

Examining the Moderating Effect of Price Sensitivity on the Relationship between Perceived Determinants and Intention to Purchase Green Products: Insights from Malaysian Consumers. A Conceptual Study

Zahoor Ur Rehman, Noor Aslinda Abu Seman*, and Amran Harun

Faculty of Technology Management and Business

Universiti Tun Hussein Onn Malaysia

Parit Raja, Johor, Malaysia

zahoorrehman715@gmail.com, naslinda@uthm.edu.my, amranh@uthm.edu.my

Abstract

The environmental degradation caused by industries has triggered consumers to shift their consumption of conventional products to green products. Despite the government's efforts to promote green products, the consumption of green products is still scarce due to the low level of awareness of the healthy environment and green concept among consumers in Malaysia. Considering limited studies regarding green purchase intention in Malaysia, this study specifically focuses on investigating the influence of perceived determinants (attitude, subjective norms, perceived environmental concern, perceived environmental knowledge, perceived consumer effectiveness and government green initiatives) on consumers' intentions to purchase green products and the moderating effect of price sensitivity. The study outcomes will benefit manufacturers, marketers, policymakers, and academicians.

Keywords

Green Products, Intention to Purchase, Perceived Determinants, Perceived Price Sensitivity, Malaysian Millennial Consumers

1. Introduction

One of the world's leading issues nowadays is the environmental degradation caused by industries; thus, consumers have shifted from conventional products to green products (Chen & Chai, 2010). As a developing country, Malaysia is marching towards becoming a developed and sustainable nation, and much emphasis has been placed on the conservation of the environment (EPU, 2020). Hence, the Malaysian government, together with the other 192 world leaders, adopted the 2030 Agenda for Sustainable Development (2030 Agenda) at the United Nations General Assembly in New York on September 25, 2015 (EPU, 2020). In addition, the Malaysian government has launched several green initiatives, including the Ministry of Energy, Green Technology, and Water (KeTHA), MyHIJAU, and the National eco-labelling scheme, to promote and encourage the public use of green technology and the consumption of green products. (Myhijau, 2018). In addition, the Malaysian government also signed on with ISO 14001 for environmental sustainability in Malaysia. ISO 14001 is an international standard focused on environmental management systems for organizations (Shaharudin et al., 2015). As per statistics from MyHIJAU (2021), the number of registered green products and services increased from 2041 in 2019 to 2315 in 2020. In addition, the target number of green products and services in 2020 was 5000, and the actual number was 7498, showing an increased number of registered green products and services.

Despite government efforts, consumer purchasing of green products remains low in Malaysia (Rahman, 2018). In a recent report, Nielsen Global Survey (2021) stated that among developing countries, only China, India, Saudi Arabia, Thailand, South Korea, and Vietnam are listed where consumers have high purchasing behaviors toward green products. As a developing country, Malaysia is not on the list due to low awareness of the healthy environment and green concept (Yii, Shein & Ming, 2020). Therefore, this paper attempts to investigate consumers' perceptions of green products and government green initiatives toward environmental sustainability in Malaysia from the consumers' perspective. Despite this fact, literature providing an understanding of the perceived determinants influencing

consumers' intention to purchase green products is scarce in Malaysia, and most importantly, the moderating effect of perceived price sensitivity.

1.1 Problem statement

A recent literature review conducted by Wijekoon and Sabri (2021) stated that the number of articles that investigate green product purchasing behaviours of consumers is increasing; 58.3 percent of these studies are based on data from five Asian countries: China (20), India (18), Malaysia (10), Pakistan (9), and Taiwan (6). In contrast, the review of Wijekoon and Sabri (2021) in Malaysia stated that no study had been conducted on the intention of purchasing green products. Moreover, little research has been carried out to examine green products' purchase intentions.

Several studies conducted in Malaysia regarding green product purchase behaviour have contributed a lot to the literature (Azami, Bathmanathan & Rajadurai, 2018; Ghazali et al., 2017; Nezakati & Hosseinpour, 2015; Ogiemwonyi et al., 2020; Suki, 2016). However, these studies have focused only on those consumers who have already purchased green products and/or are purchasing them repeatedly, while there has not been specific attention paid to consumers' intention to purchase green products in Malaysia. Besides, it is meaningful to mention that "intention to purchase" is the likelihood of individuals toward a specific object before purchasing, whereas "purchase behaviour" is the repeated action for the particular object during purchasing (Ajzen, 2002; Chandon et al., 2005). Hence, this study will fill the research gap and will investigate Malaysian consumers' intentions to purchase green products.

The existing literature shows that the most crucial factors influencing consumers' intention to purchase green products are attitude towards green products, perceived environmental concern, perceived environmental knowledge, perceived consumer effectiveness, and government green initiatives (Emekci, 2019; Jaiswal & Kant, 2018; Kang et al., 2013; Rausch & Kopplin, 2020; Yadav & Pathak, 2016). Interestingly, these determinants have been less researched in the Malaysian context.

Remarkably, this study attempts to take the significant factor that is "perceived price sensitivity" as a moderating variable to explore further consumers' intentions of how this factor moderates the link between perceived determinants and intention to purchase green products. Some studies mention that price is considered the key factor affecting the buying decision of green products. For price-sensitive customers in Malaysia, most consumers perceive green products as expensive (Ahamat, Ahmad & Mohd, 2018; Sharaf & Perumal, 2018; Tan, Ojo & Thurasamy, 2019). Thus, it is noted that price is a strong determinant of purchase intention toward green products in Malaysia (Sharaf & Perumal, 2018; Tan et al., 2019). Therefore, this study will investigate these determinants to fill the research gap and contribute to the literature.

1.2 Purpose of the study

This paper aims to investigate Malaysian consumers' intention to purchase green products. The paper also investigates perceived determinants influencing consumers' intentions to purchase green products and the relationships between these determinants and the purchase intentions of Malaysians.

2. Literature Review

Purchase intention is the plan to buy a specific product or service within a designated time (Morwitz, 2014). The purchasing intention concept has importance in the field of marketing. Intentions are different from attitudes, and it might be defined as the person's motivation in the sense of his or her conscious plan to exert effort to carry out a behaviour (Morwitz, 2014). The term green is referred to those products which are environmentally friendly and for which intentions are developed to purchase them. Thus, the terms "green purchase intention" or "intention to purchase green products" can be used interchangeably and are both acceptable (Smith & Paladino, 2010; Sreen, Purbey & Sadarangani, 2018). This study goes with the term intention to purchase green products as a dependent variable. It can be defined as "the willingness of an individual to consider and prefer the green product rather than the conventional or traditional product in the decision-making process" (Lasuin & Ching 2014)

A systematic review shows that Malaysian consumers' intentions to purchase green products are less researched, particularly determinants influencing their intentions to purchase green products with the moderating effect of price sensitivity (Rehman et al., 2022). Such determinants are attitude, subjective norms, perceived environmental concern, perceived environmental knowledge, perceived consumer effectiveness, and government green initiatives (Rehman et al., 2022). These determinants are the strongest predictors of consumers' intention to purchase green products. Such

a specific study is lacking in the Malaysian context, particularly in the moderating effect of price sensitivity (Rehman et al., 2022). Thus, this study provides new insights into the intention to purchase in a new context.

2.1 Green products in Malaysia

The Malaysian government has invested and is struggling for the protection of the environment. However, the knowledge of consumers' attitudes towards green products is not high (Rahman, 2018). Since 2013, the combined efforts of MyHIJAU and KeTTHA have brought together the certified green products in Malaysia that meet local and international environmental standards under one single mark called "Malaysia MyHIJAU" (Gani, 2020). The MyHIJAU mark has made it easy for consumers to identify and differentiate green products from conventional products. More than 30 green product groups have been registered with Malaysia's MyHIJAU mark. Cleaning services, paper, ICT, paint, energy-efficient indoor lighting, fibre cement, air-conditioning systems, textiles, furniture, data center, multipurpose photocopier, bio-degradable packaging, rubber products, automotive workshop services, stationary, water-efficient products, and printing services are examples of such products (Gani, 2020). Despite the efforts of the Malaysian government, consumers in the East Coast of Peninsular Malaysia do not have or have a slight awareness of green products (Rahman, 2018). This study thus aims to investigate perceived determinants influencing Malaysian consumers' intentions to purchase green products.

2.2 Perceived determinants influencing intention to purchase green products

A systematic review by Rehman et al. (2022) found that several determinants influence consumers' intentions to purchase green products. Among the determinants, some of them are mentioned in the following sections, were the strongest predictors of intention to purchase green products

2.2.1 Attitude towards green products

Ajzen (1991) defined attitude as: "the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question." Attitudes are normally measured by assessing a person's beliefs (Ajzen & Fishbein, 1975). As Ajzen (1991) mentioned, the more favorable the attitude toward an individual's behaviour, the more likely that individual will be likely to perform a certain behaviour. Consumer's attitudes and intention to purchase have been reported in studies from different countries across a wide range of green products such as organic food products (Zhou et al., 2013; Yadav & Pathak, 2016; Saleki et al., 2019), green hotels (Chen & Tung, 2014; Teng, Wu & Liu, 2015; Han & Yoon, 2015), cosmetics (Pudaruth, Juwaheer & Seewoo, 2015; Jaini, Quoquab & Mohammad, 2019). In the Malaysian context, a few studies have provided empirical evidence in support of a positive association between attitude toward green products and intention to purchase green products. For example, Al Mamun et al. (2018) and Lim et al. (2019) findings reveal that consumers' attitudes towards sustainable products significantly and positively affect their purchase intention. In their study, Tan et al. (2019) found that attitude was not a significant determinant of green product purchasing decisions. As a result, there is still lack of findings in the relationship between attitude and purchase intention. Therefore, this study will look at the Malaysian consumers' attitudes toward green products and their effect on their intentions to purchase green products

2.2.2 Subjective norms

Social or subjective norm refers to the level of social pressure that influences an individual to perform or not perform a certain action or behaviour (Maichum et al., 2016). Social pressure can be originated from influential people related to the individual, such as close family, friends, relatives, peers, celebrities, idols, or even different organizations (Ajzen, 1991). In the marketing and consumer behaviour context, some studies have documented subjective norms as an important determinant of purchase intention (Paul, Modi & Patel, 2016). Consumers are more likely to adjust their purchase intention when their referents have strong negative feelings about a product; likewise, a customer's purchase intention would be elevated if others more positively reference the same product (Kotler & Keller, 2012). Some studies found that subjective norm has a strong influence on purchase intention within the context of cosmetics by Kim and Chung (2011), in the context of organic food by Nilssen et al. (2018) and Saleki et al. (2019), energy-efficient household appliances Tan et al. (2017) and green hotel revisit intention (Chen & Tung 2014; Teng et al., 2015). There is still lack of literature providing such relationship in the Malaysian context.

2.2.3 Perceived environmental concern

Environmental concern refers to people's awareness of environmental issues and their willingness and support to resolve them or indicate the willingness to contribute personally to their solution (Chaudhary & Bisai, 2018). Environmental concern denotes the level at which individuals are conscious of challenges about the environment and

assist in their resolution or show the preparedness to participate directly in their resolution (Maichum et al., 2017). Researchers have examined the influence of environmental concerns on green product purchase intention. For example, Lasuin and Ching (2014) mentioned a positive and significant relationship between environmental concerns and the intention to purchase green products. Lasuin and Ching (2014) further suggest that the more consumers are concerned about the environment, the more likely they are to purchase green products. In the same way, Mamun et al. (2020) found a significant and positive relationship between environmental concern and intention to purchase green skincare products among Malaysian consumers. Literature providing such relationships is scarce in the Malaysian context. Hence, this study will look into such relationships.

2.2.4 Perceived environmental knowledge

Environmental knowledge in the green context is defined as “factual information that individuals have about the environment, the ecology of the planet, and the influence of human actions on the environment/ecology” (Chang & Watchravesringkan, 2018). Consumers with environmental knowledge may be more likely to purchase green products (Maichum et al., 2016). In a sustainability context the measure of perceived environmental knowledge has been found to be an essential prerequisite of intention (or, more specifically, purchase intention of green products) (Yadav & Pathak, 2016; Maichum et al., 2016; Rausch & Kopplin, 2020). In conclusion to the literature provided, environmental knowledge is regarded as an important determinant in the purchase decision of green products. However, there is inconsistency in the relationship between environmental knowledge and intention to purchase green products. Studies providing such relationships are few in Malaysia. For example, a study conducted by Tan et al. (2017) found no significant relationship between environmental knowledge and intention to purchase energy-efficient household appliances in Penang, Malaysia. At this point, the authors released a literature deficiency in Malaysia concerning the relationship between perceived environmental knowledge and intention to purchase green products.

2.2.5 Perceived consumer effectiveness

Ellen et al. (1991) defined perceived consumer effectiveness as “a domain-specific belief that the efforts of an individual can make a difference in the solution to a problem”. Perceived consumer effectiveness has received significant attention in marketing. Marketers use perceived consumer effectiveness to predict specific actions in order to plan strategies and design messages that promote such behaviour (Ellen et al., 1991). In the literature on sustainable consumer behaviour, several scholars for example, Taufique and Vaithianathan (2018), Zheng and Chi (2015) found that perceived consumer effectiveness significantly affects purchase intention, which shows that a higher level of confidence in an individual's contribution to the environment through purchasing green products leads to greater purchase intention. However, in the Malaysian context, such behavioural relationships are rarely tested. For example, Chuah and Lu (2019) conducted a cross-culture study on Chinese and Malaysian consumers' intentions toward green products, and the results revealed a significant and positive relationship between perceived consumer effectiveness and intention to purchase green products for Malaysian consumers. In contrast, no significant relationship was found between perceived consumer effectiveness and intention to purchase green products for Chinese consumers. Therefore, this study attempts to establish an underlying relationship in the present Malaysian indigenous context of green products.

2.2.6 Government green initiatives

Government green initiatives refer to initiatives taken by the national government, or the support given by the national government to improve the environment (Mun, 2014). Further, Ivanova et al. (2019) added that the government must be involved in the environmentalism process to maintain environmental sustainability and promote green consumption patterns. Government involvement in resolving environmental problems can make people change their behaviour and become more concerned about the environment (Ivanova et al., 2019; Rajadurai, Bathmanathan, & Azami, 2021). Similarly, the Malaysian government has implemented some initiatives to improve the health of its citizens and create a better environment, such as committing to a lower carbon footprint and reducing air pollution, Malaysia Green Technology Corporation, Sustainable Development Goals (SDGs), MGTC, which leads the nation in the areas of Green Growth, Climate Change Mitigation, and Climate Resilience and Adaptation (IGEM, 2021). Other national programs, such as the eco-labelling and MyHIJAU programs, have been introduced to encourage and promote sustainable consumption practices in Malaysia (Myhijau, 2018). Despite the government's green initiatives, Malaysia still has a low level of green consumption. Nevertheless, there is a lack of studies to investigate the influence of government green initiatives on consumers' intentions to purchase green products in Malaysia. In addition, not a single study was found in the context of government green initiatives, their influence on intention to purchase green products,

and a moderating role of price sensitivity in Malaysia. This study, therefore, will fill the research gap by investigating such unstudied relationships

2.2.7 Perceived price sensitivity (moderator)

Price sensitivity is “the extent of consciousness and reaction displayed by consumers when finding differences in prices of products or services” (Hsu et al., 2017). Price sensitivity is a variable that describes how consumers react in situations of price changes. Some previous studies have tried to explore the potential influence of price sensitivity on consumers’ perceptions in consumer intention research. For example, studies conducted by Hsu et al. (2017) and Ling (2013) regarding green products for the assessment of consumers’ green purchase intention and its determinants (attitude, subjective norms, and perceived behavioral control) support the role of price-sensitivity as a positive moderator. In addition, Erdil (2018) revealed that price sensitivity moderates the relationship between environmental concern, environmental attitude and green purchase intention are partially accepted. In Malaysia, a study by Saleki et al. (2019) revealed that the relationship between purchase intention and purchase behavior is stronger for Malaysian consumers who are less conscious of price. In contrast, the strength of this relationship decreases for consumers who are more aware of the price. Based on the empirical evidence from previous literature, this study also takes price sensitivity as a moderating variable to explore consumers’ insights about how it moderates the links between perceived determinants and intention to purchase green products in Malaysia.

2.3 Purchase intention

Purchase intention is the plan to buy a specific product or service within a designated time (Morwitz, 2014). The purchasing intention concept has importance in the field of marketing. Intentions are different from attitudes, and it might be defined as the person’s motivation in the sense of his or her conscious plan to exert effort to carry out a behaviour (Morwitz, 2014). The terms "green purchase intention" or "intention to purchase green products" can be used interchangeably and are both acceptable (Smith & Paladino, 2010; Sreen, Purbey & Sadarangani, 2018). This study uses the term intention to purchase green products as a dependent variable. It can be defined as “the willingness of an individual to consider and prefer the green product rather than the conventional or traditional product in the decision-making process” (Lasuin & Ching 2014). According to a systematic review by Rehman et al. (2022), some authors, including Chuah and Lu (2019); Noor et al. (2012); Rajadurai, Bathmanathan, and Azami (2018) in Malaysia have focused on consumers’ purchasing behaviours and their studies are limited to those consumers who have experienced green products while excluding those who have not yet experienced green products. The systematic review of Rehman et al. (2022) found that the perceived determinants (mentioned above) are the strongest predictors of intention to purchase green products, and the relationships between these determinants and intention to purchase green products are very less researched in the Malaysian context. Therefore, this paper will fill these research gaps by investigating such relationships.

2.4. Study framework

As mentioned in Figure 1, the study framework is theoretically based on the Theory of Reasoned Action known as TRA. TRA, developed by Fishbein and Ajzen (1975), is a theoretical model that is widely used among researchers to investigate consumer behavioral intention. TRA is generally highly sophisticated at both the conceptual and quantitative levels. The hypotheses developed for this study are based on previous studies conducted in the context of green products.

2.5 Research questions

Research question1: To what extent do Malaysian consumers intend to purchase green products?

Research question2: Do perceived determinants such as attitude, subjective norms, environmental concerns, environmental knowledge, consumer effectiveness, and government green initiatives affect Malaysian consumers’ intentions to purchase green products?

Research question3: What is the moderating effect of price sensitivity on the relationship between perceived determinants and intention to purchase green products?

2.6 Research hypotheses and framework

The independent variables as mentioned in Figure 1 to be tested in this research include attitude, subjective norms, perceived environmental concern, perceived environmental knowledge, perceived consumer effectiveness, and

government green initiatives. The moderating variable, perceived price sensitivity, will be tested among the independent and dependent variables. The hypotheses of the study are as follows:

- H1: Attitude toward green products significantly affects consumers' intention to purchase green products.
- H2: Subjective norms significantly affect consumers' intention to purchase green products.
- H3: Perceived environmental concern significantly affects consumers' intention to purchase green products.
- H4: Perceived environmental knowledge significantly affects consumers' intention to purchase green products.
- H5: Perceived consumer effectiveness significantly affects consumers' intentions to purchase green products.
- H6: Government green initiatives significantly affect consumers' intentions to purchase green products.
- H7: Perceived price sensitivity moderates the relationship between consumers' attitudes towards green products and their intentions to purchase green products.
- H8: Perceived price sensitivity moderates the relationship between subjective norms and intention to purchase green products.
- H9: Perceived price sensitivity moderates the relationship between perceived environmental concern and intention to purchase green products
- H10: Perceived price sensitivity moderates the relationship between perceived environmental knowledge and intention to purchase green products.
- H11: Perceived price sensitivity moderates the relationship between perceived consumer effectiveness and intention to purchase green products.
- H12: Perceived price sensitivity moderates the relationship between government green initiatives and intention to purchase green products.

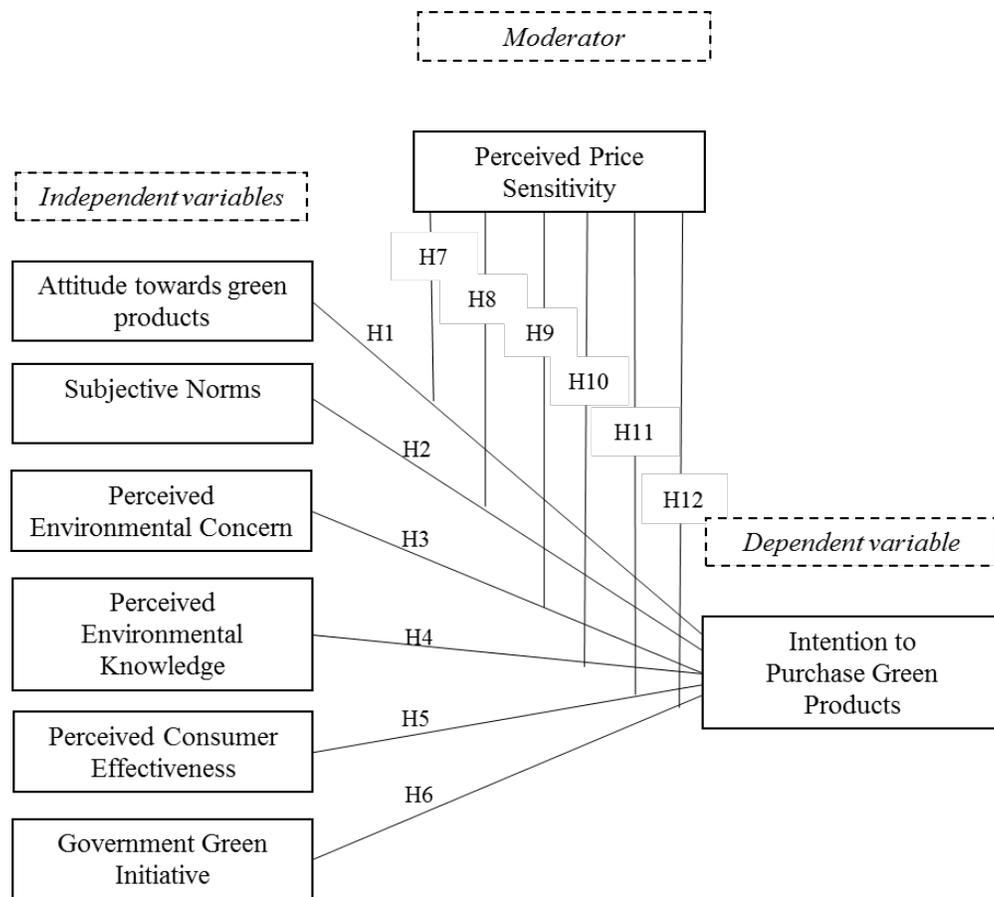


Figure 1: Proposed framework

3. Methodology

3.1 Research approach

This study is quantitative as data collection and analysis will be in numeric form. This study will follow the stance of the positivism philosophy. This philosophy is typically deductive, highly structured, with large samples, and generally quantitative methods of analysis, but a range of data can be analyzed (Saunders et al., 2019). In addition, the research approach that will be adopted for this study is the deductive approach. In addition, regarding this study, the objective is to test and verify the theory rather than develop it. The authors adopted a theory that is TRA. Furthermore, the authors will collect the data to test it and will reflect on their approval or disapproval of the results and findings. For this study, the survey research strategy will be used because this strategy is usually associated with a deductive research approach

3.2 Research design

For this study, the population is Malaysian consumers. However, it isn't easy to cover all Malaysian consumers, especially as a cross-sectional study. Therefore, redefining the target population, the millennial consumers are the target population for this study. There is no agreement on the generational concept of the millennial. They are classified in many ways, including having been born between 1979 and 2001, 1980 and 2000, 1982 and 2002, and so on. Within this study, the authors have decided to go with the range definition of someone that is born between 1980 and 2000 since this definition seems to capture an average of all the definitions that most academics have used (Hwang et al., 2015; López-Fernández, 2020; Lu et al., 2013; Newbold & Scott, 2017; Tan & Lau, 2016). Therefore for this study, the age limit for the millennial generation is considered to be 22 to 44 years old. Rajadurai et al. (2021) and Sidhu (2020) further support this age limit within the context of Malaysian millennials.

Regarding the discussion on probability and non-probability sampling and the nature of the study, the researcher realized that cluster sampling is a type of probability sampling and is the appropriate sampling technique applied in this study.

3.3 Data collection

The sample respondents for this study will be collected from the district's cities of Johor, Perak, and Selangor. In addition, Johor, Perak, and Selangor are selected based on the population's highest penetration rate among the Peninsular Malaysia states. A sample size determination software called Raosoft® is used to further determine the required sample size for this study based on the target population (3922800), and the required sample size is 385 with a confidence level of 95% and a margin of error of 5%. For data collection, a Google form will be created and sent to respondents via social media groups in these states. In addition, a QR code will be generated and printed on paper to collect face-to-face data.

3.4 Data analysis

The collected data will be coded into SPSS as it only deals with the numerical data. The choice of SPSS is important to conduct the basic data analysis like finding missing values in the data displaying the frequency of the respondents' demographics. In addition, this study will apply PLS-SEM for data analysis to determine the direct and indirect relationships and also the moderating relationships among the dependent and independent variables

4. Conclusion

This particular conceptual paper is the earliest article produced from the research. It highlights the problem statement associated with the Malaysian consumers' intentions to purchase green products that motivate the research, delineates the research questions and hypotheses to be tested, and reviews the literature relevant to the major areas in marketing such as green products purchase intention and determinants influencing intentions to purchase such products. Future articles to be generated from this research will discuss in greater detail the aspects of experiments methodology used, survey instruments and administration, descriptive and inferential results, and theoretical and practical implications of this research. Findings from this research will assist the manufacturing industries and marketers in further improving their products and services to improve Malaysian consumers' intentions to purchase green products. In addition, the

study findings will provide new insights for policymakers on developing or improving their policies that can promote green consumerism among Malaysian consumers.

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Biographies

Zahoor Ur Rehman is Pursuing a Degree of Doctorate in Technology Management in the faculty of Technology Management and Business at University Tun Hussein Onn Malaysia (UTHM). The author has published several research papers in different journals and also conference papers. The author research interest is in consumer behavior, e-banking, sustainable marketing and environmentally sustainable in the context of consumer purchasing

Noor Aslinda Abu Seman is a lecturer at Department of Business Management, Faculty of Technology Management and Business, University Tun Hussein Onn Malaysia (UTHM), Johor, Malaysia. She joined UTHM since October 2017. She completed her diploma in Technology Management (Accounting) from University Technology Malaysia (UTM) KL City Campus in the year of 2009. In 2011, she obtained her first degree in Bachelor of Management

(Marketing) from UTM Skudai and graduated with first class. Due to date, she was offered for fast-track program at Doctorate level in Management and completed my PhD in 2017. Her research interest includes green supply chain management, marketing, small and medium enterprises (SMES), entrepreneurship, green marketing, green innovation, supply chain management, as well as management accounting.

Amran Harun Amran Harun is an Associate Professor of Marketing at the Business Department, Faculty of Technology Management, University Tun Hussein Onn Malaysia (UTHM). Before joining UTHM in 2016, Dr. Amran Harun was at the University Malaysia Sabah (UMS) since 1999, serving the School of Business and Economics. He earned his Ph.D. from University Sains Malaysia (USM), MBA from University Putra Malaysia (UPM), and received his bachelor's degree from Indiana University Bloomington, Indiana, USA. Dr. Amran has taught various marketing courses at postgraduate and undergraduate levels, including marketing research, strategic marketing, consumer behavior, marketing distribution, and international marketing. Dr. Amran is the co-author of many books and journal articles. He has published more than 100 refereed articles and book chapters and is chief editor for the Journal of Social Transformation and Regional Development (JSTARD). He is also currently supervising numerous students at the Master and Ph.D. levels.