative model that would help identify significant influencing factors of green purchase intention for a specific everyday food product. Given the emerging market context of Vietnam where increasing consumption patterns require more convenience, packaged instant noodles were chosen for the purpose of this research. Even though Chapter 2 pointed out that many prior studies have emphasised the intention-behaviour gap in green consumption, this research is the first to explore potential influences of green purchase intention on willingness to pay and shopping effort for a food product (instant noodles) in eco-friendly packaging in the Vietnamese market context. In this way, it contributes new knowledge to mitigate the intention-behaviour gap in self-reported green purchase intention studies.

In this research, qualitative research was conducted in phase one to explore eight antecedents identified from the literature review, namely, environmental involvement, environmental self-identity, product involvement, subjective environmental knowledge, perceived financial constraints, perceived time pressure, perceived availability of alternatives, and perceived descriptive norms. The qualitative phase validated the inclusion of seven antecedents except for perceived financial constraints. Findings from the qualitative phase helped to revise the research model, to update research hypotheses and to design the online survey instrument for the quantitative measurement of the studied variables in phase two. The structural model assessment and the testing of research hypotheses showed that environmental self-identity and environmental involvement both have significant effects on green purchase intention whereas the other five antecedents produce insignificant impacts (see Chapter 7).

The research findings in terms of the effect that environmental involvement has on green purchase intentions corroborate prior research such as Hartmann and Apaolaza-Ibáñez (2012), Mostafa (2006), Newton *et al.* (2015) and Prakash and Pathak (2017). As shown in Chapter 6, environmental involvement was observed to produce a significant outcome ( $\beta = 0.282$ ,  $t = 3.823$ ,  $p < 0.001$ ) on green purchase intention concerning instant noodles in eco-friendly packaging. Likewise, the effect of environmental self-identity was demonstrated to be significant ( $\beta = 0.283$ ,  $t = 4.128$ ,  $p < 0.001$ ) on green purchase intention. The finding indicates that many consumers in Vietnam claimed to be involved with environmental issues and expressed environmental self-identities. This finding may provide useful insights for marketers who wish to promote their eco-friendly packaged foods. It

seems that consumers with environmental self-identities and with environmental involvement will likely buy food products (such as instant noodles) in eco-friendly packaging.

Findings of this research reveal some important aspects of green purchase intention for eco-friendly packaging. In terms of low-involvement products such as packaged food products, product involvement, perceived time pressure, and perceived availability of alternatives, perceived descriptive norms were observed to have insignificant associations with green purchase intention. Most contrary to the thesis expectations is the insignificant effect of subjective environmental knowledge, particularly subjective knowledge of eco-friendly packaging. This implies that subjective knowledge of eco-friendly packaging is not likely to increase green purchase intention when dealing with eco-friendly packaging related to a low-involvement food product. The reason may be because consumer decisions can be quickly made for low-involvement products such as packaged foods. Given this research result, subjective environmental knowledge could be further explored to explain green purchase intention for high-involvement products as these types of decision making would need deeper knowledge.

In short, this thesis highlights the significance of environmental involvement and environmental self-identity in relation to green purchase intention for packaged instant noodles in respect to eco-friendly packaging. Consumers who identify themselves as environmentally conscious and environmentally involved will be more inclined to buy instant noodles in eco-friendly packaging.

- ***RQ3: What factor has the most significant influence on green purchase intention for packaged instant noodles with regard to eco-friendly packaging?***

This research found that consumers preferred to consider themselves as environmentally conscious. This subjective evaluation of self-image was validated and confirmed in qualitative and quantitative phases of the research. The research results also show that out of the seven independent variables hypothesised to affect green purchase intention, only two factors, environmental self-identity and environmental involvement, were found to produce significant effects. Compared to environmental involvement ( $\beta = 0.282$ ,  $p < 0.001$ ), environmental self-identity was reported to have the most significant positive influence in this research ( $\beta = 0.283$ ,  $p < 0.001$ ). Accordingly, the structural model assessment and the testing of research hypotheses indicated that environmental self-identity had the strongest direct impact on green purchase intention in connection with instant noodles in eco-friendly packaging within the Vietnamese research context (see Chapter 7). This finding is similar to previous research findings that environmental self-identity influences environmental

behaviour at both generic and behaviour-specific levels (Dean *et al.*, 2012; Hwang, 2016; Nigbur, Lyons and Uzzell, 2010; Van der Werff, Steg and Keizer, 2013; Whitmarsh and O'Neil, 2010). To elaborate, this finding confirms that environmental self-identity is most positively associated with specific behaviours related to purchasing packaged instant noodles in eco-friendly packaging.

The research results indicated that many survey participants expressed their environmental self-identities in relation to green purchase intention. The more a consumer considers himself or herself as an environmentally friendly individual, the more he or she will consider buying instant noodles packaged in a more eco-friendly manner. In the emerging market of Vietnam where the people have been experiencing serious consequences of packaging disposal and littering in the environment, this research insight would be useful for social pressure groups, non-government organisations, policy makers and marketers. To motivate consumers to make greener purchases, an understanding of environmental self-identity would impact deeply on long-term social behavioural change programs. In association with this, environmental behavioural change programs could focus on enhancing environmental self-identity to promote consumers' green purchase intention. Furthermore, genuine self-identity in terms of environmental protection can increase consumers' purchase intention for eco-friendly packaging options and thus can reduce the use of conventional packaging options.

- ***RQ4: How does green purchase intention affect willingness to pay for instant noodles in eco-friendly packaging?***

Willingness to pay which describes commitment and dedication in purchasing environmentally friendly products has been identified as one important environmental behavioural aspect regarding green purchases (Barber *et al.*, 2014). The gap between intention and purchase behaviour has been reported to exist in green consumption research (Barber, Bishop and Gruen, 2014; Carrington, Neville and Whitwell, 2014; Gleim *et al.*, 2013; Kennedy *et al.*, 2009; Vermeir and Verbeke, 2006). According to Barber, Bishop and Gruen (2014), one of the most common explanations for this intention-behaviour gap is that eco-friendly products usually command a higher price. Moreover, within consumer fast-moving goods categories, it is difficult to determine how to value particular environmental attributes that are bundled into those goods (Husted *et al.*, 2014). Therefore, this thesis determined that it was important to capture behavioural data expressed in willingness to pay for a packaged food product displaying eco-friendly packaging by means of a survey.

This thesis found that green purchase intention positively influences willingness to pay for eco-friendly packaging. As shown in Chapter 7, green purchase intention produced a strong effect

( $\beta = 0.677$ ,  $p < 0.001$ ) on willingness to pay for instant noodles in eco-friendly packaging. As the effects of environmental involvement and environmental self-identity were demonstrated to be significant on green purchase intention, it can be said that the influences of environmental self-identity and environmental involvement on willingness to pay could be considerable. As shown in the research results (see Chapter 7), environmental involvement and environmental self-identity have indirect effects on willingness to pay.

In the green consumption field, this thesis is one of the studies which explored the relationship between green purchase intention and willingness to pay. One recent example of research in this subject is Prakash and Pathak (2017) who also investigated consumers' purchase intention and willingness to pay for eco-friendly packaged products. Nevertheless, Prakash and Pathak (2017) did not investigate green purchase intention in a specific product category like packaged instant noodles in this research. In addition, Prakash and Pathak (2017) investigated the impact of willingness to pay on green purchase intention, unlike this research. Due to the gap between intention and actual purchase, it would be useful to highlight the significant relationship of green purchase intention on willingness to pay for a food product in eco-friendly packaging. Since the Vietnamese government implemented environmental taxes on plastic (Thanh, 2017), new technologies for producing and applying eco-friendly packaging would be needed. Knowing that consumers who expressed an intention to buy eco-friendly packaged food products would be more willing to pay for eco-friendly packaging, businesses would be more ready to engage in eco-friendly packaging agendas to ensure availability of eco-friendly packaged alternatives in the market. Thus, abundant availability of green alternatives would provide market infrastructure to help increase opportunities to turn consumers' behavioural intentions into actual green purchases.

- ***RQ5: How does green purchase intention affect shopping effort for instant noodles in eco-friendly packaging?***

Shopping effort in this thesis is consumer effort expended in searching for eco-friendly packaging options when buying packaged instant noodles. Shopping effort was observed to be positively influenced by behavioural purchase intention in this thesis ( $\beta = 0.638$ ,  $p < 0.001$ ). The structural model showed a moderate explanatory power of 43.4 per cent of the variance in shopping effort. This is the first research in the green consumption literature that looks at the association between green purchase intention and shopping effort for a packaged food product concerning eco-packaging. Hence, there are no similar studies to compare with this finding. The implication of this finding is important to manufacturers and marketers of packaged instant noodles in Vietnam: if a

Vietnamese consumer intends to buy eco-friendly packaged instant noodles, he or she will be ready to make efforts looking for eco-friendly packaged versions of the product.

The research results indicated that Vietnamese consumers are willing to spend effort in shopping for eco-friendly packaged instant noodles. As consumers stated that they preferred to buy their familiar brands (see Chapter 5), this may signify that if visibility of eco-friendly packaging for leading brands of instant noodles in Vietnam could be increased to make shopping effort easier, there would be more consumers who actively search to buy eco-friendly packaged versions. In low-involvement product categories, shopping effort spent by consumers over the decision process is low. Therefore, shopping effort for eco-friendly packaging expressed by surveyed consumers in this research would be a potential research agenda to further explore so as to profile green consumers for green marketing efforts.

### **9.3 CONTRIBUTIONS OF THE CURRENT RESEARCH**

#### **9.3.1 Theoretical Contributions**

This PhD research builds upon prior studies in the green consumption literature on the antecedents of green consumption behaviours and adds insights into the green purchasing process in a number of ways. First, this research extends prior studies in the same field in that, for the first time, it incorporates internal and external antecedents of green purchase intention into one integrative model and assesses each of these antecedents on green purchase intention. Prior research on green purchase intention and behaviour has predominantly analysed psychological variables based on the widely used TRA and TPB (see Chapter 2). Recently, researchers have recognised the limitations of the TRA and the TPB in predicting green purchase behaviour (see Chapter 2). Several attempts have often been made to improve the predictability of the TRA and the TPB by constantly adding more variables, resulting in more complex models (Shaw and Shiu, 2003). Driven by the MAO approach combined by social norms theory, this research is the first attempt that identifies antecedents (internal and external factors) which could motivate consumers' green purchase intention. The theoretical contribution is the development and examination of an integrative model of green purchase intention that embraces internal psychological and external contextual social factors which have rarely been empirically tested together. By testing these factors together, this thesis has contributed to a more precise understanding of the influential factors in relation to green purchase intention.

Second, when linking back to the MAO approach based on which the proposed research model was developed, this research discovers that in the context of a low-involvement packaged food product in Vietnam, motivation was proved to have significant influences on green purchase intention via environmental self-identity and environmental involvement. The opportunity factors (perceived availability of alternatives) as well as the ability factor (subjective environmental knowledge) did not appear to have any significant effects on green purchase intention within the current research context. To elaborate, on the one hand, perceived availability of eco-friendly packaged instant noodle alternatives was not reported to be a significant factor for green purchase intention. On the other hand, the research results showed that consumers' perceived knowledge of eco-friendly packaging does not guarantee consumers' purchase intention towards eco-friendly packaged instant noodles. Overall, the research results indicate that the Vietnamese consumers should be motivated to purchase eco-friendly instant noodles by means of environmental self-identity and environmental involvement.

Third, the finding relating to consumer motivation demonstrates that Vietnamese consumers are ready to buy eco-friendly packaged instant noodles when their environmental self-identity and environmental involvement are activated to motivate green purchase behaviour. Hence, this research improves previous theoretical knowledge relating to the green purchase intention process in an everyday consumption situation. It shows that theoretical explanations can be offered to explain what factors are most influencing in green purchase intention relating to a food product concerning eco-friendly packaging. To be specific, it indicates that consumers should identify themselves as eco-friendly people and they should be involved with the environment before they can be motivated to behave as green consumers.

Fourth, this thesis is the first research attempt to date which empirically examined green purchase intention simultaneously with willingness to pay and shopping effort. This thesis provided insights into willingness to pay and shopping effort for instant noodles in eco-friendly packaging, given the conditions of the emerging market of Vietnam. It showed that once consumers form intention strong enough to buy instant noodles packaged in an eco-friendly manner, they will be more willing to pay and expend shopping effort for eco-friendly packaging. What distinguishes this research from prior studies is the exploration of potential relationships of green purchase intention on willingness to pay for a food product in eco-friendly packaging. There have been earlier studies which examined willingness to pay in emerging markets such as Khan and Kirmani (2015), Prakash and Pathak (2017), and Triveli, Patel and Savalia (2015). However, this research is the first to emphasise the measurement of the impact of green purchase intention on willingness to pay with regard to eco-

friendly packaging. Consequently, it opens discussions on potential relationships between intention and behaviour and thereby can help mitigate the gap between intention and behaviour in green consumption.

Fifth, the additional findings of this research are related to the indirect effects of both environmental self-identity and environmental involvement on both willingness to pay and shopping effort through behavioural purchase intention. Although no research questions or hypotheses were formed within this research to reflect the indirect relationships or the mediating role of purchase intention, these findings can be considered as new discoveries in the green consumption field. For the first time, it demonstrates that in the emerging country of Vietnam, consumers with strong environmental self-identities and active environmental involvement are likely to form intentions to purchase eco-friendly packaged instant noodles. As a result of their green purchase intention, they will be willing to pay as well as spend shopping effort looking for eco-friendly packaged alternatives. Hence, the findings open a new avenue of research in relation to willingness to pay and shopping effort in green consumption in emerging markets. This is of particular interest to emerging countries like Vietnam since they are dealing with issues of packaging disposal which are pressing threats to sustainable development.

Finally, a further contribution of this thesis is in terms of consumer perceptions of eco-friendly packaging. This finding adds to the emerging literature on consumer perceptions of eco-friendly packaging, especially in the context of an emerging market. It provides an in-depth analysis of eco-friendly packaging and its key dimensions from consumer perspectives. It leads to a consumer-led definition of eco-friendly packaging in three main dimensions, namely, packaging materials, manufacturing technology and market appeal. In order that an eco-friendly package is well accepted in the market, it should satisfy not only the environmental characteristics of packaging materials and manufacturing process, but also the market appealing characteristics of eco-friendly packaging as being aesthetic and reasonably priced. As reported by Almeida *et al.* (2010), the choice of a more environmentally friendly package involves several consumer-defined aspects. The findings concerning consumer perceptions of eco-friendly packaging support Almeida *et al.* (2010)'s argument. Thus, this research contributes a practical understanding of consumer expectations for eco-friendly packaging, which would provide useful input to manufacturers and marketers of packaged food products.

### 9.3.2 Practical Contributions

The research findings add helpful explanations of significant antecedents leading to consumers' green purchase intention for eco-friendly packaged instant noodles. This research also provides practical contributions to a more accurate understanding of consumer perceptions regarding important dimensions of eco-friendly packaging. In this research, the methods (qualitative and quantitative) were seen as complementary. Since qualitative findings were used as input for quantitative research, the mixed methods contributed to the overall findings and practical implications of this research.

First, this research demonstrates that environmental self-identity and environmental involvement are significant antecedents of green purchase intention. The research also shows that green purchase intention can lead to willingness to pay and shopping effort for packaged instant noodles with regard to eco-friendly packaging. Furthermore, this research reports that environmental self-identity and environmental involvement have indirect effects on willingness to pay and shopping effort. Thus, the government can apply these findings to develop long-term strategies for developing a green consumption culture, considering the following implications:

- The costs of adverse environmental effects of packaging are not just environmental but also economic and social, causing massive damages to the quality of life. To minimise the adverse environmental consequences of packaging disposal, the government can implement social marketing campaigns to raise consumer involvement with environmental issues. The challenge for policy-makers is to find ways to address consumers' environmental self-identities whereby improving their consumption practices towards a more sustainable manner. Social marketing campaigns need to develop a clear vision to associate consumers with environmental self-identity, thereby creating and enhancing the images of green consumers who act to protect the environment for a better quality life. Instead of showcasing general messages calling for collective acts for the society and the environment in social propaganda, the government and non-profit organisations should project the positive social image of environmentally conscious and active individuals as desirable self-identities. In this way, green consumer images could be enhanced and strengthened at a social level and scope, which could activate green purchase intention and behaviour in private-sphere behaviours.

- It can also be noted that as environmental self-identity and environmental involvement were found to be significant effects on green purchase intention in the research context of Vietnam, activating environmental self-identity and environmental involvement are important to promote green purchase behaviour. Consumers are likely to voluntarily make green purchases when they are motivated to be actively involved with environmental activities as well as when they perceive themselves as eco-friendly people. In case the government fails to do so, the alternative way to facilitate behavioural change could be through regulations, which do not encourage voluntary green purchase behaviour. Therefore, to develop a green consumption culture in Vietnam, the desirable images of eco-friendly consumers as well as environmental activists should be projected on a national scale.
- The findings relating to the indirect effects of environmental self-identity and environmental involvement on willingness to pay and shopping effort for eco-friendly packaging also offer some practical implications to the government. Consumers with environmental self-identity and environmental involvement likely want to buy eco-friendly packaged instant noodles and as a result, they are more willing to pay and spend shopping effort. The government thus can provide legal infrastructure to facilitate the production of eco-friendly packaging, particularly in the packaged food market such as packaged instant noodles. Providing more eco-friendly packaged alternatives will satisfy green consumers who are willing to pay, to shop and to buy.

Second, businesses can apply environmental self-identity and environmental involvement in their marketing communication to enhance positive public images of green consumers. The message should project green consumer image as a desirable social image targeting a mass market, and not just a niche market. As consumers express a desire to act positively for the benefits of the environment, the process of green normalisation should begin by conveying messages about green product purchase behaviour by means of environmental self-identity and environmental involvement.

Third, factors relating to opportunity and ability to make green purchases were shown not to produce any direct significant effects on green purchase intention. This finding offers important implications to marketers of low-involvement products like packaged instant noodles. This may mean that green marketing effort without first activating consumer motives has limited potential to influence green choices for inexpensive consumption. As factors relating to motivation are proved

to be more important to green purchase intention, this may imply that marketers should trigger consumer motivation to buy food products in eco-friendly packaging by enhancing green consumer identities and consumer environmental involvement in marketing communication plans. The point is how to facilitate the transformation from environmental self-identity and environmental involvement into green purchase intention and behaviour. Thus, marketing messages should emphasise more on environmental self-image and environmental involvement to project the important role of green consumers in protecting the environment, thereby creating a feeling of urgency in consumers to exercise green purchase behaviours for and because of the environment.

Fourth, the indirect effects of environmental self-identity and environmental involvement on willingness to pay and shopping effort may mean that industry can leverage the motivation of green consumers to activate purchase intention which will make them pay and shop for eco-friendly packaged instant noodles. Hence, manufacturers and marketers of eco-friendly packaged instant noodles can be ascertain that if all other consumer criteria are satisfied (such as brand, price and quality), then green consumers will likely pay the premium as well as expend effort looking to buy instant noodles in eco-friendly packaging.

This PhD thesis also shows that consumers know the term eco-friendly packaging. Consumer expectations for eco-friendly packaging are mainly related to disposal issues (such as biodegradability, recyclability, reusability) and market appeal (such as attractive graphic design and reasonable price). Moreover, consumers require eco-friendly packaging to emerge from an eco-friendly manufacturing process. Based on these findings, the thesis indicates that consumer-defined aspects (packaging materials, manufacturing technology and market appeal) should be considered in the production of packaged food products similar to packaged instant noodles. That is to say, packaged food manufacturers need to satisfy consumer expectations for eco-friendly packaging to be able to gain consumer acceptance in the market. Packaging managers can use the key dimensions of eco-friendly packaging mentioned in this thesis as useful input for their packaging design strategy. Accordingly, eco-friendly packaging should be developed, taking into account not only consumer concerns for environmental impacts of packaging materials but also market appeal by means of an attractive graphic design. Furthermore, it is essential that product managers should focus on the aesthetic, healthy, and eco-friendly characteristics of packaging for product choice. Additionally, businesses need to ensure the protective performance of their packaging, and consider using more environmentally friendly technologies in packaging production.

Finally, this research was conducted in the context of Vietnam as an emerging market where the size of population is increasing with a large component of young consumers who have adopted consumption practices towards more convenience. Therefore, the research findings are applicable to other emerging markets which share similar conditions in terms of large population sizes and fast changing consumption patterns. As emerging countries are important parts of the world due to population growth and emerging consumption trends, the potential positive effects of green consumer behaviour on the environment can be far reaching, should a green consumption culture be built and enforced. The future of green consumption in emerging countries could begin with private-sphere consumer behaviours such as purchasing consumer fast-moving products with eco-friendly characteristics.

#### **9.4 LIMITATIONS OF THE RESEARCH AND FUTURE RESEARCH DIRECTIONS**

This PhD research is subject to a number of limitations relating to sampling, data, data collection methods and research scope in both qualitative and quantitative phases. First, in this research, purchase intention with regard to instant noodles in eco-friendly packaging was investigated and not actual purchase behaviour. Although intention is an important factor to predict behaviour and deserves study in its own nature, there exists a discrepancy between purchase intention and purchase behaviour (Newton *et al.*, 2015; Sheeran, 2002). Therefore, future studies using actual purchase data would be necessary to complement the key findings of this research.

Second, this research was based on the MAO approach which assumes that consumers are motivated to act towards green purchase behaviour. Being situated in the context of a low-involvement purchase, this research was limited in focusing on consumer motivation to make green choices for packaged instant noodles with respect to eco-friendly packaging. The research did not consider other motives (latent and manifest) which could trigger consumers to buy packaged instant noodles. For example, are consumer driven to buy a package of instant noodles because of convenience or are they motivated to buy a less harmful instant noodle product in terms of nutrition? This question was beyond the research scope. Further research could be directed at understanding all facets of motives that could drive consumers to make trade-offs in purchasing food products in eco-friendly packaging.

Third, product involvement in this research was defined to be the involvement with eco-friendly packaged instant noodles. The research assumed that consumers are highly involved with not only the instant noodles but also eco-friendly packaging. This limitation can be overcome in future

research where the studied product and all related product attributes are clearly identified and described to make a distinction between involvement with the product itself and involvement with eco-friendly packaging as part of the product attributes. Also, further studies could compare how consumers make trade-off decisions between different product attributes, including packaging attributes such as eco-friendly characteristics and marketing attractiveness.

Fourth, the survey question relating to perceived time pressure was developed (see Appendix 4), based on the focus group insights that consumers normally buy packaged instant noodles in grocery shopping trips. Thus, perceived time pressure in this research was only examined in the context of grocery shopping. This research assumed that perceived time pressure is constant for consumers across grocery purchasing situations. However, in some instances, consumers may be under time pressure when shopping and in others the shopping can occur in a more leisure manner. This limitation can be fixed in future research where different purchase situations are identified and investigated relating to perceived time pressure.

Fifth, the results were limited to low-involvement product categories, and it is expected that consumer scepticism could be stronger when consumers evaluate packages of high-involvement products. Future studies could replicate this research using products with a higher level of purchase involvement. This stream of research will provide product developers with useful input for eco-friendly product design (Daae and Boks, 2015). Thus, high-involvement product categories may be added to future research to further explore the effects of potential antecedents on green purchase intention.

This research was also limited to the investigations of eco-friendly characteristics of the package as a major product attribute for consumer evaluation. As focus group participants in this research expressed purchase preference based on well-known brands (see Chapter 5), future research could take into consideration the effects of consumer perceptions on brand image in the analysis. Researchers could investigate brand image and its impacts on consumer perceptions and the evaluation of packaged product alternatives in the market. Exploring the relationship between brand image and consumer evaluation for packaged food purchase decisions could shed more light on branding and packaging practices.

In addition, this research did not examine the effects of demographic factors on purchase intention, willingness to pay and shopping effort for eco-friendly packaged instant noodles. Therefore, replication research can be directed towards exploring the relationships between demographic

factors and green purchase intention in association with willingness to pay and shopping effort. Integrating demographic factors such as age, sex, education and income into the research modelling could produce more findings relating to green purchase intention and behaviour. Potential findings relating to demographics would provide useful input to the government and business sectors in segmenting and targeting to profile the proper target audience for green communication and green marketing.

Next, in this research, all independent variables were treated as reflective constructs which were individually tested in the relationships directly with green purchase intention (see Chapter 6). Some of the variables were shown to be inter-related in this research (for example, environmental involvement has an impact on subjective environmental knowledge). Furthermore, environmental involvement and environmental self-identity were thus found to have indirect effects on willingness to and shopping effort. In other words, green purchase intention appeared to mediate the relationships of environmental involvement and environmental self-identity on willingness to pay and shopping effort but this was not fully examined. In the research scope, there were no questions or hypotheses formed to reflect the inter-relations, the indirect effects and the mediating role of purchase intention. Further research could fix the issues with alternative modelling to reflect the inter-relationships between variables as well as to examine the mediating role of purchase intention on the relationships of antecedent factors with willingness to pay and shopping effort.

The other limitation is that environmental self-identity and environmental involvement were hypothesised in the direction of motivation, and thus, these factors might form part of a higher order measure of motivation. This was not reflected and explored in this research's scope. Future research could examine a higher order measure of motivation and alternative modelling could thus be perused.

In relation to data collection, cross-sectional methods were used in the quantitative phase of this research. Such research designs are not able to produce evidence of causality despite the fact that they are useful for investigating associations between the key constructs of the research model. With more robust data collection methods, future research may supply more definitive evidence regarding the relationships between constructs as hypothesised in this research. While this research identified the factors having causal relationships with green purchase intention and which factor has the most significant influence, it is conceivable that other factors may also have an effect on green purchase intention. Hence, future research could be focused on identifying alternative factors

having relationships with green purchase intention, willingness to pay and shopping effort for eco-friendly packaging.

This research collected data from a commercial consumer online panel and 57.6 per cent of the survey participants had a bachelor degree. The high percentage of bachelor degree holders did not represent the population. Furthermore, the sample consisted of consumers mainly from three major cities of Vietnam: Hanoi, Ho Chi Minh City and Danang. Therefore, replications of the research which use a larger sampling size and which could gain a more representative sample would produce more generalisable research findings.

For the qualitative phase of this research, there are ways to improve its generalisability. This qualitative phase carefully recruited focus group participants using purposive sampling through a market research company. However, the sampling was limited in terms of sizes and urban locations. Research would benefit more from larger diversified samples across different locations in both urban and rural areas. In addition, a cross-country comparison would be very useful to enable researchers to explore cultural differences in consumer perceptions and consumer responses relating to eco-friendly packaging in different market contexts.

On a final note, as this research was only focused on the emerging market of Vietnam, the possibility of generalisability of research results is limited. Although it adds deep insights relating to a specific food product concerning eco-packaging in the Vietnamese context, cultural differences from country to country limit the generalisability of this research. Replication of the research is needed in other markets, including developed and developing countries to see how generalisable the research results are. Moreover, cross-country analysis could add more value in the discovery of similarities and differences across different research contexts. In doing so, researchers could exchange knowledge of green purchase intention and behaviour patterns in different research contexts to offer more reliable and useful insights to the government and business sectors in building a green consumption culture.

## **9.5 FINAL CONCLUDING REMARKS**

An important need to predict green purchase intention with regard to eco-friendly packaging was initiated, given the emerging market context of Vietnam with serious problems of packaging disposal and pollution. The literature review in Chapter 3 of this PhD thesis examined and determined a number of internal and external factors affecting green purchase intention. In prior

studies on green consumption, behavioural control, subjective norms and attitudinal factors from the TRA and the TPB help explain partly why consumers are motivated to purchase green products (see Arli *et al.*, 2018; Albayrak, Aksoy and Caber, 2013; Chen and Tung, 2014; Han, 2015; Hsu, Chang and Yansritakul, 2017; Konuk, Rahman and Salo, 2015; Maichum, Parichatnon and Peng, 2016; Paul, Modi and Patel, 2016; Prakash and Pathak, 2017; Verma and Chandran, 2018; Wei *et al.*, 2017; Yadav and Pathak, 2016). However, little research has integrated internal psychological and external contextual social factors into an integrative model to explore which factors produce significant impacts on green purchase intention for a packaged food product with regard to eco-friendly packaging. Furthermore, few studies have answered the question relating to what consumers in emerging markets perceive to be eco-friendly packaging.

The integrative model of green purchase intention developed in this research was built on the direction of the Motivation-Ability-Opportunity approach to include and validate seven internal and external factors. Using a process of theoretical model development and two-step model testing by SmartPLS 3.0, this research provided empirical evidence for the relationships between environmental self-identity and environmental involvement on green purchase intention. In addition, this research explored the impacts of green purchase intention on willingness to pay and shopping effort for a food product (instant noodles) in eco-friendly packaging. The results of this research demonstrate that (1) environmental self-identity and environmental involvement have significant effects on green purchase intention for packaged instant noodles with regard to eco-friendly packaging; (2) environmental self-identity has the most significant impact on green purchase intention within the research context; (3) green purchase intention is positively associated with willingness to pay and shopping effort for instant noodles in eco-friendly packaging. However, subjective environmental knowledge was observed not to have a significant impact on green purchase intention. Furthermore, four factors, namely, product involvement, perceived availability of alternatives, perceived descriptive norms and perceived time pressure were found to have insignificant relationships with green purchase intention for eco-friendly packaged instant noodles. In addition, this thesis revealed consumer insights for a consumer definition of important dimensions of eco-friendly packaging, namely, packaging materials, manufacturing technology and market appeal. A successful eco-friendly food package should satisfy not only the environmental characteristics of packaging materials and manufacturing process but also the market appealing characteristics of being attractive and reasonably priced.

In conclusion, motivating consumers to make green purchases has become increasingly important to help reduce negative impacts of consumption activities on the environment. Many factors can

hinder or can increase the chance for consumers to make eco-friendly purchase decisions. This research has contributed theoretically and practically to a more accurate understanding of green consumption behaviour especially in the context of an emerging market. The research model used in this thesis provides an open framework for future research to examine potential effects of other external social and internal psychological factors on green purchase intention and behaviour. The model only partly accounts for variances in green purchase intention (28.1 per cent), willingness to pay (45.8 per cent) and shopping effort (43.4 per cent). Therefore, further research is needed to identify and explore antecedents that can contribute to green purchase intention and the two related dependent factors. With a more advanced understanding of green purchase intention, more effective marketing and social programs can be developed to promote the purchase of products with environmentally friendly characteristics, including eco-friendly packaging. Hence, green purchase intention could be finally turned into actual green purchase behaviour. In this way, a green consumption culture could be built and developed in emerging countries, which will contribute to the sustainable development of the world.

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## APPENDIX 1: INFORMED CONSENT FORM – PHASE ONE



### Graduate School of Business and Law

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Informed Consent [FOCUS GROUP RESEARCH]

#### **Qualitative Research - Consumer perceptions of eco-friendly packaging and its different dimensions**

##### **Project Number: 16912**

You are invited to participate in a research study about Vietnamese consumers' perceptions of eco-friendly packaging. This study is being conducted by Nguyen Anh Thu, PhD Candidate at RMIT University, Australia under the supervision of Professor Clive Morley and Professor Linda Brennan, both from RMIT University, Australia. The findings from the research will be used in the PhD thesis on Exploring Consumers' Green Purchase Intention of a Packaged Food Product with regard to Eco-friendly packaging to be submitted as part of the requirements for the degree of Doctor of Philosophy at RMIT University, Australia.

You are invited to participate in this study because you are regularly a primary purchaser of food products, including packaged instant noodles, for yourself and for your families. Participation in this study is voluntary.

If you agree to participate in this study, you would participate in a focus group of 6-8 consumers in Ho Chi Minh City/Hanoi which will be held at CIMIGO office (the name/address of the venue) on (the date/time). The focus group will be led by Nguyen Anh Thu as the moderator. The topics that will be discussed during the focus group include your perceptions and beliefs of eco-friendly packaging/identification of available sorts of packaging used for packaged food products (packaged instant noodles) in Vietnam/your preferred packaging types when it comes to packaged food

products (packaged instant noodles)/and other factors which may affect your intention to buy instant noodles in eco-friendly packaging. The focus group will last about 2 hours.

The focus group will be audio-recorded in order to accurately capture what is said. If you participate in the study, you may request that the recording be paused at any time. You may choose how much or how little you want to speak during the group. You may also choose to leave the focus group at any time.

If you participate in the study, you will receive a shopping voucher which is valued at 150,000 VND (6.5 US dollars), valid in one year at any Maximark store in Vietnam. You can withdraw participation at any time of the research. Data will be confidentially stored at RMIT Vietnam SGS so that they can be destroyed 5 years after completion of the PhD thesis.

The information you will share with us if you participate in this study will be kept completely confidential. Participants will be asked not to use any names during the focus group interview. Reports of study findings will not include any personal identifying information. Audio-recordings of the focus groups will be kept on a password-protected computer in locked cabinets in the researcher's office at RMIT Vietnam SGS campus. The typed transcription will be kept on the password-protected computer and any printed copies will be kept in a locked file cabinet in the researcher's office at RMIT Vietnam SGS campus.

If you have any questions about this study, please contact Ms. Nguyen Anh Thu, PhD Candidate, email: [thu.nguyen@rmit.edu.vn](mailto:thu.nguyen@rmit.edu.vn)

Supervisors: Professor Clive Morley, email: [clive.morley@rmit.edu.au](mailto:clive.morley@rmit.edu.au); Professor Linda Brennan, email: [linda.brennan@rmit.edu.au](mailto:linda.brennan@rmit.edu.au)

Your signature on this consent form indicates your agreement to participate in this study.

You will be given a copy of this form to keep, whether you agree to participate or not.

The second signed consent form will be kept by the researcher.

---

I have read the consent form and all of my questions about the study have been answered. I understand that the focus group will be recorded. I agree to participate in this study.

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## APPENDIX 2: FOCUS GROUP INTERVIEW GUIDE – PHASE ONE

### Consent Process

Consent forms for focus group participants are completed in advance by all those seeking to participate. Below is a summary of the information in the consent form that focus group organizers and facilitators should use to make sure participants understand the information in the consent form.

*Thank you for agreeing to participate. We are very interested to hear your valuable opinion in the role of a consumer in Vietnam about eco-friendly packaging in general and in application for a packaged food product (instant noodles).*

- *The purpose of this study is to learn how you as a consumer perceive eco-friendly packaging and your experience with different types of packaging for instant noodles.*
- *The information you give us is completely confidential, and we will not associate your name with anything you say in the focus group.*
- *We would like to tape the focus groups so that we can make sure to capture the thoughts, opinions, and ideas we hear from the group. No names will be attached to the focus groups and the tapes will be destroyed as soon as they are transcribed.*
- *You may refuse to answer any question or withdraw from the study at any time.*
- *We understand how important it is that this information is kept private and confidential. We will ask participants to respect each other's confidentiality.*
- *If you have any questions now or after you have completed the questionnaire, you can always contact a study team member like me, or you can call my research supervisors whose names and email addresses are on the consent form.*
- *Please sign to show you agree to participate in this focus group.*

### Introduction:

#### 1. Welcome

Introduce yourself and the note taker, and send the Sign-In Sheet with a few quick demographic questions (age, gender, years living in the city) around to the group while you are introducing the focus group.

*Review the following:*

- Who we are and what we are trying to do

- What will be done with this information
- Why we asked you to participate

## 2. Explanation of the process

Ask the group if anyone has participated in a focus group before. Explain that focus groups are being used more and more often in consumer research.

### *About focus groups*

- We learn from you (positive and negative)
- Not trying to achieve consensus, we're gathering information
- In this project, we are doing both questionnaires and focus group interviews. The reason for using both of these tools is that we can get more in-depth information from a smaller group of people in focus groups. This allows us to understand the context behind the answers given in the written survey and helps us explore topics in more detail than we can do in a written survey.

### *Logistics*

- Focus group will last about two hours
- Feel free to move around
- Where is the bathroom? Exit?
- Help yourself to refreshments

## 3. Ground Rules

Ask the group to suggest some ground rules. After they brainstorm some, make sure the following are on the list.

- Everyone should participate.
- Information provided in the focus group must be kept confidential
- Stay with the group and please don't have side conversations
- Turn off cell phones if possible
- Have fun

## 4. Turn on Tape Recorder

## 5. Ask the group if there are any questions before we get started, and address those questions.

## 6. Introductions

- Go around table:

*Discussion begins, make sure to give people time to think before answering the questions and don't move too quickly. Use the probes to make sure that all issues are addressed, but move on when you feel you are starting to hear repetitive information.*

#### Focus Group Questions:

1. What is eco-friendly packaging?
2. What sorts of packaging do you associate with being environmentally friendly?
3. What dimensions of packaging can be considered environmentally friendly?
4. What types of eco-friendly packaging are applicable for a packaged food product such as packaged instant noodles?
5. What are some of the environmentally friendly features of packaging that are important to you?
6. Given alternatives of packaging used for instant noodles in the market (participants are shown 20 samples of real products for inspection), what type of packaging do you immediately associate with environmental friendliness?
7. If you were trying to be environmentally friendly, when it comes to buy a packaged food product (such as packaged instant noodles), which types of packaging would you prefer? Why?
8. What are your beliefs about environmentally friendly packaging?
9. What other factors might come into play in influencing or preventing you from purchasing packaged instant noodles with regard to eco-friendly packaging?

That concludes our focus group. Thank you so much for coming and sharing your thoughts and opinions with us.

#### **Materials and supplies for focus groups**

- Sign-in sheet
- Consent forms (one copy for participants, one copy for the team)
- Pads and Pencils for each participant
- Focus group interview Guide for Facilitator
- 1 recording device
- Batteries for recording device
- Permanent marker for marking tapes with focus group interview name, facility, and date
- Notebook for note-taking
- Refreshments

## APPENDIX 3: PARTICIPANT INFORMATION SHEET – PHASE TWO



### **INVITATION TO PARTICIPATE IN A RESEARCH PROJECT**

#### **PARTICIPANT INFORMATION**

**Project Title: Exploring Consumers' Green Purchase Intention for a Packaged Food Product with regard to Eco-friendly Packaging**

**Project Number: 19715**

Investigators:

- Ms. Nguyen Anh Thu, PhD (Business) degree student, Graduate School of Business and Law, RMIT University, thu.nguyen@rmit.edu.vn
- Professor Linda Brennan (Senior Supervisor: School of Communication and Media, RMIT University, linda.brennan@rmit.edu.au)
- Professor Mark Farrell (Associate Supervisor: Graduate School of Business and Law, RMIT University, mark.farrell@rmit.edu.au)

Dear Prospective Participant,

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straightforward language, or 'plain English'. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

#### **Who is involved in this research project? Why is it being conducted?**

This study will be used in a PhD Thesis for Nguyen Anh Thu, a student at RMIT University. Professor Linda Brennan and Professor Mark Farrell will be supervising the project, which was approved by the RMIT BECHEAN Ethics Committee on 24 November 2015.

#### **Why have you been approached?**

You have been invited to participate in this study because you are an active consumer in the packaged instant noodle category and you are older than 18 years old.

### **What is the project about? What are the questions being addressed?**

This study aims to investigate how individual characteristics and perceived social influences affect Vietnamese consumers' purchase intention for a packaged food product with regard to eco-friendly packaging. It is expected that 300 people will participate in this research.

The research questions being addressed are:

- What are the factors (individual and social) that affect consumer purchase intention for packaged instant noodles with regard to eco-friendly packaging?
- What factor has the most significant influence on consumer purchase intention for packaged instant noodles with regard to eco-friendly packaging?

### **If I agree to participate, what will I be required to do?**

Participants who consent to participate will be asked to respond to a number of online questionnaires, which will take around 15-20 minutes. These questionnaires involve questions about your experiences buying packaged instant noodles and your perceptions of factors impacting the buying of packaged instant noodles with regard to eco-friendly packaging. Participants will remain anonymous.

There are four sections. The first one asks for basic demographic information such as gender, age, education. The remaining sections include questions relating motivation, opportunity, ability, descriptive social norms and purchase intention for packaged instant noodles with regard to eco-friendly packaging.

### **What are the risks or disadvantages associated with participation?**

There are no anticipated risks or disadvantages associated with this study. Some items asked about experiences buying packaged instant noodles. If you are concerned about any of your responses to any of the questionnaire items, you may contact one of the investigators.

### **What are the benefits associated with participation?**

Whilst there are no direct benefits to you as a participant, your participation will assist in enhancing our knowledge of consumer purchase intention for a packaged food product with regard to eco-friendly packaging.

### **What will happen to the information I provide?**

The information provided by you will be held securely within RMIT University premises and password protected network systems. The data collected will be stored for a minimum of five years

and then it will be destroyed. The only individuals with access to this information are the researcher and researcher supervisors. Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission. The findings from this study will be used in a student report; however, only group data will be presented. This group data could possibly be published in academic journals.

Because of the nature of data collection, we are not obtaining written informed consent from you. Instead, we assume that you have given consent by your completion and submission of the questionnaire materials.

### **What are my rights as a participant?**

As a participant, you have the right to withdraw your participation at any time, without prejudice or penalty. You also have the right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for the participant. You also have the right to have any questions answered at any time.

### **Whom should I contact if I have any questions?**

If you have any questions, you should contact Nguyen Anh Thu at [thu.nguyen@rmit.edu.vn](mailto:thu.nguyen@rmit.edu.vn), Professor Linda Brennan at [linda.brennan@rmit.edu.au](mailto:linda.brennan@rmit.edu.au), or Professor Mark Farrell at [mark.farrell@rmit.edu.au](mailto:mark.farrell@rmit.edu.au). If you have any complaints about the conduct of this research project you can contact the Executive Officer, RMIT Human Research Ethics Committee, see [http://www.rmit.edu.au/rd/hrec\\_complaints](http://www.rmit.edu.au/rd/hrec_complaints).

### **What other issues should I be aware of before deciding whether to participate?**

There are no issues that have not been stated for the participant to be aware of.

### **Security of the website**

Users should be aware that the World Wide Web is an insecure public network that gives rise to the potential risk that a user's transactions are being viewed, intercepted or modified by third parties or that data which the user downloads may contain computer viruses or other defects.

### **Security of the data**

This project will use an external site to create, collect and analyse data collected in a survey format. The site we are using is Qualtrics. If you agree to participate in this survey, the responses you

provide to the survey will be stored on a host server that is used by Qualtrics. No personal information will be collected in the survey so none will be stored as data. Once we have completed our data collection and analysis, we will import the data we collect to the RMIT server where it will be stored securely for a period of five (5) years. The data on the Qualtrics host server will then be deleted and expunged.

Yours sincerely

Nguyen Anh Thu  
PhD (Business) Student Researcher

Linda Brennan  
Professor and Senior Supervisor

Mark Farrell  
Professor and Associate Supervisor

Research Ethics Committee, Research and Innovation, RMIT, GPO Box 2476V, Melbourne, 3001. Details of the complaints procedure are available at:

<http://www1.rmit.edu.au/browse;ID=vdotvpya2aof>

## APPENDIX 4: QUESTIONNAIRE SAMPLE (ENGLISH VERSION)

### **Project 19715: Exploring Consumers' Green Purchase Intention for a Packaged Food Product with regard to Eco-friendly Packaging**

*Thank you in advance for participating in this research project.*

You are invited to participate in a web-based online survey on consumer purchase intention for a packaged food product with regard to eco-friendly packaging. You do not have to respond to this survey. If you choose to participate, you may withdraw from the study at any time.

Your participation in this survey is voluntary. Participants who consent to participate will be asked to respond to 15 online questionnaires, which will take around 15-20 minutes. These questionnaires include questions about your experiences buying packaged instant noodles and your perceptions of factors impacting the buying of packaged instant noodles with regard to eco-friendly packaging.

All information will be recorded anonymously. You will not be asked to provide your name, identification number, or any other type of information that might personally identify you.

The results of analysis of this survey will be used in the doctorate thesis on "Exploring consumers' green purchase intention for a package food products with regard to eco-friendly packaging: The case of packaged instant noodles in Vietnam" by Nguyen Anh Thu, PhD candidate at RMIT University. The results may also be used in academic publications and conference presentations.

*Completion of this survey implies your consent to serve as a participant in this research.*

#### **1) What is your gender?**

- (1) Male  (2) Female

#### **2) What is your age? Tick the number that best applies to you.**

- (1) 20-25 years old  
 (2) 26-30 years old  
 (3) 31-36 years old  
 (4) 36-40 years old

- (5) 41-45 years old
- (6) 46-50 years old
- (7) 51 years and above

**3) What is the highest level of school you have completed? Tick the number that best applies to you.**

- (1) No school
- (2) Completed primary school
- (3) Completed junior high school
- (4) Completed senior high school
- (5) Associate or vocational degrees
- (6) Bachelor degree
- (7) Graduate degree

**4) Please describe how eco-friendly packaged instant noodle is to you. Circle the number that best applies.**

|  | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I find eco-friendly packaged instant noodles essential.  | <input type="radio"/> |
| I find eco-friendly packaged instant noodles beneficial. | <input type="radio"/> |
| I find eco-friendly packaged instant noodles useful.     | <input type="radio"/> |

**5) How often do you buy packaged instant noodles? Tick the number that best applies to you.**

- (1) Very rarely
- (2) Less than once a month
- (3) Once a month
- (4) Two or three times a month
- (5) Once a week
- (6) Two or three times a week
- (7) Almost daily

**6) How many packets of instant noodles do you often buy at a time? Tick the number that best applies to you.**

- (1) 1 - 2 packets
- (2) 2 - 5 packets
- (3) 5 -10 packets
- (4) 10 – 20 packets
- (5) half a case (24 packets)
- (6) full case (48 packets)
- (7) more than one case (more than 48 packets)

**7) Please tell us about how much you are under time pressure when doing grocery shopping. Circle the number that best applies.**

|   | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I find myself pressed for time when I go grocery shopping.              | <input type="radio"/> |
| I am in hurry when I do grocery shopping.                               | <input type="radio"/> |
| I have a limited amount of time in which to finish my grocery shopping. | <input type="radio"/> |
| I finish my grocery shopping fast because I have other things to do.    | <input type="radio"/> |

**8) Please tell us how you are concerned about the environment. Circle the number that best applies.**

|  | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I am concerned about the environment.                            | <input type="radio"/> |
| The condition of the environment affects the quality of my life. | <input type="radio"/> |
| I am willing to make sacrifices to protect the environment.      | <input type="radio"/> |
| My actions affect the environment.                               | <input type="radio"/> |

**9) Please tell us how you see yourself in terms of the environment. Circle the number that best applies.**

|   | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Acting environmentally friendly is an important part of who I am. | <input type="radio"/> |
| I am the type of person who acts environmentally friendly.        | <input type="radio"/> |
| I see myself as an environmentally friendly person.               | <input type="radio"/> |

**10) Your perceived knowledge about eco-friendly packaging. Circle the number that best applies.**

|  | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I know pretty much about eco-friendly packaging.                               | <input type="radio"/> |
| I do not feel very knowledgeable about eco-friendly packaging.                 | <input type="radio"/> |
| Among my circle of friends, I am one of the experts on eco-friendly packaging. | <input type="radio"/> |
| Compared to most other people, I know less about eco-friendly packaging.       | <input type="radio"/> |

**11) Given your experience with packaged instant noodles in the market, please indicate your responses to the following questions. Circle the number that best applies.**

|  | Not at all easily     | 2                     | 3                     | 4                     | 5                     | 6                     | Very easily           |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| How easily do you believe you can acquire packaged instant noodles in eco-friendly packaging?                | <input type="radio"/> |
| How easily do you believe you can find instant noodles packaged in an eco-friendly way in your neighborhood? | <input type="radio"/> |
| To what degree do you think instant noodles in eco-  |                       |                       |                       |                       |                       |                       |                       |

|  | Not at<br>all<br>easily | 2                     | 3                     | 4                     | 5                     | 6                     | Very<br>easily        |
|--|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| friendly packaging are easily available in the local market? | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**12) Please indicate how often you think people around you use eco-friendly bags? Tick the number that best applies.**

|   | Very<br>rarely        | 2                     | 3                     | 4                     | 5                     | 6                     | Very<br>often         |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| How often do you think your family members use eco-friendly bags (paper-based, reusable, biodegradable)?          | <input type="radio"/> |
| How often do you think people in your neighbourhood use eco-friendly bags (paper-based, reusable, biodegradable)? | <input type="radio"/> |
| How often do you think residents in your city use eco-friendly bags (paper-based, reusable, biodegradable)?       | <input type="radio"/> |

**13) Please indicate your intention to buy instant noodles in eco-friendly packaging (paper-based, biodegradable). Tick the number that best applies.**

Unlikely : \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_: Likely  
 1 2 3 4 5 6 7

Improbable : \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_: Probable  
 1 2 3 4 5 6 7

Impossible : \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_: Possible  
 1 2 3 4 5 6 7

**14) Please indicate your willingness to pay more for eco-friendly packaging. Choose the number that best applies.**

|  | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| It is acceptable to pay some extra money for instant noodles that are packaged in an eco-friendly way.               | <input type="radio"/> |
| I would accept paying more taxes as a consumer to pay for eco-friendly packaging.                                    | <input type="radio"/> |
| I would be willing to spend extra money for instant noodles that are packaged in a less environmentally harmful way. | <input type="radio"/> |

**15) Please indicate your shopping effort to buy instant noodles in eco-friendly packaging. Choose the number that best applies.**

|   | Strongly disagree     | 2                     | 3                     | 4                     | 5                     | 6                     | Strongly agree        |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I would spend more time choosing instant noodles in packaging that is environmentally friendly.                       | <input type="radio"/> |
| I would spend extra effort shopping for instant noodles in environmentally friendly packages.                         | <input type="radio"/> |
| I would pay more attention looking for environmental symbols on packaging when shopping for packaged instant noodles. | <input type="radio"/> |

**Thank you very much for your time and your participation in this research.**

## APPENDIX 5: QUESTIONNAIRE SAMPLE (VIETNAMESE VERSION)

### **KHẢO SÁT HÀNH VI MUA HÀNG THỰC PHẨM ĐÓNG GÓI LIÊN QUAN ĐẾN BAO BÌ THÂN THIỆN VỚI MÔI TRƯỜNG: NGHIÊN CỨU TRÊN NGƯỜI TIÊU DÙNG VIỆT NAM**

Thông tin dành cho người tham gia khảo sát:

Tên dự án: Nghiên cứu hành vi mua hàng thực phẩm đóng gói liên quan đến bao bì thân thiện với môi trường: Nghiên cứu trên người tiêu dùng Việt Nam - 19715

*Trước hết, xin chân thành cảm ơn anh/chị đã tham gia vào dự án nghiên cứu này.*

Anh/chị được mời tham gia khảo sát online (trên mạng internet) về dự định mua hàng thực phẩm đóng gói liên quan đến bao bì thân thiện với môi trường. Anh/chị không nhất thiết phải trả lời bằng câu hỏi. Ngay cả khi anh/chị đã quyết định tham gia, anh/chị vẫn có thể ngưng vào bất kỳ lúc nào.

Việc anh/chị tham gia khảo sát là hoàn toàn tự nguyện. Người tình nguyện tham gia sẽ trả lời 15 câu hỏi khảo sát trong chừng 15-20 phút. Trong nghiên cứu này, chúng tôi sẽ hỏi anh/chị về kinh nghiệm tiêu dùng của anh/chị đối với sản phẩm mì ăn liền đóng gói, và các suy nghĩ của anh/chị về các yếu tố có thể ảnh hưởng đến việc mua loại hàng thực phẩm này liên quan đến bao bì thân thiện với môi trường.

Tất cả thông tin sẽ được ghi nhận ẩn danh. Anh/chị sẽ không cần cung cấp tên, số chứng minh, hay bất cứ thông tin nào có thể giúp nhận ra nhân thân của anh/chị.

Kết quả nghiên cứu sẽ được báo cáo trong luận án tiến sĩ về đề tài “Nghiên cứu hành vi mua hàng thực phẩm đóng gói liên quan đến bao bì thân thiện với môi trường: Nghiên cứu trên người tiêu dùng Việt Nam”. Đề tài do nghiên cứu sinh tiến sĩ Nguyễn Anh Thư thực hiện tại Đại Học RMIT, Melbourne. Kết quả nghiên cứu cũng sẽ được báo cáo trong các bài báo và các hội nghị chuyên đề.

Hoàn tất bảng câu hỏi có nghĩa là anh/chị đã đồng ý tham gia vào nghiên cứu này.

**1) Độ tuổi của anh/chị? Chọn một phương án trả lời thể hiện đúng nhất độ tuổi của anh/chị**

- (1) 20-25 tuổi
- (2) 26-30 tuổi
- (3) 31-35 tuổi
- (4) 36-40 tuổi
- (5) 41-45 tuổi
- (6) 46-50 tuổi
- (7) 51 tuổi trở lên

**2) Giới tính. Chọn một phương án chỉ giới tính của bạn.**

- (1) Nam
- (2) Nữ

**3) Vui lòng cho biết trình độ học vấn của anh/chị – Chọn một phương án trả lời phản ánh đúng nhất trình độ học vấn của anh/chị**

- (1) Không đi học bao giờ
- (2) Hoàn thành bậc tiểu học (cấp I)
- (3) Hoàn thành bậc Trung học cơ sở (cấp II)
- (4) Hoàn thành bậc Trung học phổ thông (cấp III)
- (5) Bậc chứng chỉ đào tạo dạy nghề
- (6) Bậc cử nhân (đại học)
- (7) Bậc sau đại học

**4) Vui lòng cho biết vai trò của mì gói ăn liền đối với anh/chị. Chọn một phương án trả lời từ 1 (rất không đồng ý) đến 7 (rất đồng ý) đối với các câu sau:**

|                                       | Rất không đồng ý      | 2                     | 3                     | 4                     | 5                     | 6                     | Rất đồng ý            |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Tôi thấy mì gói ăn liền là thiết yếu. | <input type="radio"/> |
| Tôi thấy mì gói ăn liền là cần thiết. | <input type="radio"/> |
| Tôi thấy mì gói ăn liền là hữu ích.   | <input type="radio"/> |

**5) Anh/chị có thường xuyên mua mì gói ăn liền không? Chọn một phương án trả lời phù hợp nhất với thói quen mua mì gói của anh/chị.**

- (1) Rất hiếm khi mua
- (2) Thỉnh thoảng mới mua (khoảng ít hơn 1 lần/tháng)
- (3) Khoảng 1-2 lần/tháng
- (4) Khoảng 2-3 lần/tháng
- (5) Khoảng 1 lần/tuần
- (6) Khoảng 2-3 lần/tuần
- (7) Ngày nào cũng mua

**6) Mỗi lần anh/chị mua bao nhiêu gói mì ăn liền? Chọn một phương án trả lời phù hợp nhất với thói quen mua mì gói của anh/chị.**

- Khoảng 1 - 2 gói
- Khoảng 2 - 5 gói
- Khoảng 5 -10 gói
- Khoảng 10 – 20 gói
- nửa thùng (24 gói)
- nguyên thùng (48 gói)
- nhiều hơn 1 thùng (nhiều hơn 48 gói)

**7) Vui lòng cho biết áp lực thời gian mỗi khi anh/chị đi mua thực phẩm như thế nào. Chọn một phương án trả lời từ 1 (rất hiếm khi) đến 7 (rất thường xuyên) đối với các câu sau.**

|  | Rất<br>hiếm khi       | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>thường<br>xuyên |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Tôi thấy mình rất căng về thời gian khi đi mua thực phẩm.      | <input type="radio"/>  |
| Tôi thường vội vàng mỗi khi đi mua thực phẩm.                  | <input type="radio"/>  |
| Tôi có quỹ thời gian hạn chế để hoàn thành việc mua thực phẩm. | <input type="radio"/>  |

|  | Rất<br>hiếm khi       | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>thường<br>xuyên |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Tôi thường kết thúc việc mua thực phẩm nhanh vì tôi còn có nhiều việc khác phải làm. | <input type="radio"/>  |

**8) Vui lòng cho biết thái độ của cá nhân anh/chị đối với vấn đề môi trường. Chọn một phương án trả lời từ 1 (Rất không đồng ý) đến 7 (Rất đồng ý) đối với các câu sau:**

|   | Rất<br>không<br>đồng ý | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>đồng ý         |
|---|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Tôi quan tâm đến môi trường.                                    | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tình trạng môi trường có ảnh hưởng đến chất lượng sống của tôi. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi sẵn sàng hy sinh một số lợi ích để bảo vệ môi trường.       | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hành động của tôi có ảnh hưởng đến môi trường.                  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**9) Vui lòng cho biết anh/chị tự nhìn nhận về bản thân như thế nào trong vấn đề môi trường. Chọn một phương án trả lời từ 1 (Rất không đồng ý) đến 7 (Rất đồng ý):**

|   | Rất<br>không<br>đồng ý | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>đồng ý         |
|---|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Hành động thân thiện với môi trường là tính cách con người tôi. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi là người hành động thân thiện với môi trường.               | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi tự nhìn nhận mình là người thân thiện với môi trường        | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**10) Vui lòng cho biết kiến thức của bạn về bao bì thân thiện với môi trường. Chọn một phương án trả lời từ 1 (Rất không đồng ý) đến 7 (Rất đồng ý) đối với các câu sau:**

|  | Rất<br>không<br>đồng ý | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>đồng ý         |
|--|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Tôi hiểu biết khá nhiều về bao bì thân thiện môi trường.   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi cảm thấy không hiểu biết lắm về bao bì thân thiện môi trường.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Trong vòng quen biết, tôi là một trong những người hiểu biết nhiều nhất về bao bì thân thiện môi trường. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| So với nhiều người khác, tôi hiểu biết ít hơn về bao bì thân thiện môi trường                            | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**11) Vui lòng cho biết phản ánh nào sau đây thể hiện đúng nhất ý kiến của anh/chị về nguồn cung sản phẩm mì gói ăn liền sử dụng bao bì thân thiện môi trường. Chọn một phương án trả lời phản ánh ý kiến của bạn từ 1 (Không dễ tí nào) đến 7 (Rất dễ):**

|   | Không<br>dễ tí nào    | 2                     | 3                     | 4                     | 5                     | 6                     | Rất dễ                |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Theo anh/chị, có dễ tìm mua mì gói ăn liền sử dụng bao bì thân thiện môi trường không?  | <input type="radio"/> |
| Theo anh/chị, có dễ tìm mua mì gói ăn liền sử dụng bao bì thân thiện môi trường ở khu dân cư mà anh/chị đang sinh sống không? | <input type="radio"/> |
| Theo anh/chị, mì gói ăn liền sử dụng bao bì thân thiện môi trường có thể dễ dàng tìm thấy nhiều trên thị trường không?        | <input type="radio"/> |

12) Vui lòng cho biết ý kiến của anh/chị về hành vi sử dụng túi thân thiện môi trường của những người xung quanh. Chọn một phương án trả lời từ 1 (Rất hiếm khi) đến 7 (Rất thường xuyên).

|  | Rất<br>hiếm khi       | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>thường<br>xuyên |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Theo anh/chị, gia đình anh/chị sử dụng túi thân thiện với môi trường (ví dụ như túi giấy, túi tái sử dụng nhiều lần, túi tự hủy) có thường xuyên không?                              | <input type="radio"/>  |
| Theo anh/chị, những người hàng xóm trong khu phố anh/chị sử dụng túi thân thiện với môi trường (ví dụ như túi giấy, túi tái sử dụng nhiều lần, túi tự hủy) có thường xuyên không?    | <input type="radio"/>  |
| Theo anh/chị, cư dân trong thành phố anh/chị đang sinh sống sử dụng túi thân thiện với môi trường (ví dụ như túi giấy, túi tái sử dụng nhiều lần, túi tự hủy) có thường xuyên không? | <input type="radio"/>  |

**13) Vui lòng cho biết anh/chị có ý định mua mì ăn liền sử dụng bao bì thân thiện với môi trường không – ví dụ như các loại bao bì giấy, túi sinh học tự hủy. Chọn một phương án từ 1- Không đến 7-Có, đối với các câu sau.**

Không chắc chắn : \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_: Chắc chắn

1 2 3 4 5 6 7

Không thể xảy ra: \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_: Có thể xảy ra

1 2 3 4 5 6 7

Không có khả năng: \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_: Có khả năng

1 2 3 4 5 6 7

**14) Vui lòng cho biết anh/chị có sẵn sàng chi thêm để mua mì ăn liền sử dụng bao bì thân thiện với môi trường không. Chọn một phương án trả lời từ 1 (Rất không đồng ý) đến 7 (Rất đồng ý) đối với các câu sau:**

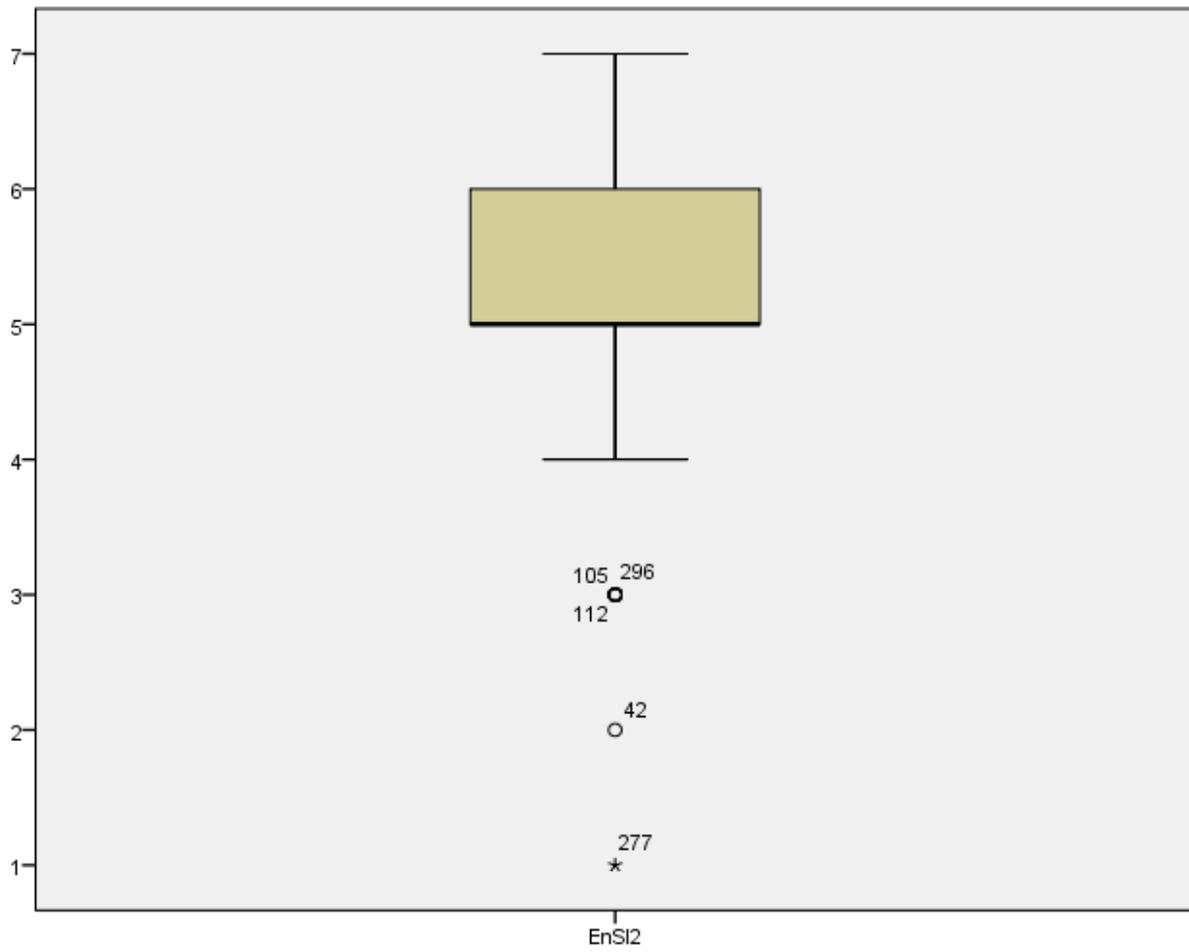
|   | Rất<br>không<br>đồng ý | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>đồng ý         |
|---|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Tôi chấp nhận chi thêm cho những loại mì ăn liền sử dụng bao bì thân thiện với môi trường | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Là người tiêu dùng, tôi đồng ý trả thêm thuế cho bao bì thân thiện với môi trường.        | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi sẵn sàng chi thêm để mua mì ăn liền sử dụng bao bì ít gây hại hơn cho môi trường.     | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**15) Vui lòng cho biết anh/chị có cố gắng hơn để tìm mua mì gói ăn liền sử dụng bao bì thân thiện với môi trường không. Chọn một phương án trả lời từ 1 (Rất không đồng ý) đến 7 (Rất đồng ý) đối với các câu sau:**

|  | Rất<br>không<br>đồng ý | 2                     | 3                     | 4                     | 5                     | 6                     | Rất<br>đồng ý         |
|--|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Tôi sẽ bỏ thêm thời gian để tìm mua mì gói ăn liền sử dụng bao bì thân thiện với môi trường.     | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi sẽ bỏ nhiều công sức hơn để tìm mua mì gói ăn liền sử dụng bao bì thân thiện với môi trường. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Tôi sẽ chú tâm hơn để tìm xem các biểu tượng môi trường trên bao bì khi mua mì gói ăn liền.      | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**Rất cảm ơn anh/chị đã tham gia dự án và dành thời gian để trả lời bảng khảo sát này.**

## APPENDIX 6: UNIVARIATE OUTLIER HISTOGRAM



**APPENDIX 7: DESCRIPTIVE STATISTICS**

**Descriptive Statistics**

|                       | N         | Minimum   | Maximum   | Mean      | Std.<br>Deviation | Skewness  |               | Kurtosis  |               |
|-----------------------|-----------|-----------|-----------|-----------|-------------------|-----------|---------------|-----------|---------------|
|                       | Statistic | Statistic | Statistic | Statistic | Statistic         | Statistic | Std.<br>Error | Statistic | Std.<br>Error |
| PI1                   | 308       | 1         | 7         | 4.16      | 1.688             | -.256     | .139          | -.865     | .277          |
| PI2                   | 308       | 1         | 7         | 4.78      | 1.383             | -.454     | .139          | .040      | .277          |
| PI3                   | 308       | 1         | 7         | 4.74      | 1.591             | -.629     | .139          | -.198     | .277          |
| PerTP1                | 308       | 1         | 7         | 3.10      | 1.609             | .232      | .139          | -.901     | .277          |
| PerTP2                | 308       | 1         | 7         | 3.16      | 1.596             | .289      | .139          | -.884     | .277          |
| PerTP3                | 308       | 1         | 7         | 3.56      | 1.660             | .118      | .139          | -.933     | .277          |
| PerTP4                | 308       | 1         | 7         | 3.70      | 1.515             | .069      | .139          | -.474     | .277          |
| EnI1                  | 308       | 1         | 7         | 6.05      | 1.067             | -1.063    | .139          | 1.242     | .277          |
| EnI2                  | 308       | 1         | 7         | 6.00      | 1.123             | -1.008    | .139          | .652      | .277          |
| EnI3                  | 308       | 1         | 7         | 5.71      | 1.183             | -.617     | .139          | -.260     | .277          |
| EnI4                  | 308       | 1         | 7         | 5.20      | 1.538             | -.883     | .139          | .434      | .277          |
| EnSI1                 | 308       | 1         | 7         | 5.53      | 1.190             | -.628     | .139          | .604      | .277          |
| EnSI2                 | 308       | 1         | 7         | 5.44      | 1.153             | -.357     | .139          | -.212     | .277          |
| EnSI3                 | 308       | 1         | 7         | 5.40      | 1.142             | -.386     | .139          | -.121     | .277          |
| EnK1                  | 308       | 1         | 7         | 4.57      | 1.441             | -.246     | .139          | -.529     | .277          |
| EnK2                  | 308       | 1         | 7         | 4.53      | 1.625             | -.230     | .139          | -.884     | .277          |
| EnK3                  | 308       | 1         | 7         | 3.69      | 1.493             | -.016     | .139          | -.531     | .277          |
| EnK4                  | 308       | 1         | 7         | 4.28      | 1.466             | -.006     | .139          | -.567     | .277          |
| PerA1                 | 308       | 1         | 7         | 2.69      | 1.618             | .755      | .139          | -.341     | .277          |
| PerA2                 | 308       | 1         | 7         | 2.58      | 1.659             | .988      | .139          | .064      | .277          |
| PerA3                 | 308       | 1         | 7         | 2.73      | 1.568             | .699      | .139          | -.345     | .277          |
| PerDN1                | 308       | 1         | 7         | 3.84      | 1.734             | .111      | .139          | -.882     | .277          |
| PerDN2                | 308       | 1         | 7         | 3.01      | 1.474             | .554      | .139          | -.405     | .277          |
| PerDN3                | 308       | 1         | 7         | 3.25      | 1.444             | .452      | .139          | -.227     | .277          |
| BI1                   | 308       | 2         | 7         | 5.19      | 1.034             | .067      | .139          | -.515     | .277          |
| BI2                   | 308       | 2         | 7         | 5.28      | 1.067             | .095      | .139          | -.834     | .277          |
| BI3                   | 308       | 3         | 7         | 5.44      | 1.144             | .015      | .139          | -1.241    | .277          |
| WTP1                  | 308       | 2         | 7         | 5.67      | 1.145             | -.445     | .139          | -.459     | .277          |
| WTP2                  | 308       | 1         | 7         | 5.35      | 1.468             | -.884     | .139          | .588      | .277          |
| WTP3                  | 308       | 1         | 7         | 5.69      | 1.230             | -.723     | .139          | .277      | .277          |
| SE1                   | 308       | 1         | 7         | 4.79      | 1.648             | -.519     | .139          | -.426     | .277          |
| SE2                   | 308       | 1         | 7         | 4.52      | 1.703             | -.324     | .139          | -.650     | .277          |
| SE3                   | 308       | 1         | 7         | 5.26      | 1.585             | -.715     | .139          | -.326     | .277          |
| Valid N<br>(listwise) | 308       |           |           |           |                   |           |               |           |               |

## APPENDIX 8: COMMON METHOD BIAS RESULTS

### Total Variance Explained

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 8.285               | 25.105        | 25.105       | 8.285                               | 25.105        | 25.105       |
| 2         | 4.535               | 13.742        | 38.847       |                                     |               |              |
| 3         | 2.510               | 7.605         | 46.452       |                                     |               |              |
| 4         | 2.427               | 7.355         | 53.807       |                                     |               |              |
| 5         | 1.963               | 5.948         | 59.755       |                                     |               |              |
| 6         | 1.532               | 4.642         | 64.397       |                                     |               |              |
| 7         | 1.391               | 4.216         | 68.613       |                                     |               |              |
| 8         | 1.134               | 3.436         | 72.049       |                                     |               |              |
| 9         | 1.004               | 3.042         | 75.091       |                                     |               |              |
| 10        | .820                | 2.486         | 77.577       |                                     |               |              |
| 11        | .781                | 2.367         | 79.944       |                                     |               |              |
| 12        | .670                | 2.030         | 81.974       |                                     |               |              |
| 13        | .585                | 1.773         | 83.747       |                                     |               |              |
| 14        | .550                | 1.666         | 85.413       |                                     |               |              |
| 15        | .457                | 1.386         | 86.799       |                                     |               |              |
| 16        | .436                | 1.322         | 88.120       |                                     |               |              |
| 17        | .382                | 1.157         | 89.277       |                                     |               |              |
| 18        | .365                | 1.106         | 90.383       |                                     |               |              |
| 19        | .359                | 1.087         | 91.470       |                                     |               |              |
| 20        | .333                | 1.008         | 92.478       |                                     |               |              |
| 21        | .299                | .905          | 93.383       |                                     |               |              |
| 22        | .274                | .831          | 94.214       |                                     |               |              |
| 23        | .267                | .810          | 95.023       |                                     |               |              |
| 24        | .257                | .778          | 95.801       |                                     |               |              |
| 25        | .224                | .678          | 96.480       |                                     |               |              |
| 26        | .206                | .625          | 97.105       |                                     |               |              |
| 27        | .190                | .574          | 97.679       |                                     |               |              |
| 28        | .174                | .527          | 98.206       |                                     |               |              |
| 29        | .153                | .465          | 98.671       |                                     |               |              |
| 30        | .128                | .388          | 99.059       |                                     |               |              |
| 31        | .122                | .370          | 99.429       |                                     |               |              |
| 32        | .109                | .330          | 99.759       |                                     |               |              |
| 33        | .080                | .241          | 100.000      |                                     |               |              |

Extraction Method: Principal Component Analysis.

## APPENDIX 9: CHECKING FOR CONVERGENCE

|                    | BI1   | BI2   | BI3   | EnI1  | EnI2  | EnI3  | EnI4  | EnK1  | EnK2  | EnK3  | EnSI1 | EnSI2 | EnSI3 | PI1   | PI2   | PI3   | PerA1 | PerA2 | PerA3 | PerDN1 | PerDN2 | PerDN3 | PerTP1 | PerTP2 | PerTP3 | PerTP4 | SE1   | SE2   |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| <b>Iteration 0</b> | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000 | 1.000 |
| <b>Iteration 1</b> | 0.362 | 0.362 | 0.345 | 0.294 | 0.319 | 0.381 | 0.249 | 0.696 | 0.254 | 0.269 | 0.298 | 0.399 | 0.385 | 0.172 | 0.714 | 0.261 | 0.275 | 0.385 | 0.414 | 1.072  | -0.083 | -0.038 | 0.323  | 0.370  | 0.383  | 0.099  | 0.357 | 0.349 |
| <b>Iteration 2</b> | 0.361 | 0.362 | 0.346 | 0.301 | 0.317 | 0.375 | 0.249 | 0.702 | 0.247 | 0.267 | 0.298 | 0.399 | 0.385 | 0.173 | 0.713 | 0.259 | 0.277 | 0.383 | 0.414 | 1.073  | -0.083 | -0.040 | 0.322  | 0.370  | 0.384  | 0.098  | 0.357 | 0.350 |
| <b>Iteration 3</b> | 0.361 | 0.362 | 0.346 | 0.302 | 0.317 | 0.375 | 0.249 | 0.702 | 0.247 | 0.267 | 0.298 | 0.399 | 0.385 | 0.173 | 0.714 | 0.260 | 0.277 | 0.383 | 0.414 | 1.072  | -0.083 | -0.040 | 0.322  | 0.370  | 0.384  | 0.098  | 0.357 | 0.350 |
| <b>Iteration 4</b> | 0.361 | 0.362 | 0.346 | 0.302 | 0.317 | 0.375 | 0.249 | 0.702 | 0.247 | 0.267 | 0.298 | 0.399 | 0.385 | 0.173 | 0.714 | 0.260 | 0.277 | 0.383 | 0.414 | 1.072  | -0.083 | -0.040 | 0.322  | 0.370  | 0.384  | 0.098  | 0.357 | 0.350 |
| <b>Iteration 5</b> | 0.361 | 0.362 | 0.346 | 0.302 | 0.317 | 0.375 | 0.249 | 0.702 | 0.247 | 0.267 | 0.298 | 0.399 | 0.385 | 0.173 | 0.714 | 0.260 | 0.277 | 0.383 | 0.414 | 1.072  | -0.083 | -0.040 | 0.322  | 0.370  | 0.384  | 0.098  | 0.357 | 0.350 |
| <b>Iteration 6</b> | 0.361 | 0.362 | 0.346 | 0.302 | 0.317 | 0.375 | 0.249 | 0.702 | 0.247 | 0.267 | 0.298 | 0.399 | 0.385 | 0.173 | 0.714 | 0.260 | 0.277 | 0.383 | 0.414 | 1.072  | -0.083 | -0.040 | 0.322  | 0.370  | 0.384  | 0.098  | 0.357 | 0.350 |

APPENDIX 10: RESULTS OF STRUCTURAL MODEL ASSESSMENT (EXTRACTED FROM SMARTPLS 3.0)

